State Payment Limitations on Medicare Cost-Sharing: Impacts on Dually Eligible Beneficiaries and Their Providers

Final Report

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Executive Summary

Section 125 of the Benefits Improvement and Protection Act (BIPA) of 2000, directed the Secretary of Health and Human Services to conduct a "Study on Limitation on State Payment for Medicare Cost-Sharing Affecting Access to Services for Qualified Medicare Beneficiaries". That section requires that the study "determine whether access to certain services (including mental health services) for qualified Medicare beneficiaries has been affected by limitations on a State's payment for Medicare cost-sharing for such beneficiaries…" In addition, the study is to "analyze the effect of such payment limitation on providers who serve a disproportionate share of such beneficiaries". To our knowledge, this is the first study to determine how much state Medicaid programs actually pay, and how such payments affect both dually eligible beneficiaries and the providers that serve them.

Our study is based on a quasi-experimental design that analyzes changes in access from 1996 (pre-Balanced Budget Act [BBA]) to 1998 (post-BBA). We take advantage of cross-state differences in both levels of cost-sharing payments and the magnitude of the payment change. In addition, we use the experience of non-dual Medicare beneficiaries to control for changes over time in service use that are not related to changes in cost-sharing payments. Nine states were included in the study. They were classified into three groups based on how their state plans reported they paid for Medicare Part B deductibles and coinsurance:

1. <u>States that historically have paid the full Medicare cost-sharing amount:</u>

- Arkansas
- Indiana

2. States that historically have paid up to the Medicaid rates:
   - California
   - Colorado
   - Kansas
   - New Jersey
   - Wisconsin

3. States that switched their policy following BBA:
   - Alabama
   - Michigan

Both Medicare and Medicaid eligibility and claims data were merged to calculate cost-sharing payments, beneficiary utilization, and provider impacts.

How Much Do States Actually Pay?

Among the nine states we studied, only Arkansas reimbursed physicians the full cost-sharing amounts for dually eligible beneficiaries they treated. The remaining states reimbursed anywhere from 20 to 56 percent of Medicare deductibles and coinsurance in 1996. Consider, for example, an office visit with a Medicare allowed charge of $100, with no outstanding deductible. Medicare reimburses the physician $80, with the remaining $20 to be reimbursed by the state Medicaid program. For those states whose

state plans report that they pay full Medicare cost-sharing amounts, the expected payment to physicians would be the full $20. In 1996, four of the nine states shown in Table ES-1 reported that they paid full cost sharing (Arkansas, Indiana, plus the two BBA change states). In our example, Arkansas paid the full $20 on average; the remaining three states paid between $6 and $11. The other five states pay "state plan rates", which from a practical standpoint usually means the lesser of the Medicare payment or what their state Medicaid program would have paid for the same service. In our example, these states paid between $4 and $11.

How can Medicare cost sharing be below 100 percent for some states, even though their state plans report that they will reimburse for the full cost-sharing amount? States can only pay for cost-sharing amounts if they receive cross-over claims for Medicare services. In order to examine whether the absence of cross-over claims explains lower than expected cost-sharing payment amounts we merged Medicaid claims to the associated Medicare claim in three states – Alabama, Colorado, and Michigan. (This merge was not possible in the other six study states because of limitations in their Medicaid claims data.) We found that the majority of Medicare claims in these three study states had no matching Medicaid claim for the cost-sharing. For those claims that did match, the cost-sharing payments were generally consistent with state policies. In Alabama, for example, the average payment on a $20 cost-sharing amount was $18, close to the expected 100 percent payment in 1996. In Colorado and Michigan the average payment was $16, far higher than the amounts calculated using all Medicare claims.

Table ES-1

Changes in Cost-Sharing Payments for Physician Services, 1996 to 1998 (hypothetical example of $20 coinsurance liability)

	Amount Paid by Medicaid 1996	Amount Paid by Medicaid 1998	Percent Change
States Paying Full Medicare Amount			
Arkansas	$19.47	$20.00	2.7%
Indiana	11.28	10.42	-7.6
States Historically Paying Lower Amount			
California*	6.10	3.02	-50.5
Colorado	4.08	4.08	0.0
Kansas	5.62	9.56	70.1
New Jersey	10.88	7.30	-32.9
Wisconsin	4.84	4.48	-7.4
BBA Change States			
Alabama	10.94	5.76	-47.3
Michigan	6.38	1.56	-75.5

* According to its state plan, California paid full Medicare cost-sharing amounts for QMB-only beneficiaries. As seen in Table 3-2, however, the amounts paid did not vary by type of dual eligibility.

SOURCE: Medicare Part B and SMRF OT claims for nine states, 1996 and 1998.

There are many reasons physicians may not submit claims. First, and probably most important, many physicians may not bother because of the low expected return. Second, many physicians treat only one or two dually eligible beneficiaries per year, and the administrative costs of billing Medicaid for the cost-sharing may be burdensome. This will be particularly true for physicians who do not usually treat Medicaid patients, and may not even be Medicaid participating providers for payment purposes. Third, the early 1990's witnessed a flurry of litigation by providers over states' attempts to limit Medicaid cost-sharing for dually eligible beneficiaries. The confusion engendered by conflicting rulings in various circuit and district court cases may have led some physicians to believe that they would not be paid (and hence they did not bother to submit bills).

Following BBA, the percentage of Medicare cost sharing paid by Medicaid was reduced in six of the nine study states. Of these, four made dramatic reductions including, not only the two BBA change states, but also New Jersey and California. In our $20 copay example, Michigan now pays physicians only $1.56 on average.

Outpatient mental health treatment is subject to a much higher cost-sharing rate under Medicare (Title XVIII, Section 1883 (c) of the Social Security Act), and we examined cost-sharing for these services separately[1]. Analysis of outpatient mental

[1] Section 1833(c) of the Social Security Act provides that, for certain outpatient psychiatric services, the Medicare program will consider for payment purposes only 62 ½ percent of the Medicare allowed amount. The Medicare program pays the provider 80 percent of the 62 ½ percent amount. Since the remaining 37 ½ percent is not considered coinsurance, the state's liability is limited to the 20 percent of the 62 ½ percent amount. Practitioners may bill the Medicare beneficiary for the 37 ½ percent amount not reimbursed by either the Medicare program or the state unless the state charges a nominal Medicaid copayment for the service.

health treatment was again limited to three of the nine states due to data limitations in other states. The reduction in Medicaid payments for Medicare deductibles and coinsurance was substantial in all three states, ranging from 13 percent to 87 percent. Even in 1996, however, payments in two of the states were negligible, suggesting that mental health providers receive little in cost-sharing payments from those state Medicaid programs. As with physicians generally, we believe that many mental health providers do not bother to submit cross-over claims for their dually eligible patients.

Consider a second example of an outpatient psychotherapy visit of $100. Medicare reimburses the provider $50 with the balance to be paid by states and the beneficiaries or their private insurers (if any). CMS considers only $12.50 of this amount to be cost-sharing for which states are potentially responsible. However, we see from Table ES-2 that, with the exception of Colorado in 1996, none of these states were paying even this more restricted definition of cost-sharing. While Colorado paid $25 on average in 1996, Alabama paid about $2 and Michigan $4. By 1998, Colorado was paying only $8.75, but still considerably more than Alabama ($2) or Michigan ($0.55).

What are the implications of these cost-sharing payment limits for beneficiaries and providers? Let's use Michigan, one of the BBA change states, and our $100 office and psychotherapy visits as an example. The typical physician received $100 in reimbursement from Medicare and the non-dually eligible beneficiary. (For illustrative purposes, we assume here that this higher income beneficiary does, in fact, pay the full

Table ES-2

Changes in Cost-Sharing Payments for Outpatient Mental Health Treatment (hypothetical example of $50 coinsurance liability)

	Amount Paid by Medicaid		
	1996	1998	Percent Change
Alabama	$2.40	$2.10	-12.5
Colorado	25.05	8.75	-65.1
Michigan	4.20	0.55	-86.9

SOURCE: Medicare Part B and SMRF claims for three states, 1996 and 1998.

coinsurance, or has a supplemental policy to cover it. In practice, providers may not always receive full cost-sharing payments for non-dually eligible beneficiaries.) For a dually eligible patient, however, this physician received only $86 ($80 from Medicare and $6 from Medicaid) in 1996, falling to $82 in 1998. The discrepancy is even more dramatic for the typical mental health provider. Rather than $100, this provider received $54 in 1996, falling to $50.55 in 1998. Given these markedly lower payment amounts, physicians and mental health providers may choose to restrict the number of dually eligible beneficiaries they treat, or not treat them at all. As a result, dually eligible beneficiaries may encounter difficulties in obtaining access to services.

Do Medicaid Payment Limits Affect Access?

Holding changes in service use by non-dually eligible beneficiaries and other factors constant, changes in the percent of cost-sharing paid by Medicaid had a significant impact on access to physician outpatient visits. Reductions in Medicaid cost-sharing payments lowered the odds that a dually eligible beneficiary would have an outpatient visit. (Conversely, increases in cost-sharing payments raised outpatient visit rates.) The absolute size of the impact depends on the size of the cost-sharing payment change. For example, decreasing payments by 10 percent leads to a one percent reduction in the probability of an outpatient visit. However, in those states with relatively large reductions, the impact is considerably larger. The change in Medicaid cost sharing from 1996 to 1998 is estimated to have reduced the odds of an outpatient visit by 3 percent in Alabama and California, and 5 percent in Michigan.

We hypothesized that if reduced cost-sharing payments restricted access to office visits, then access to preventive services might also be affected. However we did not find any evidence to support this. Reduced cost-sharing payments for office visits had no effect on the odds of dually eligible beneficiaries receiving a flu shot, of female dually eligible beneficiaries receiving a Pap test or of males receiving a PSA test. Payment reductions were actually associated with an increase in the likelihood of female dually eligible beneficiaries receiving a mammogram.

We could only test the impact of Medicaid cost-sharing payment changes on outpatient mental health treatment in three states. Cost-sharing payments fell in all three

states and had a substantial impact on access to outpatient mental health treatment. A 10 percent reduction in Medicaid cost-sharing reduced the odds of having an outpatient mental health treatment visit by 3 percent, but did not affect the number of visits for those with at least one such visit. For those beneficiaries with at least one visit, there was a significant change in the mix of providers seen; they were less likely to be treated by a psychiatrist and more likely to be treated by a social worker. Larger reductions resulted in proportionately larger effects on access. Michigan's reduction in cost-sharing payments post-BBA, for example, is estimated to have lowered the probability that a dually eligible beneficiary would receive outpatient mental health treatment by 21 percent.

How Do State Cost-Sharing Policies Affect Disproportionate Share Providers?

The majority of physicians and other mental health providers who treat dually eligible beneficiaries actually see very few of them. Over one-half of physicians treated fewer than 10 dually eligible patients over the course of a year, and over one-half of mental health providers treat fewer than 5. This uneven distribution of beneficiaries across providers implies that a small number of providers treat a disproportionate share of dually eligible beneficiaries. About 10-12 percent of physicians are responsible for roughly one-half of all dually eligible beneficiaries in their respective states. The distribution is even more skewed for mental health providers, with an even smaller proportion of mental health providers responsible for the majority of dually eligible beneficiaries receiving mental health services in their respective states.

Providers with larger dually eligible practices are paid a higher share of their cost-sharing amounts from Medicaid. Cost-sharing percentages for smaller dually eligible practices are lower due to the greater number of providers in those practices who received *zero* cost-sharing payments from Medicaid. We believe that many providers may not bother to bill Medicaid for cost-sharing amounts, because of the administrative costs involved and the low expected return. This will be particularly true for those providers who only treat a few dually eligible beneficiaries a year. Furthermore, many with small dually eligible practices may not even be Medicaid participating providers (and hence can not receive payment from their Medicaid programs).

While providers treating large numbers of dually eligible beneficiaries collect a higher percentage of the Medicare cost-sharing amount from Medicaid than other providers, they still receive far less than they would have from their non-dually eligible Medicare patients (again, assuming that the non-dually eligible pay the full cost-sharing out-of-pocket or have supplemental insurance to cover it.) Among physicians with caseloads of 100 or more dually eligible beneficiaries, these reductions in revenues accounted for 4-6 percent of total Medicare revenues in 1998, up significantly from 1996. Among mental health providers with large dual eligible caseloads (50 beneficiaries or more), the revenue reductions were considerably larger, representing 11 to 22 percent of their total Medicare revenues in 1998.

Reducing cost-sharing payments may lead providers to either restrict the number of dually eligible beneficiaries they treat, or stop treating them altogether. The average dually eligible caseload (number of patients per provider) fell from 1996 to 1998 in both

Colorado and Michigan. Reductions were observed for both physicians and mental health providers. There is also some evidence that fewer providers may be willing to treat dually eligible beneficiaries. The absolute number of physicians treating dually eligible beneficiaries in Colorado fell 3 percent from 1996 to 1998. This decline included both generalists and specialists. (The numbers increased in the other two states.) Fewer mental health providers were treating dually eligible beneficiaries in 1998 than in 1996: 6 percent fewer in Colorado and 3 percent fewer in Michigan. (By contrast, the number of mental health providers increased in Alabama.) Growth in managed care enrollment (both Medicare + Choice and Medicaid managed care plans) among dual eligibles in Colorado and Michigan may contribute to the decline in dually eligible caseloads and the reduction in the number of physicians treating dual eligibles observed in these states.

Study Limitations

The major limitation of our study is the relatively small number of states on which it was based. While our nine study states were geographically diverse and were chosen to represent a range of cost-sharing payment policies, they may not be representative of all 50 states. In addition, our estimates of impacts of changes in physician payment were based on nine state-level observations. While the differences in baseline levels, the magnitude of the change, and even the direction of change introduced variation into the analysis, we still were limited to essentially nine degrees of freedom in our key explanatory variables. This problem was much more acute in our analysis of

outpatient mental health treatment where we were limited to only three states due to data limitations. It is possible that these three states were atypical with regard to both changes in their payment policies and changes in utilization over time. Nevertheless, the estimated impacts on access to outpatient mental health treatment were so large that policymakers can not afford to dismiss the findings as being the unique experience of three states. Further work with additional states would help to either confirm or moderate our findings.

In addition, the completeness of the Medicaid claims data is unknown, and it is possible that we have under-estimated cost-sharing payments in some states. Indeed, in the three states where we could match Medicare and Medicaid claims, there was no matching Medicaid cost-sharing claim for the majority of Medicare claims. However, the percents paid by Medicaid were so low in many of our study states that it is highly unlikely that these could all be attributed to missing data. Rather it is more likely that either the provider did not submit a claim for the cost-sharing payment or the Medicaid payment was zero. Medicaid payments for inpatient hospital cost-sharing, where states are known to be more generous than for physician services, also were much higher. Furthermore, relative levels of cost-sharing for physicians' services across states were largely consistent with reported state policies and changes in those policies post-BBA.

Finally, utilization represented in claims data was the only measure of access available for this study. As a result, we are not able to evaluate the extent to which access to needed services is jeopardized or the impact of changes in utilization on health

outcomes. Nonetheless, the utilization measures included in this report are believed to impact outcomes.

What Do These Findings Mean for Beneficiaries and Providers?

Providers in most of the states we examined received far less than the full cost-sharing amounts, usually receiving only slightly more than Medicare's payment for their dually eligible patients. Reductions in these cost-sharing amounts had the hypothesized effect: access to outpatient physician visits for dually eligible beneficiaries was reduced relative to non-dual Medicare beneficiaries in these states compared to other states. The magnitude of the effect was particularly large for outpatient mental health treatment.

These findings suggest that dually eligible beneficiaries may be a less attractive patient population for providers in many states. Providers may be either limiting the number of dually eligible beneficiaries they will accept, or choosing not to treat any. Evidence from two of three states suggests that both may be happening, particularly among mental health providers. If this pattern persists, then access to care for the nation's low-income elderly and persons with disabilities could be further jeopardized.

Allowing state Medicaid programs to pay variable state rates introduces substantial inequities among dually eligible beneficiaries. Dually eligible beneficiaries in Arkansas are "fully insured", and can visit physicians without expecting them to forego some portion of their Medicare Fee Schedule amount. By contrast, dually eligible beneficiaries in California, Colorado, or Michigan may be limited in which physicians

are willing to accept a substantial discount off the Medicare Fee Schedule amount in return for treating them.

State discretion in cost-sharing payment policy also weakens the benefits to QMB enrollment. At the same time that CMS has been working hard on QMB outreach and enrollment, the monetary value of the QMB benefit has continued to diminish following BBA. Beneficiaries enrolling in the QMB program will get state buy-in of their Part B premiums, but may find that some providers are unwilling to treat them because of low Medicaid cost-sharing payments.

Policy Implications

Policy implications from this study fall into three area: (1) the need for further research; (2) development and implementation of new data and data systems; and (3) changes in Medicare cost-sharing policy for dually eligible beneficiaries.

Further Studies

As noted earlier, this report was restricted to a small number of states, which may limit its generalizability to the U.S. as a whole. Future research should:

- Extend the current study to include a larger number of states and allow for a longer post-BBA period; and
- Ensure that the Medicaid data necessary to conduct such a study remain available.

This would provide a more robust measure of the impact of cost-sharing payment limitations on access, and would allow us to determine whether these impacts persisted over time.

The majority of Medicare physician claims in our nine states had no associated Medicaid claims for the cost-sharing amounts. The reasons for this are unclear, but we suspect that many physicians simply failed to submit "cross-over" claims. Thus, additional research should also include:

- A study to determine the reason for these missing "cross-over" claims; and
- A study of why physicians do not submit claims in the first place.

Based on the claims data available for this study, it is not possible to directly evaluate the impact of any changes in access on outcomes. Thus,

- Future studies should also address the effect on outcomes of changes in access due to state limitations on cost-sharing payments.

<u>New Data and Data Systems Development</u>

The implementation of a monitoring system would enable CMS to track the ability of dually eligible beneficiaries to access providers. Such a system would require the following:

- Availability of Medicaid eligibility and claims data for all states on a timely basis and their conversion to SMRF (now MAX) files, i.e., standard analytic files similar to those now in use for Medicare.
- Inclusion of procedure codes on all dual eligible claims submitted by states to CMS.

- Continuation of the recent initiative to report type of dual eligibility on states' MSIS submissions.
- Continue development of a web-based repository for state plan information (including states' cost-sharing policies).

Policy Changes

In order to ensure that dually eligible beneficiaries realize the same access to providers as other Medicare beneficiaries, policymakers should consider changing current law. In particular, policymakers should consider the following:

- Have the Medicare program assume responsibility for cost-sharing payments for QMBs.

Policymakers would need to weigh the relative costs and benefits of such a cost-sharing change with other potential program changes, such as a Medicare prescription drug benefit.

Assuming that this responsibility remains with the states, policy makers may want to:

- Require state Medicaid programs to pay the full Medicare Part B cost-sharing amounts on behalf of dually beneficiaries.
- Apply any such change to all dually eligible beneficiaries, and not just QMBs. The former include some of the sickest of all low-income Medicare beneficiaries.

Payment of full Part B cost-sharing amounts would certainly increase state Medicaid outlays, a move that would cause concern in states whose Medicaid budgets already are strained by the weak economy. However, at least one-half of these added costs would be

borne by the federal government, thus blunting the full cost impact. Even still, the financial impact on some state budgets would be severe.

If policymakers choose to reconsider cost-sharing payments for dually eligible beneficiaries, they should also review the lack of mental health parity in the Medicare program. In particular, policymakers should

- Reconsider the justification behind the Medicare payment of only 50 percent toward outpatient mental health treatment.

There are substantial fiscal implications, regardless of who (the federal government or state Medicaid programs) accepts increased responsibility for Medicare cost-sharing payments on behalf of dually eligible beneficiaries. Federal and state policymakers must consider the relative merits of increased outlays for cost-sharing payments compared to other priorities, and who should appropriately bear the added financial burden. Absent some type of policy change, however, access to Medicare services for dually eligible beneficiaries may continue to decline.

1 Introduction

1.1 Statement of the Problem

Low-income Medicare beneficiaries can get help with their out-of-pocket expenses through their state's Medicaid program. These out-of-pocket expenses include the Part B premium, Part A and B deductibles, and Part A and B coinsurance amounts.[2] Premiums, deductibles and coinsurance are collectively termed cost-sharing. These Medicare beneficiaries are commonly called "dually eligible" beneficiaries, because they are eligible for both Medicare and Medicaid. The extent of Medicaid benefits varies, depending on how Medicare beneficiaries qualify for Medicaid. SSI recipients (in most states) and other Qualified Medicare Beneficiary (QMB)-Plus beneficiaries are entitled to receive Medicare cost-sharing payments on their behalf, as well as full Medicaid benefits, including prescription drugs. QMB-only beneficiaries are entitled only to Medicare cost-sharing payments. States are only required to pay cost-sharing amounts on behalf of their QMBs, including SSI recipients and other QMB-Plus beneficiaries, as well as these QMB-only beneficiaries. However, many states also pay cost-sharing amounts on behalf of those beneficiaries who qualify for Medicaid because they are medically needy,

[2] A small number of Medicare beneficiaries may also be required to pay Part A premiums. These are individuals who do not have sufficient work history to qualify for Social Security. Medicare Part A covers inpatient hospital care, skilled nursing facility services following a hospital stay, hospice care, and certain home health services. Medicare Part B covers physicians and some non-physician providers, outpatient hospitals, laboratories, some home health care, and certain other services.

including all of the states included in our study. Therefore, we will refer to dually eligible beneficiaries generally (rather than QMBs) throughout this report, making distinctions by type of dual eligible status only when appropriate.[3]

Although many policymakers had viewed dually eligible beneficiaries as fully insured, believing that providers would receive 100 percent of the Medicare allowed charge for services rendered to most of these beneficiaries, states historically have had flexibility in what they paid toward Medicare cost-sharing for dually eligible beneficiaries, so long as their payment policy was written in their state plan. States may pay the full Medicare deductibles and coinsurance, a state plan payment rate, the rate that would have been paid on behalf of an individual who had Medicaid only, or anything in between. The extent of variation across state plans was little known, as there has been no central federal source of information documenting states' policies. In fact, however, a growing number of states have opted to change their state plans and not reimburse providers for the full coinsurance, especially if Medicare's own payment is as great or greater than what Medicaid would have paid for the same service. It is believed that at least 12 states had such a policy in 1996 (Nemore, 1997). While several state medical societies successfully challenged this policy in state courts during the 1990's, the Balanced Budget Act of 1997 (BBA) explicitly upholds the right of states to limit their liability for Medicare cost-sharing in this way. A second survey by Nemore (1999)

[3] There are additional categories of dually eligible beneficiaries, such as Specified Low-Income Beneficiaries (SLMBs), who receive payment of their premiums only. Since these beneficiaries are not eligible for Medicaid payment of any cost-sharing amounts, they are excluded from this report.

indicates that the number of states restricting their Medicare cost-sharing amounts had more than doubled (to at least 30) following BBA.

A hypothetical example will illustrate what is at stake for beneficiaries, providers, and for states. Consider a physician service for which the Medicare Fee Schedule, or allowed, amount is $100. Assuming that the deductible is satisfied, Medicare pays $80, and the remaining $20 is beneficiary coinsurance. For dually eligible beneficiaries, Medicaid may pay the $20, $0, or any amount in between, depending on the state plan.[4] Regardless of whether the state pays less than the full cost-sharing amount, providers are not permitted to collect any outstanding cost-sharing from the beneficiary unless the state charges a nominal Medicaid copayment for the service.

Medicare rules are quite different for outpatient mental health treatment (see Section 1833 (c) of the Social Security Act). Medicare considers only 62 ½ percent of the allowed amount for these services when calculating deductible and coinsurance payments, and then pays 80 percent of this amount, or one half of the total allowed amount (0.5 = 0.625* 0.8). In the case of Medicare-only beneficiaries, providers can bill beneficiaries for the remaining 50 percent. For dually eligible beneficiaries, however, CMS has determined that the maximum cost-sharing liability for Medicaid is only 20 percent of the 62 ½ percent amount, or 12 ½ percent of the total allowed amount. The decision to limit the definition of cost-sharing for outpatient mental health treatment (and hence the state's potential liability) was made in a CMS memorandum dated June 11,

[4] In no case does the provider receive less in total payments from both Medicare and Medicaid than would have been received for the same service provided to a Medicaid beneficiary without Medicare.

1992 from the Director of the Medicaid Bureau to the Associate Regional Administrator in Atlanta. (This reversed a previous CMS memorandum dated April 7, 1989 in which the 37 ½ percent remaining of the allowed amount was considered coinsurance for Medicaid payment purposes.)

The effect of this cost-sharing policy is that providers of outpatient mental health treatment services receive total reimbursement from Medicare and from cost-sharing that is well below the total they would receive for Medicare patients who do not receive Medicaid, assuming that these Medicare patients either pay the full coinsurance or have a supplemental policy to cover it. This disparity may exist for providers of other kinds of services as well, but it is the widest for mental health services. Consider an outpatient mental health therapy visit with a Medicare Fee Schedule allowed amount of $100. Medicare will pay $50 of this amount, and the coinsurance is $12.50. Medicaid may pay the full $12.50 amount, $0, or anything in between, depending on the state plan. While providers are legally permitted to bill dually eligible beneficiaries for the $37.50 that is not considered cost-sharing, there are no data on how often they do so. Given their very low incomes, it is unlikely that dually eligible beneficiaries could afford to pay these bills.

There is a well-established literature, documenting physicians' responses to the differential fees paid by health insurers, particularly public insurers.[5] Physicians segment

[5] This literature is based on the two-market demand model, first developed by Sloan et al. (1976) to explain physician participation in Medicaid. It was expanded to explain the physician's decision to accept Medicare patients on assignment (Mitchell and Cromwell, 1982), and later the physician's decision to sign the Medicare participation agreement (Mitchell *et al*., 1988).

their potential patient pool, based on insurer type, and will prefer to treat higher paying patients first (typically those with private insurance). Increases in public fees relative to those paid by private payers will encourage physicians to treat more public patients. Conversely, relative decreases in public fees will encourage physicians to treat fewer public patients, and possibly exit the programs altogether. Dually eligible beneficiaries residing in states that pay the full Medicare cost-sharing amounts will be as attractive to physicians as those Medicare beneficiaries who can afford to pay their own cost-sharing or who have supplemental Medigap insurance or employer-based retiree health plans to do so. Dually eligible beneficiaries in states with restrictive cost-sharing policies will be less attractive, on the other hand, and some may experience difficulties finding physicians willing to treat them. Given a choice between a Medicare beneficiary for whom the physician expects to receive 100 percent of the fee schedule amount, and one for whom the physician expects to receive only 80 percent, theory predicts that the physician will prefer the first beneficiary.

Federal policymakers have grown concerned that any potential access problems may have worsened under BBA. Dually eligible beneficiaries living in states that have shifted to more restrictive cost-sharing policies post-BBA may now find themselves less well insured. Theory predicts that physicians will be less likely to treat these dually eligible beneficiaries than they were prior to BBA, *all other things being equal*. Whether or not this has occurred is an empirical question.

Section 125 of the Benefits Improvement and Protection Act (BIPA) of 2000, directed the Secretary of Health and Human Services to conduct a "Study on Limitation

on State Payment for Medicare Cost-Sharing Affecting Access to Services for Qualified Medicare Beneficiaries". That section requires that the study "determine whether access to certain services (including mental health services) for qualified Medicare beneficiaries has been affected by limitations on a State's payment for Medicare cost-sharing for such beneficiaries…" In addition, the study is to "analyze the effect of such payment limitation on providers who serve a disproportionate share of such beneficiaries".

Many types of providers could potentially be affected by cost-sharing limitations. Unlike hospitals and outpatient departments (OPDs), these community-based providers do not receive any disproportionate share (DSH) funding that could help offset the added costs associated with dually eligible beneficiaries. Therefore, this study is largely focused on physicians and other mental health providers.

Section 125 refers to QMBs, rather than all dually eligible beneficiaries, presumably because state Medicaid programs have always had the statutory right to restrict cost-sharing payments to the Medicaid rate for non-QMB dually eligible beneficiaries. The effect of BBA was to give States the same flexibility with regard to cost-sharing limitations for QMBs that they historically had for other dually eligible beneficiaries (so long as these policies were in their State plans). We chose to include all dually eligible beneficiaries in this report for several reasons. First, currently available CMS files make it difficult to reliably identify dually eligible beneficiaries by reason for eligibility. Second, providers will not be able to distinguish one type of dually eligible beneficiary from another. Hence, any change in behavior in response to cost-sharing limitations should affect all dually eligible beneficiaries. Third, by limiting dually

eligible beneficiaries to just QMBs, we would under-state any impact of cost-sharing limitations on providers. Finally, each of our nine study states reports generally similar cost-sharing policies for all types of its dually eligible beneficiaries.

1.2 Overview of the Report

This report includes five additional chapters. Chapter 2 describes the data and methods used to conduct the study, including a discussion of state selection and the algorithms used to calculate cost-sharing amounts. The actual cost-sharing amounts are presented in Chapter 3. Changes in beneficiary access to physician office visits, preventive services, and outpatient mental health treatment are shown in Chapter 4. This chapter also includes a summary of multivariate analysis of the impacts of payment reductions on access. A detailed presentation of the multivariate results can be found in Appendix A. Provider impacts are described in Chapter 5. Finally, a summary of our findings is presented in Chapter 6, along with specific policy recommendations.

2 Data and Methods

2.1 Study Design

Our study is based on a quasi-experimental design that analyzes changes in access between 1996 (pre-BBA) and 1998 (post-BBA). Access is defined as utilization of physician outpatient visits, cancer screening and other preventive services, and outpatient mental health treatment. These measures are well-accepted indicators of access to personal health care services (Institute of Medicine, 1993). We take advantage of cross-state differences in both levels of cost-sharing payments and the magnitude of the payment change. In addition, we use non-dually eligible Medicare beneficiaries to control for changes over time in service use that are not related to changes in cost-sharing payments. If reduced cost-sharing impedes access to providers, then utilization is expected to fall (or rise more slowly) for dually eligible beneficiaries compared to non-dually eligible beneficiaries in the states with the greatest reductions in Medicaid cost-sharing payments relative to those in states with smaller reductions.

2.1.1 State Selection

Ideally, this study would have included dually eligible beneficiaries from all 50 states, plus D.C. Unfortunately, this was not possible for two reasons. First, prior to 1999, states were not required to submit Medicaid claims to CMS. In 1996, 33 states

participated voluntarily in the Medicaid Statistical Information System (MSIS) program, submitting claims and eligibility data to CMS. (The remaining states submitted aggregate enrollment and expenditure data as CMS forms 2082 and 64, respectively.) Second, due to Y2K and other factors, the production of State Medicaid Research Files (SMRFs) for 1996-1998 was delayed[6]. It was not possible to produce data for all 33 MSIS participating states in the time frame required for preparation of this report. Therefore, CMS identified a group of nine states that met study selection criteria and for which SMRF data could be produced within the available time frame.

We classified all MSIS participating states into three groups depending on their cost-sharing policies pre and post-BBA: (1) states that pay full Medicare cost-sharing amount; (2) states that historically have paid up to the Medicaid rates; and (3) states that had paid full Medicare cost-sharing amounts prior to BBA, but had changed this policy following BBA. Information on cost-sharing status was obtained from a study conducted for the Kaiser Family Foundation (Nemore, 1999). We then selected three states from each of the three groups. The nine states included: Alabama, Arkansas, California, Colorado, Indiana, Kansas, Michigan, New Jersey, and Wisconsin.

States were selected using the following criteria:

- The state should have relatively large numbers of dually eligible beneficiaries. This ruled out states like Alaska, Delaware, and Wyoming, among others.

[6] As part of the "SMRF-ing" process, CMS rolls up interim MSIS claims into final transaction bills, creates date of service files from files submitted based on date of payment, and cross-walks idiosyncratic state coding systems into a single uniform format.

- Medicare managed care penetration should be relatively limited among dually eligible beneficiaries. Because of the absence of encounter data from Medicare managed care plans, we would not be able to measure Medicare utilization for these enrollees. This ruled out Arizona.
- Relatively few dually eligible beneficiaries should be enrolled in Medicaid managed care plans that are capitated for acute (i.e., Medicare) services. Because these plans do not submit encounter data through MSIS, we would not be able to determine whether they had paid the coinsurance and deductibles on behalf of their Medicare enrollees. This ruled out Minnesota and Tennessee, two MSIS participating states with substantial mandatory enrollment of dually eligible beneficiaries during this time period.[7] A much larger number of states do enroll their beneficiaries in behavioral health plans, however, usually on a carve-out basis. Given the concerns over access to outpatient mental health care and burden on mental health providers, it was particularly important that we capture utilization of mental health services. This ruled out Iowa.[8]
- Based on initial review of MSIS data, CMS should be reasonably confident about the quality and completeness of the states' data submissions for both study years. This ruled out Florida.
- If possible, the selected states should be regionally diverse and include both large metropolitan and rural areas. Our final nine states represent all four geographic regions, and include very large cities (e.g., Los Angeles, Detroit, Newark, etc.) as well as the very rural areas of Alabama, Kansas, etc.

Some time after these states were selected, CMS obtained copies of their state Medicaid plans from the states' respective Regional Offices. These plans describe each

[7] California has mandatory enrollment of dually eligible beneficiaries in seven counties; these counties were dropped from the analysis. Other states offer voluntary managed care enrollment to their dually eligible beneficiaries, but the numbers enrolled in such programs tend to be small. We identified such beneficiaries from the SMRF person summary files and excluded them from the analysis.

[8] California also carves out Medicaid mental health services for all beneficiaries to local mental health agencies in all but two counties. However, these agencies are not capitated and receive state payments based on services provided. Thus, mental health claims are available in the SMRF files.

state's cost-sharing policy with respect to dually eligible beneficiaries. Based on this information, we had to re-classify our nine states as follows:

1. States that historically have paid the full Medicare cost-sharing amount:
   - Arkansas
   - Indiana

2. States that historically have paid up to the Medicaid rates:
   - California
   - Colorado
   - Kansas
   - New Jersey
   - Wisconsin

3. States that switched their policy following BBA:
   - Alabama
   - Michigan

California's state Medicaid plan indicated that it paid full Medicare cost-sharing amounts for QMB-only beneficiaries, while paying lower state rates for all other dually eligible beneficiaries. We chose to leave California in the above category, pending an empirical validation of its cost-sharing payment policy.

2.1.2 Beneficiary Sample Selection

We identified all dually eligible beneficiaries residing in these nine states from Medicare's 1996 and 1998 denominator files. To be included in the study, each dually

eligible beneficiary had to be eligible for both Part A and Part B and not enrolled in a Medicare HMO for at least one month of the calendar year. A list of all such dually eligible beneficiaries was extracted and run against the TPEarth file in order to identify those who were SLMBs[9]. Because SLMB-eligible beneficiaries do not receive cost-sharing payments on their behalf, they were dropped from the analysis.

The remaining dually eligible beneficiaries were matched with each state's SMRF person summary file. Since Medicare identifies beneficiaries by Health Insurance Claim Number (HICNO), while Medicaid uses Social Security numbers (SSNs), it was first necessary to run against CMS's cross-reference file to obtain SSNs for our sample. We were able to match Medicaid records for 97 percent of dually eligible beneficiaries in each of our nine states.

We then identified and dropped all dually eligible beneficiaries who were enrolled in capitated Medicaid managed care plans for their general medical care. Unfortunately, such enrollees are not easily identified in the SMRF data files. While the SMRF person summary file includes variables indicating enrollment in prepaid health plans and HMOs, these variables are used for behavioral health plans or dental plans as well as for comprehensive medical plans. We used a combination of this variable, and a

[9] The TPEarth Master File contains a buy-in eligibility code (BIEC) that indicates the basis for eligibility (e.g., QMB, SLMB, etc.). We used this code, along with a code identifying those SSI recipients who are automatically accreted into Medicaid, to identify SLMBs and to classify the remaining dually eligible beneficiaries into three groups: SSI, QMB-only, and the medically needy. Because states have had no incentive to report these categories accurately, CMS staff have questioned the reliability of the BIEC variable for some states. It is thus possible that our classification of dually eligible beneficiaries is not accurate in all cases. Furthermore, 18 states (including Indiana and Kansas, two of our study states) do not automatically accrete SSI recipients, and the algorithms we used in these cases may misclassify some SSI recipients as QMB-only beneficiaries. We believe that any misclassifications that might have occurred should be relatively few in nature and, in any case, should not affect the findings of our study.

variable capturing premium payments, to identify managed care enrollees in those states known to enroll dually eligible beneficiaries during this time period. This included California, Colorado, Michigan, and a very small program in Wisconsin. Dually eligible beneficiaries whose records indicated capitated managed care enrollment and who had premiums paid on their behalf that were consistent with a comprehensive medical plan were dropped from the study. All residents of California's seven mandatory enrollment counties were dropped. (Information on premium payments in these counties was used to help identify managed care enrollees in California's voluntary counties.) In all states, we erred on the side of dropping too many beneficiaries, rather than too few. The total number dropped was consistent with reported estimates of total managed care enrollment from state sources.

The final number of dually eligible beneficiaries included in the study is shown in Table 2-1 for each state and year. In addition, the table shows the number of dual eligibles excluded from the analyses because they were enrolled in Medicare+Choice, Medicaid managed care, and for other reasons. In some states, there were fewer dually eligible beneficiaries in 1998 than in 1996. This is due to an increase in Medicare+Choice enrollment or Medicaid managed care enrollment among dually eligible beneficiaries in that state, and hence an increase in the number of beneficiaries excluded from the study.

Our analyses of access to care also include non-dually eligible Medicare beneficiaries in these states as a control group. Similar to the dually eligible sample, we

Table 2-1

Dually Eligible Beneficiary Sample Sizes by State, Year, and Reason for Exclusion

	1996				
	Dual Eligibles in Denominator File	Dual Eligibles Dropped for M+C Enrollment	Dual Eligibles Dropped for Medicaid Managed Care Enrollment	Dual Eligibles Dropped for Other Reasons	Dual Eligible Sample
Alabama	135,294	6,341	0	10,017	118,936
Arkansas	89,309	209	0	8,190	80,910
California	839,843	192,432	79,113	31,778	536,520
Colorado	57,501	6,878	2,895	4,076	43,652
Indiana	93,582	1,285	0	13,809	78,488
Kansas	43,013	1,622	0	2,343	39,048
Michigan	149,393	6,507	7,047	16,500	119,339
New Jersey	149,197	14,142	0	17,164	117,891
Wisconsin	89,296	661	894	9,302	78,439
Total	1,646,428	230,077	89,949	113,179	1,213,223

	1998				
	Dual Eligibles in Denominator File	Dual Eligibles Dropped for M+C Enrollment	Dual Eligibles Dropped for Medicaid Managed Care Enrollment	Dual Eligibles Dropped for Other Reasons	Dual Eligible Sample
Alabama	141,692	8,293	0	12,701	120,698
Arkansas	88,716	595	0	9,334	78,787
California	853,260	199,225	85,562	31,145	537,328
Colorado	60,399	9,960	11,187	1,790	37,462
Indiana	98,526	1,579	0	15,205	81,742
Kansas	45,314	1,961	0	2,806	40,547
Michigan	157,597	6,905	25,180	17,583	107,929
New Jersey	158,755	18,038	0	18,397	122,320
Wisconsin	84,176	930	1,512	8,367	73,367
Total	1,688,435	247,486	123,441	117,328	1,200,180

required non-dually eligible beneficiaries to be eligible for both Part A and Part B and not enrolled in a Medicare HMO for at least one month of the calendar year. The final number of non-dually eligible beneficiaries included in the study is shown in Table 2-2 for each state and year. Because of computer limitations, we were not able to include all dual eligibles in some of our multivariate analyses. For the analyses of probability of an outpatient physician visit and probability of a flu shot, we randomly selected a 60 percent sample of the non-dually eligible beneficiaries that met our study criteria. For the analysis of the probability of a specialist visit, we selected a 70 percent random sample of non-dually eligible beneficiaries. These percentages were selected to yield the largest sample feasible for the multivariate analyses given the computer limitations.[10]

Table 2-2

Non-dually Eligible Beneficiary Sample Sizes by State and Year

	1996	1998
Alabama	522,381	517,227
Arkansas	356,677	350,447
California	1,675,134	1,563,628
Colorado	286,669	259,961
Indiana	741,184	741,127
Kansas	344,632	334,634
Michigan	1,241,757	1,219,204
New Jersey	993,986	894,427
Wisconsin	684,308	674,593
Total	6,846,728	6,555,248

SOURCE: Medicare denominator file, 1996 and 1998.

[10] The percentage is higher for the specialist visit analyses because these were restricted to beneficiaries with at least one office visit.

2.1.3 Provider Sample Selection

Our provider analysis was limited to the three states that reported Current Procedural Terminology version 4 (CPT-4) or HCFA Common Procedure Coding System (HCPCS) procedure codes on their Medicaid physician claims: Alabama, Colorado, and Michigan. Providers included all physicians (except radiologists and pathologists)[11], psychologists, and clinical social workers. Based on discussions during committee hearings, it appeared that Congress' concern was restricted to these community-based providers (as opposed to hospitals, for example, that can receive disproportionate share payments).

We identified unique providers based on the Unique Physician Identification Number (UPINs) associated with Medicare Part B claims for all dually eligible beneficiaries in these three states. Table 2-3 shows the total number of physicians and mental health providers by state and year.

SMRF claims were then matched to Part B claims based on the patient's HICNO, date of service, and procedure code. (States do not use Medicare UPINs, so we can not match based on provider ID numbers.) Relaxing the match criteria to HICNO and date of service alone did not appreciably increase the match rate. Table 2-4 shows the match rate by state and year. All matched claims had a positive Medicaid payment value. Presumably, any zero pay claims were not included in the states' MSIS submissions. The

[11] These two specialties were excluded because they generally do not see patients personally, and are unlikely to know the insurance status or expected payment associated with an individual patient. In addition, SMRF classifies claims for radiology and laboratory differently than for other physician services.

Table 2-3

Sample Sizes for Provider Level Analyses by State and Year

	1996		1998	
	Physicians (excluding Psychiatrists)	Mental Health Providers[a]	Physicians (excluding Psychiatrists)	Mental Health Providers[a]
Alabama	11,356	868	11,782	962
Colorado	7,842	979	7,561	910
Michigan	20,471	2,207	20,775	2,143
Total	39,669	4,054	40,118	4,015

[a] Includes psychiatrists, psychologists, and social workers.

SOURCE: Medicare Part B claims for nine states, 1996 and 1998.

Table 2-4

Medicare Part B and SMRF Matching for Provider Analyses

	Percent of Medicare Claims with SMRF Match	Percent of SMRF Claims with Medicare Match
Alabama		
1996	57%	86%
1998	28	89
Colorado		
1996	20	88
1998	32	67
Michigan		
1996	31	96
1998	7	85

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998

first column is the percent of all Part B claims for which we found a matching SMRF claim. As expected, the match rate was lower in 1998 for the two BBA change states (Alabama and Michigan), i.e., many fewer claims were either being submitted or paid at all. The second column represents the percent of SMRF outpatient claims for which we found a matching physician, psychologist, or social worker claim.

We examined the non-matching SMRF claims in all states to try to determine the reasons for the non-match. Many of the claims had invalid procedure codes, e.g., a four digit code rather than the five digit coding system employed by CPT-4 and HCPCS. However, these claims still failed to match even when procedure code was dropped as a matching criterion. We suspect one reason for non-matches was claims submitted by non-physician practitioners, such as podiatrists.[12] These claims were excluded from the Medicare Part B claims, but could not be excluded from the SMRF outpatient (OT) files, because there are no specialty codes in those data.

Our SMRF to Medicare match rates (the first column in Table 2-4) are very similar to the cost-sharing percentages calculated in Table 3-1, but using a very different methodology. Those percentages are based on dollars and include all SMRF physician claims, regardless of whether they matched and regardless of whether they had a valid procedure code. This gives us confidence that we have not mistakenly failed to match significant numbers of physician claims. Medicare Part B and SMRF claims were then aggregated up to the individual provider level by UPIN. Because the provider's practice

[12] We matched SMRF claims that had type of service code indicating either physician or other practitioner services. The latter undoubtedly included many types of practitioners that we excluded from our Medicare provider file.

location is not identified on Medicare claims, we assumed that the provider was located in the most frequently occurring county of those beneficiaries treated by that provider.

2.2 Data

2.2.1 Medicare Claims

Medicare claims were extracted for all dually eligible beneficiaries included in our study. These included MedPar records (acute hospital, other hospital, and SNF stays), Part B physician and other provider claims, durable medical equipment (DME), home health records, and outpatient hospital claims. These claims were used to measure utilization and to calculate potential cost-sharing liability.

2.2.2 Medicaid Claims

SMRF claims were extracted for our study beneficiaries. These included inpatient hospital records, long-term care records (psychiatric hospitals, nursing facilities, etc.), and all other (OT) records. The latter included claims for physicians, non-physician practitioners, hospital outpatient departments (OPDs), etc. Extracted claims included both (1) "cross-over" claims, or claims for Medicare's cost-sharing amount; and (2) claims for non-Medicare services. For study purposes, we were only interested in cross-over claims. However, very few cross-over claims for outpatient services were found in Michigan, especially for 1996. Conversations with state Medicaid staff in Michigan suggested that these claims had been improperly coded. Review of the non cross-over claims themselves

revealed that they were, in fact, claims for Medicare cost-sharing, i.e., the payment amounts and procedure codes were consistent with coinsurance amounts. Since there are few, if any, physician services that are not covered by Medicare, we re-classified all physician claims as cross-over claims.

After reviewing the SMRF outpatient records, it was discovered that only three of the nine study states reported CPT procedure codes on their physician claims for dually eligible beneficiaries: Alabama, Colorado, and Michigan. It is not clear why the remaining states did not have these codes on their claims. This substantially limited our analyses. As described below, our analyses of outpatient mental health treatment and our analyses of provider impacts had to be restricted to these three states. We were able to use all nine states, however, in evaluating beneficiary access to physicians generally.

2.3 Variable Construction

2.3.1 Calculating Coinsurance Amounts

A key component of this analysis is to identify the full Medicare coinsurance amounts for which the state Medicaid program is potentially liable. These amounts are calculated differently, depending on the service involved. How these amounts are reported on Medicare claims, and whether they are reported at all, also varies by the type of service.

Part A deductible and coinsurance amounts for hospital and SNF stays can be identified directly from the MedPar records. OPD records report Part B deductible and

coinsurance amounts, but only at the total claim level, not for individual line items or services. We can derive coinsurance amounts for individual services of interest (like mental health) by keying on the charges associated with individual revenue centers or procedure codes. Unlike other Part B services, where coinsurance is calculated based on a Medicare-determined amount like a fee schedule, coinsurance liability for OPD services is based on charges. The OPD coinsurance rate is 20 percent for all services (including mental health) once the deductible is satisfied, except for lab tests which have no coinsurance.

Home health services are not subject to any beneficiary copayments, but DME provided by home health agencies is subject to the same 20 percent coinsurance rate as all other Part B services. However, home health records contain no information on deductible and coinsurance amounts, and hence we were unable to calculate coinsurance liability for DME billed on home health records. (Most DME is billed directly by suppliers, however, where we can identify the coinsurance.)

Unlike other types of Medicare claims, Part B physician/supplier claims do not contain any information on beneficiary liability for coinsurance amounts, only for the annual deductible.[13] Beneficiary Part B coinsurance liability was constructed from individual claims and calculated as follows:

[13] Beginning in October 1997, this information was to be recorded on Part B records. In order to ensure comparability over time, we chose to construct Part B coinsurance amounts using the same algorithms for both 1996 and 1998.

> Coinsurance liability = [0.20*(allowed amounts for all services except laboratory, immunizations, and outpatient mental health) – deductible liability] + [0.50*allowed amounts for outpatient mental health]

Lab tests, and influenza and pneumococcal pneumonia immunizations are not subject to any Part B coinsurance. All other Part B services are subject to the 20 percent rate on the allowed charge or Medicare Fee Schedule amount, except for outpatient mental health treatment which is subject to the higher 50 percent rate. Technically, states are not liable for the full 50 percent, but only for the 12 ½ percent that is deemed cost-sharing, although some may choose to pay it all. We chose to use the 50 percent figure for our analysis, because it more accurately reflects the potential financial impact on providers and hence access for beneficiaries. However, in our analyses, we present the financial impact assuming both 50 percent and 12½ percent state liability. The 50 percent benchmark assumes that non-dually eligible beneficiaries either have supplemental insurance that covers the full cost-sharing amount or they pay the full coinsurance themselves.

2.3.2 Identifying Outpatient Mental Health Treatment

Unlike most Medicare services that are subject to a 20 percent coinsurance rate, beneficiaries are liable for 50 percent of the fee schedule amount for outpatient mental health treatment. This includes virtually all psychotherapy and other treatment services listed in the psychiatry section of the CPT-4 manual, regardless of provider, as well as some HCPCS codes introduced in 1997. The following services are <u>not</u> subject to the 50

percent coinsurance rate: diagnostic and evaluation services, all inpatient services provided in acute care hospitals, and brief outpatient visits whose primary purpose is to monitor medication. These latter services are subject to the 20 percent rate. Outpatient mental health services subject to the 50 percent rate were defined based on location of service and procedure codes from Part B claims.

2.3.3 Calculating Medicaid Payments for Dually Eligible Beneficiaries

Actual cost-sharing rates were calculated as the percent of Medicare cost-sharing (deductible plus coinsurance) actually reimbursed by the state. Medicaid payments for Medicare cost-sharing amounts were readily identifiable from SMRF for different types of providers, e.g., hospital, SNF, physician, etc. However, for analyses of cost-sharing payments by type of physician service (e.g., surgery vs. office visits) or for outpatient mental health treatment, we were limited to the three states that reported procedure codes. Thus, some analyses reported in subsequent chapters are based on all nine states and others on only three.

2.3.4 Identifying Disproportionate Share Physicians and Mental Health Providers

We considered several approaches to identifying "disproportionate share" providers, i.e., physicians and mental health providers treating large numbers of dually eligible beneficiaries. These providers could be identified by the number of dually eligible beneficiaries seen or by the Medicare dollars associated with them, and measured

in either absolute (total beneficiaries or dollars) or relative (dually eligible beneficiaries relative to other Medicare beneficiaries treated by that provider) terms. We chose to categorize providers by the absolute number of dually eligible beneficiaries they treated, as this measure has strong face validity and was apt to be more readily understood by policymakers. (It also was highly correlated with Medicare revenues from dually eligible beneficiaries.)

Based on frequency distributions of unique beneficiaries per provider, we developed separate categorizations for physicians (excluding psychiatrists) and for mental health providers (psychiatrists, psychologists, and social workers). Physicians were categorized into four groups: (1) fewer than 10 dually eligible beneficiaries seen over the course of the year; (2) 10 to 49; (3) 50 to 99; and (4) 100 or more dually eligible beneficiaries. Mental health providers were categorized into three groups: (1) fewer than 5 beneficiaries treated; (2) 5 to 49; and (3) 50 or more dually eligible beneficiaries.

2.4 Statistical Tests

2.4.1 Tabular Analyses

The beneficiary is the unit of observation for our analyses of access. Each observation was weighted by the number of months in the calendar year during which he/she is eligible for both Part A and Part B, is dually eligible, and not enrolled in a Medicare HMO. T-tests were used to test for simple changes in utilization over time by state and between dually eligible and non-dually eligible beneficiaries within each state.

The physician and/or mental health provider is the unit of observation for our analyses of provider impacts. Depending on the specific comparison, the provider is either self-weighting (i.e., equal to one) or is weighted by his/her Medicare payment amounts. Chi-squares were used to test for significant differences in provider characteristics by size of dually eligible practice, and t-tests for significant changes in physician revenue over time.

2.4.2 Model Specification for Multivariate Access Analyses

Multivariate regression techniques were used to identify the impact of changes in Medicaid cost-sharing payments on access to selected outpatient services for dually eligible beneficiaries, holding factors other than the Medicaid cost-sharing payment change constant. The model analyzes the utilization trend between 1996 and 1998, taking advantage of cross-state differences in the magnitude of the payment change. In addition, we use non-dually eligible Medicare beneficiaries to control for changes in service use over time that are not associated with changes in cost-sharing payments. If access to care for dually eligible beneficiaries is affected by the level of Medicaid cost-sharing payments, we expect that utilization by these beneficiaries will fall (or will increase by a lesser amount) in states with greater reductions in Medicaid cost-sharing payments relative to those with smaller reductions or increases. [14]

[14] In addition to these variables, our model also controls for the proportion of the Medicare deductible and coinsurance paid by a state's Medicaid program in 1996 and a set of beneficiary characteristics. A more detailed description of the model is provided in Appendix A.

We conducted three sets of regression analyses—one for access to outpatient physician services, one for access to preventive services, and one for access to outpatient mental health treatment. The outpatient physician service and preventive service regressions include beneficiaries in all nine study states that have some period of eligibility in 1996 or 1998. The Medicaid cost-sharing variables in these regressions are calculated using all outpatient physician visits. The outpatient mental health treatment regressions only include beneficiaries in the three states that reported procedure codes in their SMRF data so that outpatient mental health services could be identified (Alabama, Colorado, and Michigan). The Medicaid cost-sharing variables in these regressions are based on outpatient mental health visits (including psychiatrists, psychologists, and social workers).

Our analyses include a variety of services as measures of realized access to care. The analyses of access to outpatient physician services examined three dependent variables:

- probability of an outpatient physician visit;
- number of outpatient physician visits (for those with at least one outpatient physician visit); and
- probability of a specialist visit (for those with at least one outpatient physician visit).

Access to four preventive services was also analyzed:

- probability of a flu shot;
- probability of mammography screening (women only);
- probability of a Pap test (women only); and
- probability of a PSA test (men only).

These preventive service measures were analyzed because the probability of receiving preventive services is, in part, a function of having an outpatient physician visit either because the beneficiary receives the service during the visit or because the physician makes a referral for the service. Although beneficiaries do not face any cost sharing for certain preventive services (for example, flu immunizations), they still may be less likely to receive these services if they do not have a physician visit. Therefore, we wanted to explore whether we could observe a derived impact of any changes in access to outpatient physician visits on access to preventive care.

Our analyses of access to outpatient mental health treatment focused on eight dependent variables:

- probability of an outpatient mental health treatment visit;
- number of outpatient mental health visits (for those with at least one outpatient mental health visit);
- probability of a psychiatrist visit (for those with at least one outpatient mental health visit);
- number of psychiatrist visits (for those with at least one psychiatrist visit);
- probability of a psychologist visit (for those with at least one outpatient mental health visit);

- number of psychologist visits (for those with at least one psychologist visit);
- probability of a social worker visit (for those with at least one outpatient mental health visit); and
- number of social worker visits (for those with at least one social worker visit).

3 Changes in Medicaid Cost-Sharing Payments

In this chapter, we present the percent of Medicare deductibles and coinsurance paid by Medicaid on behalf of dually eligible beneficiaries. These percentages were constructed using the algorithms described in Chapter 2. To our knowledge, this is the first time that Medicaid cost-sharing amounts have been calculated, and they allow us to validate the policies reported in state plans.

3.1 Cost-Sharing for Physician Services

Table 3-1 compares each state's Part B physician cost-sharing payments in 1996 and 1998. Medicaid payments are presented as a percentage of Medicare deductibles and coinsurance, i.e., as a percentage of the beneficiary's cost-sharing liability. The nine study states are grouped into the three categories described earlier. We do not test the percent changes in cost-sharing amounts, as these percentages are calculated at the state level (by summing total Medicaid payments for cost-sharing in the state and dividing by the sum of cost-sharing liability across all physician services in the state).

Among our two states that report they pay full Medicare cost-sharing amounts (i.e., 100% of deductibles and coinsurance), only Arkansas actually does so. Indiana pays physicians only about half of the cost-sharing liability. This amount fell slightly in 1998,

Table 3-1

Changes in Cost-Sharing Payments for Physician Services, 1996 to 1998
(percent of Medicare deductibles and coinsurance paid by Medicaid)

	1996	1998	Percent Change
States Paying Full Medicare Amount			
Arkansas	97.4	100.0	2.7%
Indiana	56.4	52.1	-7.6
States Historically Paying Lower Amount			
California*	30.5	15.1	-50.5
Colorado	20.4	20.4	0.0
Kansas	28.1	47.8	70.1
New Jersey	54.4	36.5	-32.9
Wisconsin	24.2	22.4	-7.4
BBA Change States			
Alabama	54.7	28.8	-47.3
Michigan	31.9	7.8	-75.5

* According to its state plan, California paid full Medicare cost-sharing amounts for QMB-only beneficiaries. As will be seen in Table 3-2, however, the data did not support this.

SOURCE: Medicare Part B and SMRF OT claims for nine states, 1996 and 1998.

cost-sharing, if they receive the necessary cross-over claims. One explanation for Indiana's lower than expected payment rate may be that some physicians were not submitting claims for their dually eligible patients. In Section 3.2, we present findings on cost-sharing payments only for those Medicare claims that we were able to match with a Medicaid claim.

Among the five states that historically have paid less than the full Medicare cost-sharing amounts, the percentage paid in 1996 ranged from 20 percent in Colorado to 54 percent in New Jersey. Following BBA, cost-sharing payments in California decreased by 50 percent, while those in New Jersey fell by one-third, although no changes to their state plans had been filed.[15] One likely explanation is that state Medicaid fees (on which the states' cost-sharing contributions are based) either were cut between 1996 and 1998, or were not updated at the same rate as Medicare allowed amounts. Cost-sharing payments increased in Kansas, from one of the lowest rates among our nine states (28%) to one of the highest (48%). This was due to an increase in the state's Medicaid fee schedule, which raised the state's effective contribution to its Medicare cost-sharing. There was no change in Colorado from 1996 to 1998, and a small reduction in Wisconsin.

Our two BBA change states both show large reductions in cost-sharing payments. While both states had been reported as paying full Medicare cost-sharing prior to BBA,

[15] CMS reports that there has been considerable confusion with regard to cost-sharing payments for dually eligible beneficiaries in California, in part because of a successful lawsuit brought by providers prior to BBA. It is likely that following BBA, California simply resumed its prior practice of calculating Medicaid payments for cost-sharing. Nemore (1999) had identified New Jersey as a BBA change state, but according to their state Medicaid plan, New Jersey has always paid less than the full Medicare amount.

neither one actually did so. These percentages are based on cost-sharing amounts that have been both billed by physicians and paid by Medicaid. We suspect that many physicians, especially those who treat small numbers of dually eligible beneficiaries, do not bother to submit claims in the first place. Some of these physicians may not even be participating providers with their state's Medicaid program. Alabama had paid 55 percent on average of its physician cost-sharing liability; by 1998, this had fallen to 29 percent. Michigan had been paying about one-third of beneficiaries' cost-sharing. Following BBA, Michigan for all practical purposes had eliminated such payments entirely, with the percent actually paid falling to less than 8 percent.

For non-QMB duals, states must pay the difference, if the Medicare rate is higher, between the Medicare and Medicaid rates. Since the inception of Medicaid, states have always had the option to pay more for duals than for Medicaid-only beneficiaries. Some actually did before QMBs were enacted. The state plans we reviewed did not indicate any difference in cost-sharing by type of dually eligible beneficiary, except for California which reported that it paid full Medicare cost-sharing for QMB-only beneficiaries and state plan rates for all other dually eligible beneficiaries. Nevertheless, it is still possible that other states also differentiate their state rates by type of dually eligible beneficiary. Table 3-2 compares Medicaid cost-sharing for physicians' services by three groups of dually eligible beneficiaries: (1) SSI recipients (QMB Plus), (2) QMB only beneficiaries; and (3) all other dually eligible beneficiaries. The latter group primarily consists of

Table 3-2

Medicaid Cost-Sharing for Physicians' Services by Type of Dually Eligible Beneficiary (percent of Medicare Part B deductible and coinsurance paid by Medicaid)

	1996			1998		
	SSI	QMB Only	Other	SSI	QMB Only	Other
States Paying Full Medicare Amount						
Arkansas	100.0	88.3	92.0	100.0	99.0	93.4
Indiana	52.8	63.6	49.9	48.7	62.7	43.6
States Historically Paying Lower Amount						
California	26.6	35.3	27.7	13.6	16.9	14.3
Colorado	20.2	22.1	20.4	21.0	22.6	18.7
Kansas	25.1	27.0	34.7	53.6	54.1	37.8
New Jersey*	64.6	59.3	49.2	41.0	43.6	28.3
Wisconsin	24.8	21.6	25.2	22.4	21.5	23.7
BBA Change States						
Alabama	64.0	46.7	49.0	33.9	28.0	23.6
Michigan	35.0	28.7	32.0	9.1	7.9	7.1

* New Jersey is a QMB Plus state. All beneficiaries whose income is 100% of the Federal Poverty Level or lower receive full Medicaid benefits. Thus, non-SSI QMBs have the same Medicaid benefits as SSI recipients.

SOURCE: Medicare Part B and SMRF claims for nine states, 1996 and 1998.

medically needy beneficiaries. If states elect to not pay cost-sharing amounts for those who are not QMBs, then the percentages shown in Table 3-2 should be substantially lower for the "other" category relative to the first two. While there is some variation in the percent paid by type of dually eligible beneficiary, there are no consistent patterns. It does not appear that states elect to treat their non-QMB dually eligible beneficiaries differently than their QMBs. The differences we observe here presumably are a function of differences in services received or providers seen.

It should be noted that, while California's state plan indicates that the state pays full Medicare cost-sharing on behalf of its QMB-only beneficiaries, there is no evidence from Table 3-2 that this is in fact the case. While the percents paid for QMB-only beneficiaries are slightly higher than those for SSI recipients, the differences are small (35% vs 27% in 1996, and 17% vs 14% in 1998). One explanation is that some physicians may not bother to submit cross-over claims to state Medicaid programs, because of the small anticipated return. It is also unlikely that physicians are able to distinguish their QMB-only patients from other dually eligible patients, and change their billing practices accordingly.

3.2 Cost-Sharing for Matching Claims

In order to examine whether the absence of cross-over claims explains lower than expected cost-sharing payment amounts, we merged SMRF claims to the associated Medicare Part B claim in the three states with procedure codes where we were able to do

so. As was seen in Table 2-4, the vast majority of Medicare claims had no matching SMRF claim. In these cases, presumably either the provider did not submit a claim for the cost-sharing payment, or the claim was submitted, but Medicare's payment exceeded the state plan rate, and hence the Medicaid payment was zero. (The latter would apply only to states paying less than full Medicare cost-sharing amounts.) In order to get a better understanding of what state Medicaid programs paid when they did receive a cross-over claim and when the claim generated a payment, we calculated cost-sharing percentages comparable to those shown in Table 3-1*, but only for those Part B physician claims that had a matching SMRF claim.* As shown in Table 3-3, Alabama paid close to 100 percent of the full Medicare cost-sharing amount in 1996, while Colorado and Michigan paid somewhat less (79%). Since Michigan's state plan indicated that it too paid full cost-sharing in 1996, we would have expected a percent paid amount more like that in Alabama (which also paid full cost-sharing prior to BBA). Historically, however, Michigan had been paying at a state plan rate until sued by a cardiology practice in 1996. While the case was pending in district court, Michigan agreed to change its state plan and pay full Medicare cost-sharing for Part B. The plan was amended effective October 1, 1996 with payment of claims at the Medicare rate for services provided beginning December 1, 1995. Thus, the 1996 SMRF Michigan data include cross-over claims that were submitted and paid before the state plan amendment (and not resubmitted later for an adjustment).

Table 3-3

Cost-Sharing Payments for Matched Physician Claims
(percent of Medicare deductibles and coinsurance paid by Medicaid)

	1996	1998	Percent Change
Alabama	91.2	63.8	-30.0
Colorado	79.3	62.2	-21.6
Michigan	79.4	46.1	-42.0

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

Among those claims that matched, there was a marked reduction in the percent of cost-sharing paid in 1998, particularly for the two BBA change states. This understates the cost-sharing change, as there was also a steep drop in the percent of claims that matched (recall Table 2-4).

3.3 Cost-Sharing for Outpatient Mental Health Treatment

Table 3-4 presents cost-sharing payments for outpatient mental health treatment for the three states for which this variable could be constructed. While Alabama and Michigan were reported to be paying full Medicare amounts in 1996, in fact they paid very little, 4.8 and 8.4 percent respectively. To the extent that these two states restricted their definition of cost-sharing to the 12.5 percent defined by CMS (as opposed to the 50 percent we used in calculating these ratios), we are technically under-estimating the percent paid. However, the amounts actually paid still are far less than even the 12.5

Table 3-4

Changes in Cost-Sharing Amounts for Outpatient Mental Health Treatment (percent of Medicare deductibles and coinsurance paid by Medicaid)

	1996	1998	Percent Change
Alabama	4.8	4.2	-12.5
Colorado	50.1	17.5	-65.1
Michigan	8.4	1.1	-86.9

SOURCE: Medicare Part B and SMRF claims for three states, 1996 and 1998.

percent, represent a very small fraction of providers' Medicare fees, and in both states were reduced even further following BBA.

By contrast, Colorado was relatively generous, paying one-half of its cost-sharing liability in 1996. Note that this percentage was considerably higher than what Colorado paid for physician services generally. This amount fell dramatically in 1998 to 17.5 percent, a percentage more consistent with what the state was paying for other services.

Table 3-5 compares cost-sharing for outpatient mental health treatment across the three types of dually eligible beneficiaries. While there is some variation in the percents paid, there is no consistent pattern with regard to QMBs vs. non-QMBs. Observed differences presumably reflect differences in providers and/or services.

Table 3-5

Medicaid Cost-Sharing for Outpatient Mental Health Treatment by Type of Dually Eligible Beneficiary (percent of Medicare Part B deductibles and coinsurance paid by Medicaid)

	1996			1998		
	SSI	QMB Only	Other	SSI	QMB Only	Other
Alabama	8.7	2.4	3.0	5.7	3.4	2.5
Colorado	41.8	54.3	57.7	15.2	18.3	20.0
Michigan	10.4	7.6	6.9	1.6	1.4	0.9

SOURCE: Medicare Part B and SMRF claims for three states, 1996 and 1998.

3.4 Cost-Sharing for Matching Outpatient Mental Health Treatment Claims

As we did for physician services generally, we calculated the percent of cost-sharing paid by Medicaid for outpatient mental health treatment just for those Medicare Part B claims with a matching SMRF claim (Table 3-6). When a claim is submitted and a payment generated, Alabama paid about one-quarter of the Medicare cost-sharing amount in both years, where the percentage is based on a coinsurance amount defined as 50 percent of allowed charges. This technically underestimates the percentage paid by Alabama because only 12 ½ percent of allowed charges, not the full 50 percent, is considered cost-sharing by CMS. Indeed, the amount paid by Alabama is roughly equivalent to the 12 ½ percent deemed cost-sharing by CMS (0.25*0.50=0.125). Colorado, on the other hand, paid close to the full Medicare amount of 50 percent, rather

than the lower 12 ½ percent. This was true in both years, but the number of claims that matched was halved in 1998, thus lowering effective payment (as seen in Table 3-4 above). Finally, while Michigan paid about two-thirds of the Medicare amount in 1996, this fell to one-quarter (or the equivalent of the full 12 ½ percent) following BBA. However, as in Colorado, the number of Medicare bills for outpatient mental health treatment with a matching SMRF paid claim also fell dramatically.

Table 3-6

Cost-Sharing Payments for Matched Claims for Outpatient Mental Health Treatment (percent of Medicare deductibles and coinsurance paid by Medicaid)

	1996	1998	Percent Change
Alabama	28.5	26.2	-8.1
Colorado	92.9	89.6	-3.6
Michigan	65.7	23.0	-65

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

3.5 Cost-Sharing for Other Medicare Services

While Medicaid cost-sharing policies for Part B physician services and outpatient mental health treatment are the principal focus of this study, we also examined cost-sharing for other Medicare services. This analysis includes all Medicare claims, not just those with a matching claim in SMRF data. Table 3-7 compares changes in institutional

Table 3-7

Institutional Cost-Sharing (percent of Medicare deductibles and coinsurance paid by Medicaid)

	Inpatient Hospital			Skilled Nursing Facility			Outpatient Hospital		
	1996	1998	% change	1996	1998	% change	1996	1998	% change
States Paying Full Medicare Amount									
Arkansas	63.8	62.2	-2.5	67.8	61.3	-9.6	51.5	54.1	5.0
Indiana	84.3	71.6	-15.1	59.7	46.4	-22.3	57.6	49.3	-14.4
States Historically Paying Lower Amount									
California*	79.3	76.2	-3.9	81.4	79.2	-2.7	13.4	15.4	14.9
Colorado	38.0	25.3	-33.4	60.0	43.8	-27.0	38.8	23.4	-39.7
Kansas	28.9	57.8	100.0	9.1	6.2	-31.9	6.4	14.5	126.6
New Jersey	66.6	68.8	3.3	11.2	3.9	-65.2	55.7	54.4	-2.3
Wisconsin	88.9	84.9	-4.5	70.0	66.2	-5.4	56.6	55.1	-2.7
BBA Change States									
Alabama**	64.9	64.0	-1.4	69.9	60.7	-13.2	48.9	2.3	-95.3
Michigan	65.7	59.3	-9.7	16.4	8.8	-46.3	5.1	11.2	119.6

* California's state plan indicates that they pay full Medicare rates for QMB-only beneficiaries and for nursing facility services.
** Alabama modified its state plan to pay state rates for inpatient hospital and SNF coinsurance. The plan indicates that the state will continue to pay the full Medicare deductible for Part A.

SOURCE: Medicare and SMRF hospital, SNF, and OPD claims for nine states, 1996 and 1998.

cost-sharing, i.e., cost-sharing paid for inpatient hospital stays, skilled nursing facility (SNF) stays, and outpatient hospital (OPD) services. The states are categorized in the same way that they were earlier. However, it should be noted that only Alabama modified its cost-sharing policies for Part A (hospital and SNF) following BBA. In 1996, Alabama had paid full Medicare cost-sharing amounts for Part A but reduced this to state plan rates for coinsurance amounts only by 1998. Since the state continued to pay hospitals the full Medicare deductible (which accounts for the majority of cost-sharing for acute hospital admissions), we would expect to see little change in the percent paid over time.

With the exception of Colorado and Kansas (in 1996), states generally paid inpatient hospitals 60-80 percent of their cost-sharing amounts. For most states, there was little change in the percent paid from 1996 to 1998, although Colorado reduced its cost-sharing payments by a third. As was seen for physicians' services, Kansas greatly increased its Medicaid cost-sharing amounts over this period.

There is considerable variation in the cost-sharing payments made to SNFs, ranging from 9 percent in Kansas to 81 percent in California in 1996. California's state plan indicates that the state pays full Medicare cost-sharing for nursing facility services. The data shown on Table 3-7 tend to confirm this, although the percentage paid is still well below 100 percent. Six of our nine study states reduced the percent paid to SNFs by double-digit amounts, as shown by the percent change column, including the three states already paying the lowest percentages (Kansas, Michigan, and New Jersey).

Outpatient hospital services are covered under Part B and, as expected, we observe a major reduction in the percent of cost-sharing paid in one of the two BBA change states (Alabama), as well as in Colorado. Alabama appears to have essentially eliminated any cost-sharing payments to OPDs. Cost-sharing payments to OPDs was quite low in Michigan, and actually increased following BBA, although the percent remains low. The reason for this increase is not known, but may reflect a change in Medicaid payment rates to OPDs generally (which in turn would affect the state plan rate for dually eligible beneficiaries).

Consistent with what we observed for Part B physician and Part A hospital services, Kansas greatly increased its cost-sharing payments to OPDs. Nevertheless, the percent paid by Kansas remains one of the lowest among the study states.

Finally, we also calculated cost-sharing payments for Part B durable medical equipment, using the SMRF type of service for DME. These percentages were essentially zero for all states (data not shown). It is unlikely that states truly made no payments for DME cost-sharing amounts. One possible explanation is that DME claims were coded under another SMRF type of category other than the DME category where they belong. Without procedure codes, we have no means of identifying DME elsewhere in the SMRF files.

3.6 Budget Impacts of Cost-Sharing Limitations

States that have opted to pay less than full Medicare cost-sharing amounts realize some savings from doing so. Additional savings may accrue if some providers do not bill the Medicaid program for cost-sharing amounts. Conversely, any statutory change mandating that states pay full Medicare cost-sharing on behalf of their QMBs and/or other dually eligible beneficiaries will have obvious budget implications. We calculated the additional dollar amounts that states would be required to pay, assuming their state policies were changed to require payment of full Medicare cost-sharing and that providers in fact billed for these cost-sharing amounts.

Table 3-8 presents the additional amounts that state Medicaid programs would pay for physician services (in millions of dollars). They vary from almost nothing in Arkansas to well over $100 million in California. It should be noted that inter-state differences in these dollar amounts reflect not only differences in cost-sharing payment policies, but also in the size of their dually eligible populations and the number of Medicare services used by these populations. Similarly, changes in these amounts from 1996 to 1998 may be due not only to changes in cost-sharing policies, but also to changes in both Medicare and Medicaid fees, the size of states' dually eligible populations, and in the services they receive.

Table 3-9 presents similar data for inpatient hospitals, SNFs, and hospital outpatient departments, and Table 3-10 for outpatient mental health treatment. State liability for cost-sharing for outpatient mental health treatment was calculated at both the

Table 3-8

Budget Impacts of Paying Full Medicare Cost-Sharing Amounts for Physician Services (additional outlays in $1,000,000)

	1996	1998
States Paying Full Medicare Amount		
Arkansas	$0.43	$0.00
Indiana	9.14	11.39
States Historically Paying Lower Amount		
California	134.17	176.75
Colorado	8.40	7.21
Kansas	6.48	5.16
New Jersey	19.74	30.46
Wisconsin	12.73	12.60
BBA Change States		
Alabama	13.37	22.87
Michigan	25.68	32.91

SOURCE: Medicare and SMRF claims for nine states, 1996 and 1998.

Table 3-9

Budget Impacts of Paying Full Medicare Cost-Sharing Amounts for Institutional Services
(additional outlays in $1,000,000)

	Inpatient Hospital		Skilled Nursing Facility		Outpatient Hospital	
	1996	1998	1996	1998	1996	1998
States Paying Full Medicare Amount						
Arkansas	$7.65	$8.38	$3.85	$4.55	$11.06	$12.35
Indiana	3.35	6.76	8.20	11.78	14.62	20.94
States Historically Paying Lower Amount						
California*	23.59	29.87	10.96	12.22	203.60	223.16
Colorado	5.94	6.28	3.01	3.38	12.26	11.88
Kansas	7.16	4.86	4.69	5.06	13.69	14.70
New Jersey	14.12	12.77	12.91	18.73	17.95	22.84
Wisconsin	1.77	2.31	2.58	2.45	9.57	10.54
BBA Change States						
Alabama**	11.25	12.35	6.25	8.91	21.04	48.52
Michigan	46.04	45.01	20.92	18.94	46.04	45.01

* California's state plan indicates that they pay full Medicare rates for QMB-only beneficiaries and for nursing facility services.

** Alabama modified its state plan to pay state rates for inpatient hospital and SNF coinsurance. The plan indicates that the state will continue to pay the full Medicare deductible for Part A.

SOURCE: Medicare and SMRF claims for nine states, 1996 and 1998.

Table 3-10

Budget Impacts of Paying Full Medicare Cost-Sharing Amounts for Outpatient Mental Health Treatment (additional outlays in $1,000,000)

	1996		1998	
	50% Rate	12½ % Rate	50% Rate	12½ % Rate
Alabama	$0.74	$0.31	$0.98	$0.26
Colorado	1.17	0.23	2.00	0.14
Michigan	3.11	0.25	2.69	0.26

SOURCE: Medicare and SMRF claims for three states, 1996 and 1998.

50 percent rate and at 12½ percent of the fee schedule amount, which states are currently legally required to consider as cost-sharing. As shown in Table 3-10, absent a change in this policy, the actual budget impact of requiring full Medicare cost-sharing for outpatient mental health treatment would be substantially lower than the dollar amounts based on the 50 percent rate.

Some of the dollar amounts shown in Tables 3-8 through 3-10 are relatively large and could represent a significant impact on state Medicaid budgets. States would only be responsible for one-half of these amounts at most. The balance would be paid by the federal government, with the exact amount depending on the individual state's federal match rate.

4 Utilization of Care by Dually Eligible Beneficiaries

This chapter presents descriptive and multivariate analyses of changes in utilization of physician outpatient visits, preventive services, and outpatient mental health treatment. We examine both the probability of receiving a given service, and the number of services conditional on any use. All measures are based on Medicare Part B claims data and expressed on a per beneficiary per year basis. These utilization measures are well-accepted indicators of access to health care (Institute of Medicine, 1993). However, we are not able to evaluate the extent to which access to needed services is jeopardized or the impact of utilization changes on health outcomes. Nonetheless, the utilization measures reported here are believed to impact outcomes.

4.1 Utilization of Outpatient Visits and Preventive Services

4.1.1 Descriptive Results

Table 4-1 compares total outpatient physician visits per beneficiary by state from 1996 to 1998. Outpatient visits include visits to physicians' offices, clinics, and hospital OPDs. Total outpatient visits are then decomposed into the percent of beneficiaries with any visit during the year, and the number of visits conditional on having at least one visit. Outpatient visit rates increased for both dually and non-dually eligible beneficiaries in seven of our nine states from 1996 to 1998. These increases reflected an increase in both

Table 4-1

Utilization of Outpatient Physician Services

	Number of Visits Per Beneficiary			Percent of Beneficiaries with at Least One Visit			Number of Visits (users only)		
	1996	1998	% change	1996	1998	% change	1996	1998	% change
States Paying Full Medicare Amounts									
Arkansas									
Dually Eligible Beneficiaries	4.50	4.79 **	6.4 ##	71.9	74.2 **	3.2	6.26	6.46 **	3.2 ##
Non-dually Eligible Beneficiaries	4.72	5.16 **	9.3	79.7	82.0 **	2.9	5.91	6.30 **	6.6
Indiana									
Dually Eligible Beneficiaries	4.38	4.68	6.8 ##	68.0	69.2 **	1.8	6.44	6.77 **	5.1 #
Non-dually Eligible Beneficiaries	5.14	5.57 **	8.4	83.8	85.3 **	1.8	6.14	6.54 **	6.5
States Historically Paying Lower Amounts									
California									
Dually Eligible Beneficiaries	6.92	7.24 **	4.6 ##	76.1	77.1 **	1.3 ##	9.09	9.39 **	3.3 #
Non-dually Eligible Beneficiaries	6.47	6.73 **	4.0	79.6	80.1 **	0.6	8.13	8.39 **	3.2
Colorado									
Dually Eligible Beneficiaries	4.38	4.26 *	-2.7 ##	67.5	66.6	-1.3 ##	6.49	6.42	-1.1 ##
Non-dually Eligible Beneficiaries	4.76	4.98 **	4.6	77.6	78.5 **	1.2	6.12	6.33 **	3.4
Kansas									
Dually Eligible Beneficiaries	3.60	3.85 **	6.9	64.2	65.7 **	2.3	5.61	5.87 **	4.6
Non-dually Eligible Beneficiaries	4.57	4.85 **	6.1	78.7	80.1 **	1.8	5.81	6.05 **	4.1
New Jersey									
Dually Eligible Beneficiaries	4.49	5.09 **	13.4 ##	63.2	67.0 **	6.0 ##	7.11	7.61 **	7.0 ##
Non-dually Eligible Beneficiaries	6.03	6.71 **	11.3	82.2	83.6 **	1.7	7.34	8.03 **	9.4
Wisconsin									
Dually Eligible Beneficiaries	4.39	4.55 **	3.6 ##	73.6	74.4 **	1.1	5.97	6.13 **	2.7 ##
Non-dually Eligible Beneficiaries	4.55	4.82 **	5.9	82.4	83.2 **	1.0	5.52	5.79 **	4.9

Table 4-1 (continued)

Utilization of Outpatient Physician Services

	Number of Visits Per Beneficiary			Percent of Beneficiaries with at Least One Visit			Number of Visits (users only)		
	1996	1998	% change	1996	1998	% change	1996	1998	% change
BBA Change States									
Alabama									
Dually Eligible Beneficiaries	4.93	5.17 **	4.9 ##	73.9	74.6 **	0.9 ##	6.66	6.93 **	4.1
Non-dually Eligible Beneficiaries	5.51	5.88 **	6.7	83.2	84.7 **	1.4	6.62	6.94 **	4.8
Michigan									
Dually Eligible Beneficiaries	5.20	5.10 **	-1.9 ##	74.2	73.2 **	-1.3 ##	7.01	6.97	-0.6 ##
Non-dually Eligible Beneficiaries	5.56	5.83 **	4.9	83.8	84.4 **	0.7	6.64	6.91 **	4.1

##Percent change significantly different from non-duals at 0.01 level.
#Percent change significantly different from non-duals at 0.05 level.
** Significantly different from 1996 at the .01 level.
*Significantly different from 1996 at the .05 level.

SOURCE: Medicare Part B claims for nine states, 1996 and 1998.

the percent utilizing services and the intensity of their use. By contrast, while visit rates also increased for non-dually eligible beneficiaries in the remaining two states (Colorado and Michigan), they actually declined by a small (2-3%), but statistically significant, amount for dually eligible beneficiaries.

While we test the percent changes by state separately for dually eligible and non-dually eligible beneficiaries in this (and all other descriptive tables), the key test for study purposes is the difference in these percent changes within each state. Relative to non-dually eligible beneficiaries, growth in visit rates was significantly lower for dually eligible beneficiaries in six of the study states, including the two BBA change states. Rates of growth were significantly higher for dually eligible beneficiaries in two of the remaining states, on the other hand, with no difference between dually and non-dually eligible beneficiaries in the ninth state.

While significant, these differences in differences are generally small, e.g., one to two percentage points. The exceptions are Colorado and Michigan where the absolute magnitude of the differences are about 7 percentage points.

From a simple cross-tabular comparison, there would not appear to be a clear relationship between changes in cost-sharing and utilization of outpatient visits. Four states were shown to have had substantial drops in cost-sharing payments for physician services (Alabama, California, New Jersey, and Michigan), yet in only two of these states (Alabama and Michigan) did visit rates increase less for dually eligible beneficiaries than for non-dually eligible. Rates of increase were actually higher for dually eligible beneficiaries in California and New Jersey. Although the changes in utilization over time

did not follow a clear pattern, nevertheless, it should also be noted that levels of use (i.e., the visit rates) for dually eligible beneficiaries were significantly lower than those of non-dually eligible beneficiaries in all nine study states (tests not shown).

Table 4-2 examines two trends in outpatient visits to specialists: (1) the percent of beneficiaries with a specialist visit (for those with at least one outpatient visit); and (2) the number of specialist visits (for those beneficiaries with at least one specialist visit). Specialists are defined here as any physician other than general and family practitioners and internists. The odds of making a visit to a specialist increased significantly in six of the nine states for both dually eligible and non-dually eligible beneficiaries. Those beneficiaries with access to specialists generally increased the number of visits they made to them. Colorado is quite distinct from the other states shown in Table 4-2. General access by dually eligible beneficiaries actually falls slightly (while increasing slightly among those non-dually eligible). More striking is the 4.7 percent reduction in number of specialist visits by dually eligible beneficiaries compared with the 2.2 percent increase in such visits by those not dually eligible.

Rates of increase in the percent with at least one specialist visit grew significantly slower for dually eligible beneficiaries in three of the nine states, but grew relatively faster in a fourth state, with no significant difference in rates of change for the remaining five states. The results are even more mixed for changes in the number of visits. Rates of increase were significantly lower (or even negative) for dually eligible beneficiaries in

Table 4-2

Utilization of Outpatient Specialist Services

	Percent with Specialist Visit (for those with at least one office visit)			Number of Specialist Visits (for those with at least one specialist visit)		
	1996	1998	% Change	1996	1998	% Change
States Paying Full Medicare Amount						
Arkansas						
Dually Eligible Beneficiaries	65.6	65.0 *	-0.9	3.38	3.51 **	3.8
Non-dually Eligible Beneficiaries	77.3	76.8 **	-0.6	3.87	3.97 **	2.6
Indiana						
Dually Eligible Beneficiaries	70.6	71.0	0.6 ##	3.57	3.85 **	7.8 #
Non-dually Eligible Beneficiaries	73.8	75.1 **	2.3	3.75	3.94 **	5.1
States Historically Paying Lower Amount						
California						
Dually Eligible Beneficiaries	78.1	79.2 **	1.4	5.88	5.84 *	-0.7 ##
Non-dually Eligible Beneficiaries	84.8	86.1 **	1.5	6.12	6.32 **	3.3
Colorado						
Dually Eligible Beneficiaries	67.6	67.1 **	-0.7 ##	3.84	3.66 **	-4.7 ##
Non-dually Eligible Beneficiaries	76.7	77.2 **	0.7	4.14	4.23 **	2.2
Kansas						
Dually Eligible Beneficiaries	67.3	69.1 **	2.7	3.30	3.32	0.6
Non-dually Eligible Beneficiaries	80.1	81.5 **	0.5	3.82	3.85	0.8
New Jersey						
Dually Eligible Beneficiaries	77.7	78.8 **	1.4 ##	4.70	4.77 **	1.5 ##
Non-dually Eligible Beneficiaries	84.3	86.3 **	2.4	5.63	5.98 **	6.2

Table 4-2 (continued)

Utilization of Outpatient Specialist Services

	Percent with Specialist Visit (for those with at least one office visit)			Number of Specialist Visits (for those with at least one specialist visit)		
	1996	1998	% Change	1996	1998	% Change
Wisconsin						
Dually Eligible Beneficiaries	67.7	69.5 **	2.7	3.43	3.47	1.2 ##
Non-dually Eligible Beneficiaries	74.0	76.0 **	2.7	3.52	3.63 **	3.1
BBA Change States						
Alabama						
Dually Eligible Beneficiaries	64.8	67.4 **	4.0 ##	3.62	3.79 **	4.7 #
Non-dually Eligible Beneficiaries	76.7	78.2 **	2.0	4.23	4.35 **	2.8
Michigan						
Dually Eligible Beneficiaries	75.2	79.0 **	5.1	4.37	4.64 **	6.2 #
Non-dually Eligible Beneficiaries	79.4	83.0 **	4.5	4.57	4.91 **	7.4

##Percent change significantly different from non-duals at 0.01 level.
#Percent change significantly different from non-duals at 0.05 level.
** Significantly different from 1996 at .01 level.
*Significantly different from 1996 at the .05 level.

SOURCE: Medicare Part B claims for nine states, 1996 and 1998.

five states, but significantly higher in two others. There were no apparent patterns between these changes in utilization of specialists and changes in cost-sharing payments.

We expect that utilization of outpatient visits should increase utilization of preventive services, either because the beneficiary receives the service itself during the visit or because the physician makes a referral for the service. Table 4-3 compares utilization for four preventive services: flu shots, mammography (women only), Pap tests, (women only), and PSA tests (men only). The percent of beneficiaries receiving a flu shot increased from 1996 to 1998 in some states, and decreased in others. Rates of increase were significantly higher for dually eligible beneficiaries in five states, and the rate of decrease significantly smaller in a sixth state. There were no differences in the remaining three states. While mammography rates increased markedly in all nine states, the rates of increase were significantly higher for non-dually eligible women than for those who were dually eligible.

Pap tests rates are somewhat difficult to interpret in a Medicare population, as there are conflicting recommendations whether women who have had a hysterectomy should continue to receive these tests. (The American Cancer Society recommends that women should continue to receive Pap tests post-hysterectomy, for example, while the U.S. Preventive Services Task Force does not recommend continued testing unless there is a history of cervical cancer.) Use of Pap tests declined from 1996 to 1998 in many of the study states, generally for both dually eligible and non-dually eligible women. Dually eligible women had significantly higher rates of increase in Pap test use (lower rates of

Table 4-3

Utilization of Preventive Services (per beneficiary)

	Flu Shot			Mammography (women only)		
	1996	1998	% Change	1996	1998	% Change
States Paying Full Medicare Amounts						
Arkansas						
Dually Eligible Beneficiaries	22.4	25.0 **	11.6 ##	9.5	13.0 **	36.8 ##
Non-dually Eligible Beneficiaries	39.5	40.8 **	3.3	22.0	30.6 **	39.1
Indiana						
Dually Eligible Beneficiaries	16.7	16.7	0.0	10.6	14.8 **	39.6 ##
Non-dually Eligible Beneficiaries	37.2	37.4 **	0.5	21.0	31.3 **	49.0
States Historically Paying Lower Amounts						
California						
Dually Eligible Beneficiaries	17.4	18.8 **	8.0 ##	16.1	20.3 **	26.1 ##
Non-dually Eligible Beneficiaries	26.5	26.8 **	2.3	27.5	35.4 **	28.7
Colorado						
Dually Eligible Beneficiaries	18.5	18.9	2.2 ##	12.3	15.3 **	24.4 ##
Non-dually Eligible Beneficiaries	40.2	38.4 **	-4.5	24.2	33.2 **	37.2
Kansas						
Dually Eligible Beneficiaries	19.2	18.9	-1.6	10.7	14.6 **	36.4 ##
Non-dually Eligible Beneficiaries	38.5	38.1 **	-1.0	23.3	35.8 **	53.6
New Jersey						
Dually Eligible Beneficiaries	12.3	13.7 **	11.4 ##	12.5	15.5 **	24.0 ##
Non-dually Eligible Beneficiaries	35.3	35.9 **	1.7	23.2	29.2 **	25.9
Wisconsin						
Dually Eligible Beneficiaries	21.7	22.0	1.4	14.0	19.2 **	37.1 ##
Non-dually Eligible Beneficiaries	43.5	43.4	-0.2	24.3	35.4 **	45.7
BBA Change States						
Alabama						
Dually Eligible Beneficiaries	17.4	17.2	-1.1 ##	14.7	17.0 **	15.6 ##
Non-dually Eligible Beneficiaries	33.5	32.8 **	-2.1	29.3	34.4 **	17.4
Michigan						
Dually Eligible Beneficiaries	17.7	18.1 *	2.3 #	18.5	21.1 **	14.1 ##
Non-dually Eligible Beneficiaries	35.8	35.8	0.0	31.7	38.9 **	22.7
	Pap Test (females only)			**PSA Test (males only)**		
	1996	1998	% Change	1996	1998	% Change
States Paying Full Medicare Amounts						
Arkansas						
Dually Eligible Beneficiaries	5.9	6.6 *	11.9 #	4.8	4.4 *	-8.3 ##
Non-dually Eligible Beneficiaries	13.4	13.6	3.0	15.2	14.0 **	-7.9
Indiana						
Dually Eligible Beneficiaries	4.2	4.0	-4.8 ##	4.2	2.7 **	-35.7 ##
Non-dually Eligible Beneficiaries	8.1	6.8 **	-16.0	17.2	10.9 **	-36.6
States Historically Paying Lower Amounts						
California						
Dually Eligible Beneficiaries	10.0	8.8 **	-12.0 ##	15.0	15.0	0.0 ##
Non-dually Eligible Beneficiaries	16.7	14.1 **	-15.6	29.1	25.9 **	-11.0

Table 4-3 (continued)

Utilization of Preventive Services (per beneficiary)

	Pap Test (females only)			PSA Test (males only)		
	1996	1998	% Change	1996	1998	% Change
Colorado						
Dually Eligible Beneficiaries	6.2	4.1 **	-33.9 ##	4.4	4.6	4.5 ##
Non-dually Eligible Beneficiaries	10.4	8.2 **	-21.2	15.1	12.1 **	-19.9
Kansas						
Dually Eligible Beneficiaries	6.9	5.3 **	-23.2 ##	5.3	4.4 **	-17.0
Non-dually Eligible Beneficiaries	12.3	9.8 **	-20.3	19.3	17.5 **	-9.3
New Jersey						
Dually Eligible Beneficiaries	4.7	5.5 **	17.0	10.4	11.2 **	7.7 ##
Non-dually Eligible Beneficiaries	12.1	12.7 **	5.0	32.9	32.8	-0.3
Wisconsin						
Dually Eligible Beneficiaries	5.3	5.3	0.0 #	3.4	3.8 *	11.8 ##
Non-dually Eligible Beneficiaries	7.4	6.8 **	-8.2	16.4	18.9 **	15.2
BBA Change States						
Alabama						
Dually Eligible Beneficiaries	9.5	9.2 *	-3.2 ##	8.1	6.2 **	-23.5 ##
Non-dually Eligible Beneficiaries	15.7	14.7 **	-6.4	19.3	16.3 **	-15.5
Michigan						
Dually Eligible Beneficiaries	5.8	4.3 **	-25.9 ##	5.6	5.7	1.8 #
Non-dually Eligible Beneficiaries	9.0	6.8 **	-24.4	17.6	18.2 **	3.4

##Percent change significantly different from non-duals at 0.01 level.
#Percent change significantly different from non-duals at 0.05 level.
** Significantly different from 1996 at the .01 level.
*Significantly different from 1996 at the .05 level.

SOURCE: Medicare Part B claims for nine states, 1996 and 1998.

decrease) relative to non-dually eligible women in five states. The opposite was true in three other states, with no significant difference in rates of change in one state.

PSA tests were not a covered preventive service under Medicare during this time period, but presumably were paid as diagnostic tests whenever ordered by a physician. Utilization is relatively low but varies considerably across states. Dually eligible men had significantly higher rates of increase (slower rates of decrease) in four states, relative to non-dually eligible men. The opposite was true in four states, with no difference in rate of change in one state.

Based on this cross-tabular analysis, there were no apparent relationships between changes in cost-sharing payments and changes in utilization of preventive services. Furthermore, except for mammography, where rates of increase in use were lower for dually eligible women in every state, there were no consistent patterns in these 1996-1998 changes for dually eligible vs. non-dually beneficiaries. However, it should be noted that absolute levels of use were significantly lower for dually eligible beneficiaries than for non-dually eligible beneficiaries living in the same state (tests not shown).

4.1.2 Multivariate Results

This section presents the results of our multivariate analyses of the impact of Medicaid cost sharing payment changes on utilization of outpatient physician and preventive services. The multivariate model was described in Section 2.4.2. This model

controls for a variety of factors expected to influence service use, including utilization time trends for non-dual eligibles and beneficiary characteristics.

Outpatient Physician Visit Results

Multivariate analyses showed that increasing Medicaid cost-sharing payments had a significant, but modest, impact on utilization of outpatient physician services generally. There was no significant effect on the number of outpatient physician visits or on utilization of outpatient specialist visits.[16] The changes in Medicaid cost-sharing payments over this time period in our nine study states ranged from -75.5 percent (Michigan) to 70.1 percent (Kansas) (see Table 3-1). Table 4-4 shows the estimated effect of the actual change in each state on the probability of an outpatient physician visit, the number of outpatient physician visits, and the probability of a specialist visit.

In four of the nine states, the estimated change in the probability of an outpatient visit as a result of the Medicaid payment changes was less than 1 percent. The largest impacts are found in states with very substantial payment changes. Based on the payment reduction that occurred in Michigan between 1996 and 1998, we estimated that the probability of an outpatient visit fell by 4.9 percent, while a payment increase of the magnitude found in Kansas was estimated to increase the probability by 4.8 percent. In California, New Jersey, and Alabama, which also had sizable reductions in cost-sharing

[16] Complete results of the regression analyses for outpatient physician visits, preventive services, and outpatient mental health treatment are presented in Appendix A.

Table 4-4

Impact of Medicaid Cost Sharing Payment Changes on Utilization of Outpatient Physician Services

	Change in Probability of Outpatient Physician Visit**	Change in Number of Visits (users only)	Change in Probability of Specialist Visit (users only)
States Paying Full Medicare Amount			
Arkansas	0.2%	0.0%	-0.0%
Indiana	-0.5	0.0	-0.1
States Historically Paying Lower Amount			
California	-3.3	-0.1	-0.8
Colorado	0.0	0.0	0.0
Kansas	4.8	0.2	1.1
New Jersey	-2.2	-0.1	-0.5
Wisconsin	-0.5	0.0	-0.1
BBA Change States			
Alabama	-3.1	-0.1	-0.8
Michigan	-4.9	-0.2	-1.2

**Results of multivariate analyses show that a change in Medicaid cost sharing payments had a statistically significant impact on the probability that a dual eligible would have an outpatient physician visit ($p<.01$).

NOTE: Percent change is calculated using actual cost-sharing payment change between 1996 and 1998 in each state and estimated coefficients from DUAL*CHANGE IN PROPORTION PAID*YEAR 1998 from regressions.

SOURCE: Medicare Part B claims for nine states, 1996-1998.

payments, the estimated reduction in the probability of an outpatient visit was less than 4 percent. Changes in cost-sharing payments had an insignificant impact on the number of outpatient visits for those beneficiaries with at least one visit - 1 percent or less in all states. There was also no significant impact on the probability of having a specialist visit.

Preventive Service Results

In general, changes in Medicaid cost-sharing payments did not have a significant impact on utilization of preventive services. While there was a significant impact on the probability of receiving a mammogram, the effect is in the opposite direction expected—an increase in cost-sharing payments *reduces* the likelihood that a woman will have a mammogram.

Table 4-5 shows the predicted change in the probability of receiving preventive services based on the actual change in Medicaid cost-sharing payments for outpatient visits in each state. A payment increase equivalent to that implemented in Kansas was estimated to reduce the likelihood of having mammography by 5 percent, while a payment reduction of the magnitude that occurred in Michigan was estimated to increase the likelihood by 6 percent. An additional three states are estimated to have a 2-4 percent increase in the proportion of women receiving a mammogram as a result of Medicaid cost-sharing payment reductions. Four states are estimated to have utilization changes of less than 1 percent.

Table 4-5

Impact of Medicaid Cost Sharing Payment Changes on Utilization of Preventive Services

	Change in Probability of Flu Shot	Change in Probability of Mammography (women only)**	Change in Probability of Pap Test (women only)	Change in Probability of PSA Test (men only)
States Paying Full Medicare Amount				
Arkansas	0.1%	-0.2%	0.1%	-0.1%
Indiana	-0.2	0.6	-0.2	0.3
States Historically Paying Lower Amount				
California	-1.0	3.9	-1.1	2.0
Colorado	0.0	0.0	0.0	0.0
Kansas	1.4	-5.2	1.5	-2.7
New Jersey	-0.7	2.5	-0.7	1.3
Wisconsin	-0.1	0.6	-0.2	0.3
BBA Change States				
Alabama	-1.0	3.7	-1.0	1.9
Michigan	-1.5	5.9	-1.6	3.0

**Results of multivariate analyses show that a change in Medicaid cost sharing payments had a statistically significant impact on the probability that a female dual eligible would have a mammogram ($p<.01$).

NOTE: Percent change is calculated using actual cost-sharing payment change between 1996 and 1998 in each state and estimated coefficients from DUAL*CHANGE IN PROPORTION PAID*YEAR 1998 from regressions.

SOURCE: Medicare Part B claims for nine states, 1996-1998.

4.2 Utilization of Outpatient Mental Health Treatment

As described earlier, we were only able to calculate cost-sharing payments specific to outpatient mental health treatment for the three states with procedure codes: Alabama, Colorado, and Michigan. However, it is reasonable to assume that states that reduced their cost-sharing payments for physician services generally also reduced them for mental health services. For this reason, we present descriptive data for all nine states. The regression analysis is limited to the three for which we have an accurate measure of cost-sharing payment.

4.2.1 Descriptive Results

Table 4-6 shows some fairly dramatic changes in utilization of outpatient mental health treatment. Visits per beneficiary increased significantly in some states and fell significantly in others, generally due both to changes in the percent of beneficiaries receiving any outpatient mental health visit and in the number of visits for those with at least one. Dually eligible beneficiaries experienced greater rates of increase (or slower rates of decrease) relative to non-dually eligible beneficiaries in three states (Alabama, Arkansas, and Indiana), but the opposite was the case in four other states (California, Colorado, Michigan, and Wisconsin). (There were no significant differences in percent changes in the two remaining states.)

Changes in utilization of outpatient mental health treatment can be decomposed into changes in use of specific mental health providers. Table 4-7 shows visits per

Table 4-6

Utilization of Outpatient Mental Health Treatment

	Number of Outpatient Mental Health Visits Per Beneficiary			Percent with at least One Visit			Number of Visits (users only)		
	1996	1998	% Change	1996	1998	%Change	1996	1998	% Change
States Paying Full Medicare Amounts									
Arkansas									
Dually Eligible Beneficiaries	0.34	0.51 **	50.0 ##	4.0	4.1	2.5 #	8.40	12.34 **	46.9 ##
Non-dually Eligible Beneficiaries	0.10	0.11 *	13.9	1.6	1.5 **	-6.9	6.28	7.64 **	21.7
Indiana									
Dually Eligible Beneficiaries	1.45	1.63 **	12.4 ##	11.5	13.0 **	13.0 ##	12.56	12.51	-0.4
Non-dually Eligible Beneficiaries	0.16	0.15 *	-6.3	1.9	1.9	0.0	8.62	7.99 *	-7.3
States Historically Paying Lower Amounts									
California									
Dually Eligible Beneficiaries	1.47	0.99 **	-32.7 ##	10.2	8.9 **	-12.7 ##	14.40	11.10 **	-22.9 ##
Non-dually Eligible Beneficiaries	0.31	0.26 **	-15.9	2.7	2.6 **	-3.7	11.41	9.84 **	-13.7
Colorado									
Dually Eligible Beneficiaries	1.96	2.34 **	19.4 ##	12.3	12.2	-0.8	15.98	19.02 **	19.0
Non-dually Eligible Beneficiaries	0.25	0.32 *	28.0	2.4	2.6 **	8.3	10.29	12.45	20.9
Kansas									
Dually Eligible Beneficiaries	1.58	1.53	-3.2	13.6	12.3 **	-9.6 ##	11.67	12.47 *	6.9 ##
Non-dually Eligible Beneficiaries	0.22	0.18 **	-15.7	2.3	2.0 **	-13.0	9.54	9.10	-0.5
New Jersey									
Dually Eligible Beneficiaries	1.10	1.12	1.8	9.3	9.5	2.2	11.84	11.76	-0.7
Non-dually Eligible Beneficiaries	0.28	0.29 *	3.6	2.6	2.9 **	11.5	10.67	10.08 **	-5.5
Wisconsin									
Dually Eligible Beneficiaries	0.91	0.72 **	-20.9 ##	8.5	8.3	-2.4	10.78	8.69 **	-19.4
Non-dually Eligible Beneficiaries	0.15	0.12 **	-19.0	1.9	1.9 *	-2.1	7.55	6.28 **	-16.8

Table 4-6 (continued)

Utilization of Outpatient Mental Health Treatment

	Number of Outpatient Mental Health Visits Per Beneficiary			Percent with at least One Visit			Number of Visits (users only)		
	1996	1998	% Change	1996	1998	% Change	1996	1998	% Change
BBA Change States									
Alabama									
Dually Eligible Beneficiaries	0.31	0.35 **	12.9 ##	4.6	5.3 **	15.2 ##	6.73	6.58	-2.2
Non-dually Eligible Beneficiaries	0.13	0.12	-4.2	2.0	2.0	0.0	6.53	6.09 *	-6.7
Michigan									
Dually Eligible Beneficiaries	0.97	0.77 **	-20.6 ##	9.4	7.9 **	-16.0 ##	10.31	9.78 *	-5.1
Non-dually Eligible Beneficiaries	0.24	0.22 **	-8.3	2.7	2.6 **	-3.7	8.96	8.58 **	-4.2

##Percent change significantly different from non-duals at 0.01 level.
#Percent change significantly different from non-duals at 0.05 level.
** Significantly different from 1996 at the .01 level.
*Significantly different from 1996 at the .05 level.

SOURCE: Medicare Part B claims for nine states, 1996 and 1998.

Table 4-7

Utilization of Outpatient Mental Health Treatment by Provider Type (for those beneficiaries with at least one mental health visit)

	Psychiatrist Visits			Psychologist Visits			Social Worker Visits		
	1996	1998	% Change	1996	1998	% Change	1996	1998	% Change
States Paying Full Medicare Rate									
Arkansas									
Dually Eligible Beneficiaries	2.96	2.22 **	-25.0	1.51	1.73	14.6	2.96	2.73	-7.8 ##
Non-dually Eligible Beneficiaries	2.94	2.56 **	-12.9	1.64	1.96 **	19.5	1.53	3.02 **	97.4
Indiana									
Dually Eligible Beneficiaries	5.08	3.70 **	-27.2	1.72	2.29 **	33.1 ##	3.28	3.29	0.3
Non-dually Eligible Beneficiaries	5.53	4.43 **	-19.9	1.09	1.36 **	24.7	1.85	2.09 **	13.0
States Historically Paying Lower Rate									
California									
Dually Eligible Beneficiaries	4.57	4.49	-1.8 #	6.59	4.38 **	-33.5 ##	1.34	0.50 **	-62.7 ##
Non-dually Eligible Beneficiaries	4.96	4.70 **	-5.2	4.61	3.69 **	-20.0	1.32	1.07 **	-18.9
Colorado									
Dually Eligible Beneficiaries	4.75	5.17	8.8	9.03	8.92	-1.2	1.37	1.47	7.3
Non-dually Eligible Beneficiaries	5.20	5.49 **	5.6	3.58	5.37 **	50.0	1.34	1.48 **	10.4
Kansas									
Dually Eligible Beneficiaries	3.85	2.16 **	-43.9 ##	3.12	3.70 **	18.6 #	3.22	4.85 **	50.6 ##
Non-dually Eligible Beneficiaries	3.94	2.82 **	-28.4	2.34	2.38	1.7	2.85	3.52 **	23.5
New Jersey									
Dually Eligible Beneficiaries	4.11	3.53 **	-14.1	5.47	4.82 **	-11.9 ##	1.13	1.97 **	74.3 ##
Non-dually Eligible Beneficiaries	5.83	5.02 **	-13.9	2.61	2.71 **	3.8	1.88	2.18 **	16.0
Wisconsin									
Dually Eligible Beneficiaries	3.32	2.71 **	-18.4	1.91	2.15	12.6 ##	3.19	3.02	-5.3
Non-dually Eligible Beneficiaries	3.38	2.68 **	-20.7	2.26	1.90 *	-15.9	1.82	1.63 *	-10.4

Table 4-7 (continued)

Utilization of Outpatient Mental Health Treatment by Provider Type (for those beneficiaries with at least one mental health visit)

	Psychiatrist Visits			Psychologist Visits			Social Worker Visits		
	1996	1998	% Change	1996	1998	% Change	1996	1998	% Change
BBA Change States									
Alabama									
Dually Eligible Beneficiaries	2.51	2.67 *	6.4 #	1.08	0.95	-12.0 ##	2.32	1.58 **	-31.9 ##
Non-dually Eligible Beneficiaries	3.09	3.02 **	-2.3	2.35	1.58	-29.8	0.94	1.47 **	56.4
Michigan									
Dually Eligible Beneficiaries	5.45	4.05 **	-25.7 ##	0.69	1.06 **	53.6	4.85	2.91 **	-40.0 ##
Non-dually Eligible Beneficiaries	4.72	4.28 **	-9.3	1.45	1.80 **	24.1	2.38	2.21 **	-7.1

##Percent change significantly different from non-duals at 0.01 level.
#Percent change significantly different from non-duals at 0.05 level.
** Significantly different from 1996 at the .01 level.
*Significantly different from 1996 at the .05 level.

SOURCE: Medicare Part B claims for nine states, 1996 and 1998.

beneficiary (for those with at least one outpatient mental health visit) by type of mental health provider: psychiatrist, psychologist, and social worker.[17] There is a dramatic reduction in visits to psychiatrists in six of the nine states. In some cases, these reductions were more than offset by an increase in visits to psychologists and/or social workers. In other cases, there were reductions in visits to these providers as well. The reduction in psychiatrist visits was significantly greater for dually eligible beneficiaries, relative to those not dually eligible, in Kansas and Michigan, but the opposite was true in Alabama (where visits actually increased) and in California. Visits to psychologists increased relatively more (or declined relatively less) for dually eligible beneficiaries in four states: Alabama, Indiana, Kansas, and Wisconsin. By contrast, the reduction in psychologist visits in California was greater for dually eligible beneficiaries than for others. In New Jersey, psychologist visits declined for dually eligible beneficiaries, but increased for those who were not dually eligible. The difference in percent changes in social worker visits also varied across states, with dually eligible beneficiaries faring relatively better in two states (Kansas and New Jersey), and relatively worse in four others (Alabama, Arkansas, California, and Michigan).

Since the multivariate analysis in the next section will be limited to Alabama, Colorado, and Michigan, it is worth reviewing the changes in utilization for these three states. Alabama is a BBA change state, but one that paid very little (4.8%) of Medicare

[17] Summing the means across the three types of providers shown in Table 4-9 generally results in a lower figure than the mean of total outpatient mental health visits shown in Table 4-8. This is because a small number of non-psychiatrist physicians provide, and are reimbursed by Medicare for, outpatient mental health treatment (and are included in Table 4-8).

cost-sharing prior to BBA. Payments fell a little more following BBA: to 4.2 percent. Utilization of mental health treatment by dually eligible beneficiaries increased over this time period, however, primarily through more beneficiaries seeing psychiatrists. Colorado has historically paid state plan amounts, but prior to BBA, was relatively generous, reimbursing 50 percent of what Medicare did not pay for outpatient mental health utilization. By 1998, this percentage had fallen dramatically to 18 percent, but with no apparent erosion in access. Utilization rates for dually eligible beneficiaries are higher in Colorado than in any of the other states at both points in time. (Utilization rates also are higher for non-dually eligible beneficiaries in Colorado, compared with the other two states.)

Michigan is also a BBA change state that paid little in the way of cost-sharing for outpatient mental health treatment prior to BBA (8.4%), and by 1998 paid almost nothing (1.1%). Following BBA, both the percent of dually eligible beneficiaries receiving services, and the number of visits they received after entering treatment, fell dramatically. Fewer visits to both psychiatrists and social workers contributed to this decline. Non-dually eligible beneficiaries residing in Michigan also received fewer outpatient mental health visits in 1998 than in 1996, although the rate of decrease was significantly smaller than that experienced by dually eligible beneficiaries.

4.2.2 Multivariate Results

The effect of Medicaid cost-sharing payment changes on utilization of outpatient mental health treatment varied by type of provider. Reducing cost-sharing payments was associated with a significant decrease in the likelihood that a dual eligible would receive any outpatient mental health treatment. Lower cost-sharing payments also were associated with a reduced probability of seeing a psychiatrist. However, cost-sharing payment reductions were associated with a significant increase in the probability of receiving treatment from social workers. The differing direction of the effects suggests that there may have been a substitution of social workers for psychiatrists in response to the cost-sharing payment changes. There was no significant impact on the likelihood of seeing a psychologist.

The effects of cost-sharing payment changes on the probability of using outpatient mental health services are substantially larger than those seen in the outpatient visit and preventive service regressions. As shown in Table 4-8, the estimated changes in utilization based on the actual payment changes in our three study states[18] were a 3 percent reduction in the probability of an outpatient mental health visit in Alabama, a 16 percent reduction in Colorado, and a 21 percent reduction in Michigan. Estimated reductions in the probability of seeing a psychiatrist ranged from 6 percent in Alabama to more than 30 percent in Michigan. In contrast, payment reductions are estimated to be

[18] These changes were a 12.5 percent reduction in Alabama, a 65.1 percent reduction in Colorado, and a 86.9 percent reduction in Michigan (see Table 3-3).

Table 4-8

Impact of Medicaid Cost Sharing Payment Changes on Utilization of Outpatient Mental Health Treatment

	Change in Probability of Outpatient Mental Health Visit**	Change in Number of Outpatient Mental Health Visits (for those with at least one mental health visit)	Change in Probability of Psychiatrist Visit (users only)**	Change in Number of Psychiatrist Visits (for those with at least one psychiatrist visit)**
Alabama	-3.4%	-0.3%	-5.6%	-3.2%
Colorado	-16.4	-1.7	-25.8	-16.5
Michigan	-21.3	-2.2	-32.8	-22.0
	Change in Probability of Psychologist Visit (users only)	**Change in Number of Psychologist Visits (for those with at least one psychologist visit)**	**Change in Probability of Social Worker Visit (users only)****	**Change in Number of Social Worker Visits (for those with at least one social worker visit)****
Alabama	1.5%	-1.5%	11.1%	5.8%
Colorado	8.1	-8.1	73.2	30.0
Michigan	11.0	-10.8	108.2	40.1

** Results of multivariate analyses show that a change in Medicaid cost sharing payments had a statisically significant on the probability that a dual eligible would have an outpatient mental health visit, a psychiatrist visit, and a social worker visit ($p<.01$ for all three). The impact on number of psychiatrist and social worker visits was also significant ($p<.01$).

NOTE:
Percent change is calculated using actual cost-sharing payment change between 1996 and 1998 in each state and estimated coefficients from DUAL*CHANGE IN PROPORTION PAID*YEAR 1998 from regressions.

SOURCE: Medicare Part B claims for three states, 1996-1998.

associated with an 11 percent *increase* in the probability of seeing a social worker in Alabama, a 73 percent increase in Colorado, and more than doubling in Michigan.

With the exception of psychiatrist and social worker visits, there was not a significant relationship between Medicare cost-sharing payment reductions and the number of mental health visits for those receiving at least one outpatient mental health treatment visit. Based on the changes observed in these three states, the estimated impact of reducing cost-sharing payments was a 3 percent decrease in the number of psychiatrist visits in Alabama, a 17 percent decrease in Colorado, and a 22 percent decrease in Michigan. In contrast, cost-sharing payment reductions are estimated to increase the number of social worker visits, ranging from 6 percent in Alabama to 40 percent in Michigan. This is consistent with the hypothesis that social worker services were substituted for psychiatrist services following cost-sharing payment reduction.

5 Financial Impacts on Physicians and Mental Health Providers

In this chapter, we examine physicians and mental health providers who serve disproportionate numbers of dually eligible beneficiaries. We compare them with other providers treating dually eligible beneficiaries with regard to specialty and to urban/rural location. We also examine variations in Medicaid cost-sharing payments and the resulting impacts on Medicare practice revenues. Providers with relatively large dual eligible practices will be disproportionately affected by any changes in Medicaid cost-sharing policies. Because the provider analysis required that we merge Part B and SMRF claims at the individual claim level, this part of the study is restricted to the three states for which we had CPT-4 or HCPCS procedure codes (Alabama, Colorado, and Michigan).

We divide this chapter into two analytic sections. The first section presents results on all physicians treating dually eligible beneficiaries, excluding psychiatrists.[19] The second section presents results for mental health providers, including psychiatrists, psychologists, and clinical social workers.

[19] As noted in Chapter 2, we also excluded radiologists and pathologists.

5.1 Impacts on Physicians

5.1.1 Size Distribution of Dually Eligible Caseloads and Physicians

As described in Chapter 2, physicians were grouped into four categories, based on the number of dually eligible beneficiaries they treated over the course of a calendar year: fewer than 10, 10 to 49, 50 to 99, and 100 or more. Table 5-1 illustrates how physicians were distributed across these practice size groupings in each state. Most physicians who treat dually eligible beneficiaries actually have relatively few such beneficiaries in their practices. Approximately one-half of physicians in each state see less than 10 such patients over the course of a year. By contrast, a small number of physicians in each state have large dually eligible caseloads, especially in Colorado and Michigan where only 2-4 percent of physicians treat 100 or more such patients annually.

There was little change in the size distribution of dually eligible caseloads over time, although there appears to be a slight shift toward smaller caseloads in Colorado and Michigan (as indicated by the somewhat smaller percentages of physicians with caseloads of 50 and higher). In fact, average caseloads shrunk by 13 percent in Colorado, and 8 percent in Michigan, with no change in Alabama (data not shown). Growth in managed care enrollment (both Medicare + Choice and Medicaid managed care plans) among dual eligibles in Colorado and Michigan may contribute to this apparent decline in caseload. In these states, the number and percent of dual eligibles excluded from our analyses because they were enrolled in managed care more than doubled from 1996 to 1998 (see Table 2-1).

Table 5-1

Distribution of Physicians by Size of Dually Eligible Practice (percent of physicians)

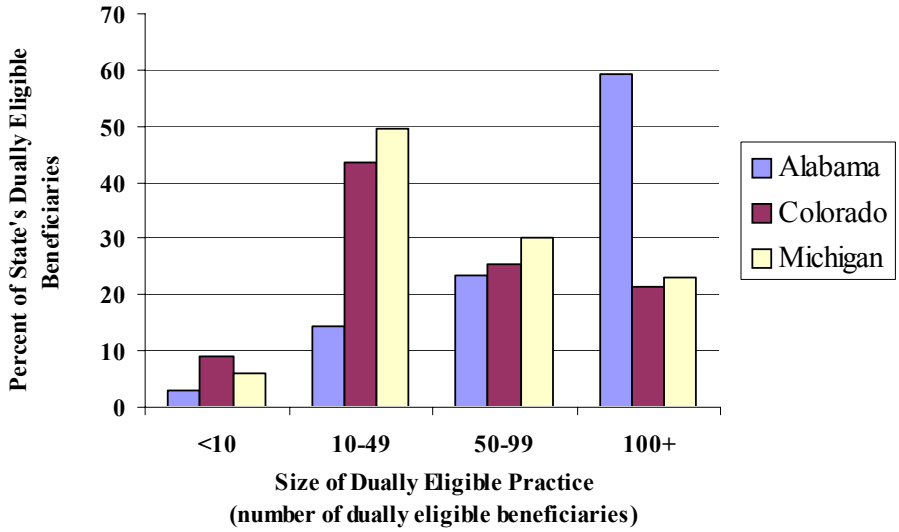
Number of Dually Eligible Beneficiaries	Alabama		Colorado		Michigan	
	1996	1998	1996	1998	1996	1998
<10	53.9%	54.5%	57.9%	59.9%	50.4%	50.5%
10 to 49	21.1	20.5	31.2	31.5	34.8	36.2
50 to 99	12.8	12.3	7.8	6.2	10.4	9.8
100+	12.2	12.7	3.1	2.4	4.5	3.5

NOTES: Columns sum to 100%.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

The uneven distribution of dually eligible beneficiaries across physicians can also be seen graphically in Figure 5-1. (For ease of presentation, we display data for 1998 only.) Bars for each state are grouped by the size of physicians' dually eligible caseloads. The Y-axis represents the percent of all dually eligible beneficiaries in that state who are treated by physicians of each practice size. The distribution of dually eligible beneficiaries is particularly skewed in Alabama, where the very largest practices (100+ beneficiaries) treat 59 percent of all dually eligible beneficiaries in the state. Similarly sized practices in Colorado and Michigan account for just over 20 percent of all dually eligible beneficiaries in their respective states.

Figure 5-1
Size Distribution of Physicians' Dually Eligible Caseloads by State, 1998



It is possible that physicians treating large numbers of dually eligible beneficiaries also treat large numbers of Medicare patients generally. If so, then our measure of dually eligible practice size might be capturing disproportionate Medicare dependence instead. To examine this, we calculated the share of the physician's total Medicare practice that was attributed to dually eligible beneficiaries, based on allowed charges.[20] As seen in Table 5-2, physicians treating larger numbers of dually eligible beneficiaries also devoted a larger share of their total Medicare practice to such patients. Thus, it is not the case that physicians with large dual eligible caseloads simply have large Medicare practices overall. Rather, their Medicare practices are disproportionately

[20] We also calculated dual eligible practice shares based on unique HICNOs treated. The percent shares were virtually identical to those calculated using allowed charges.

Table 5-2

Dual Eligible Share of Physicians' Total Medicare Caseloads
(percent of Medicare allowed charges
attributable to dually eligible beneficiaries)

	Size of Dually Eligible Practice				
	<10	10 to 49	50 to 99	100+	**All**
Alabama					
1996	14.8	12.6	17.2	27.4	19.9
1998	14.2	12.2	17.2	27.3	20.2
Colorado					
1996	9.7	11.9	20.1	31.2	15.6
1998	7.9 **	11.7	20.0	30.8	14.5 **
Michigan					
1996	4.8	7.5	12.7	19.9	10.2
1998	4.7	7.3	11.9 **	19.1	9.5 **

NOTE: **Significantly different from 1996 at the .01 level

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

comprised of dually eligible beneficiaries. Given the greater concentration of dual eligible beneficiaries in their practices and their consequently greater reliance on revenues from these patients, it seems reasonable to expect that changes in Medicaid cost-sharing policies will have a disproportionate effect on these physicians. There was a small, but statistically significant, decline in the overall share of dually eligible beneficiaries treated in both Colorado and Michigan. This is consistent with the absolute decline in the numbers of beneficiaries treated that was noted earlier and may be related to the substantial growth in enrollment of dual eligibles in managed care in these states.

Physicians may choose to adjust their dually eligible caseloads in response to changes in cost-sharing payments; they may also choose whether to treat such beneficiaries at all. We examined how many physicians treated dually eligible beneficiaries in 1996 and 1998, as well as the change in the number of physicians treating dually eligible beneficiaries (Table 5-3). The number of general and family practitioners (GPs/FPs) fell from 1996 to 1998 in all states, a trend we attribute to a secular decline in these specialties (AMA, 2000). Increases in the number of specialists treating dually eligible beneficiaries more than offset this decline in both Alabama and Michigan. However, in Colorado, the number of specialists also fell, resulting in a net decline in the total number of physicians treating dually eligible beneficiaries of over 3 percent. (Recall from Chapter 4 that we observed a significant reduction in office visits per beneficiary in Colorado, both for visits generally and for visits to specialists.) Some of this decline in the number of physicians treating dual eligibles may also be related to the growth in enrollment of dually eligible beneficiaries in managed care in Colorado, although we do not observe a similar decline in Michigan where managed care enrollment also grew.

Approximately one-half of physicians were present in both years, while the other half showed up in either 1996 or 1998, but not both. The latter group of physicians were largely those with very small caseloads of dually eligible beneficiaries, sometimes treating only a single patient over the course of the year.

Table 5-3

Number of Physicians Treating Dually Eligible Beneficiaries

	1996	1998	Change, 1996-1998
Alabama			
GP/FP	1,820	1,779	-41
Internist	1,628	1,774	146
Medical Specialist	1,380	1,459	79
Surgical Specialist	2,139	2,291	152
Other Specialist	3,170	3,196	26
All	10,137	10,499	362
Colorado			
GP/FP	1,735	1,602	-133
Internist	1,067	1,106	39
Medical Specialist	942	932	-10
Surgical Specialist	1,668	1,645	-23
Other Specialist	2,053	1,932	-121
All	7,465	7,217	-248
Michigan			
GP/FP	3,364	3,193	-171
Internist	2,867	2,969	102
Medical Specialist	2,381	2,429	48
Surgical Specialist	7,255	7,672	417
Other Specialist	5,004	5,035	31
All	20,871	21,298	427

SOURCE: Medicare Part B claims for three states, 1996 and 1998.

5.1.2 Specialty and Practice Location

We examined the specialty distribution and practice location (MSA/non-MSA) of physicians in the four groups of dually eligible caseloads. We found no real difference between 1996 and 1998, and present just the 1998 distributions here. Table 5-4 presents the specialty distribution of physicians, categorized as GP/FP, internist, medical specialist, surgical specialist, and all other specialists. The most common specialties in the latter group were anesthesiology and emergency medicine. There were surprisingly few differences in specialty distribution by size of dually eligible practice. There were some differences by state. The largest dually eligible practices in Alabama (100+) included a disproportionate number of GPs and FPs relative to smaller dually eligible practices. By contrast, similar large practices in Colorado included disproportionately more internists, while those in Michigan included more surgical specialists.

Physicians with large dually eligible caseloads practicing in Alabama and Colorado were more likely to be located in non-MSAs (see Table 5-5). This suggests that one reason for their large caseloads may be that they are in rural areas with relatively fewer other physicians. Thus, their caseloads for non-dually eligible beneficiaries may also be higher. No similar pattern was seen in Michigan. If anything, physicians with the very largest dually eligible practices were *more* likely to be in MSAs.

Table 5-4

Distribution of Physicians by Size of Dually Eligible Practice and Specialty, 1998

	Number of Dually Eligible Beneficiaries Treated			
	<10	10 to 49	50 to 99	100+
Alabama				
GP/FP	16.1%	17.4%	16.4%	23.2%
Internist	16.3	16.9	17.0	18.8
Medical Specialist	14.7	11.2	14.0	16.0
Surgical Specialist	27.2	13.9	20.7	21.3
Other Specialists	25.7	40.5	32.0	20.8
Colorado				
GP/FP	23.3	19.7	24.2	14.6
Internist	15.4	13.5	18.5	29.8
Medical Specialist	11.1	16.5	13.4	10.7
Surgical Specialist	24.7	21.1	24.0	25.8
Other Specialists	25.5	29.1	20.0	19.1
Michigan				
GP/FP	16.5	13.2	10.2	11.6
Internist	13.9	13.4	13.8	12.6
Medical Specialist	11.9	10.4	12.0	9.3
Surgical Specialist	32.9	37.9	46.3	53.8
Other Specialists	24.8	25.1	17.6	12.8

NOTE: Columns sum to 100 percent by state and practice size.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

Table 5-5

Percent of Physicians Located in MSAs by Size of Dually Eligible Practice, 1998

	<10	10 to 49	50 to 99	100+	All
Alabama	47.9	49.9	36.1	33.5	45.0
Colorado	65.4	51.1	49.0	38.2	59.2
Michigan	71.9	73.3	69.8	76.0	72.3

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

5.1.3 Cost-Sharing Payments by Size of Dually Eligible Practice and Service Type

Using their merged Part B-SMRF claims, we calculated the percent of Medicare deductibles and coinsurance paid by Medicaid for each individual physician in our study. Table 5-6 displays these percents by size of dually eligible practice. In Alabama and Michigan, there is a steady increase in the percent paid with the size of practice in 1996. The percent increases from 19.4 percent for Alabama physicians treating fewer than 10 dually eligible beneficiaries in 1996 to 59.5 percent for those treating 100 or more. No such pattern was observed in Colorado.[21]

[21] This pattern is also less marked in the other two states post-BBA.

Table 5-6

Physician Cost-Sharing Payments by Size of Dually Eligible Practice (percent of Medicare deductibles and coinsurance paid by Medicaid)

	1996				1998			
	< 10	10 to 49	50 to 99	100+	< 10	10 to 49	50 to 99	100+
Alabama	19.4	52.8	56.8	59.5	11.1	28.3	35.0	31.2
Colorado	18.2	22.5	21.5	17.4	17.3	22.5	23.7	19.7
Michigan	18.3	30.8	35.0	38.6	6.1	8.8	9.2	8.0

NOTE: Physicians are weighted by their Medicare cost-sharing liability.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

Lower cost-sharing percentages for smaller dually eligible practices reflect the greater number of physicians in those practices who received *zero* cost-sharing payments from Medicaid. Many physicians may not bother to bill Medicaid for cost-sharing amounts, because of the administrative costs involved and the low expected return. This will be particularly true for those physicians who only treat a few dually eligible beneficiaries a year. (The majority of physicians in the smallest dually eligible practices treated only one such patient over the course of the year.) Furthermore, physicians with small dually eligible practices may not even be Medicaid participating providers (and hence would not be eligible for payment).

Cost-sharing percents were also calculated by type of service. Table 5-7 compares changes in these percents for surgery, anesthesia, office visits, inpatient hospital visits, ER visits, SNF visits, and specialty tests.22 These percentages were calculated at the state level, based on the sum of all appropriate claims. While cost-sharing payments vary by type of service, there are no consistent patterns across states. There are some common patterns in changes over time, however. Alabama and Michigan reduced their cost-sharing payments pretty much across the board, but inpatient visits and ER visits were particularly hard hit. Payments for ER visits also fell in Colorado. Similarly, Medicaid payments for anesthesia deductibles and coinsurance actually increased in both Alabama and Colorado.

5.1.4 Reductions in Revenue Associated with State Cost-Sharing Policies

The cost-sharing percents shown in the prior two tables represent the share of beneficiary cost-sharing liability that physicians receive from state Medicaid programs. The difference between those percents and 100 percent represents potential reductions in physician revenue. Faced with two Medicare patients, one for whom the physician receives the full Medicare Fee Schedule amount (including cost-sharing) and one for whom the physician receives some lesser amount, theory predicts that the physician will

[22] The latter consist of diagnostic tests, other than radiology and laboratory. They are found in the 90000 series of CPT-4 codes and include ECGs and the like.

Table 5-7

Medicaid Cost-Sharing by Type of Physician Service
(percent of Medicare Part B deductibles and coinsurance paid by Medicaid)

	Alabama			Colorado			Michigan		
	1996	1998	% Change	1996	1998	% Change	1996	1998	% Change
Type of Service									
Surgery	60.1	37.1	-38.3	20.1	23.5	16.9	36.0	9.6	-73.3
Anesthesia	57.0	72.8	27.7	24.5	44.7	82.4	20.7	15.3	-26.1
Office Visits	62.4	40.4	-35.3	25.0	19.0	-24.0	33.7	13.8	-59.1
Inpatient Visits	51.5	6.0	-88.3	20.0	23.1	15.5	26.1	1.5	-94.3
ER Visits	50.1	12.8	-74.5	22.8	19.7	-13.6	39.3	3.2	-91.9
SNF Visits	40.7	20.4	-49.9	22.9	23.4	2.2	27.8	7.2	-74.1
Specialty Tests	55.9	54.8	-2.0	33.4	35.8	7.2	32.6	9.0	-72.4
All Services[a]	54.7	28.8	-47.3	20.4	20.4	0.0	31.9	7.8	-75.5

[a] Includes all physician services, not just those listed above.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

prefer to treat the former, *all other things equal*. As the gap widens between what Medicaid pays on behalf of dually eligible beneficiaries and what the physician can receive for treating other Medicare patients, this preference will be further reinforced.

In order to estimate the magnitude of the potential financial impact of states' cost-sharing policies, we calculated the average reduction in revenue per physician and expressed this as a percent of both the physician's dual eligible revenues and his/her total Medicare revenues. Reductions in revenue were defined as the dollar difference between the total cost-sharing liability (deductible plus coinsurance amounts) and what Medicaid actually paid for each claim, with this difference then summed across claims for each individual physician. These revenue reductions were then divided by two measures of total revenues: (1) total potential revenues associated with dually eligible beneficiaries alone; and (2) total potential Medicare revenues for both dually eligible and non-dually eligible beneficiaries.

Potential revenues are defined as total allowed charges, i.e., Medicare's payment plus the full coinsurance and deductible liability. In the case of total potential Medicare revenues, we assume for illustrative purposes that physicians receive full cost-sharing for their non-dually eligible beneficiaries, either from the patients themselves or from supplemental insurance. In practice, providers may not always receive full cost-sharing payments for non-dually eligible beneficiaries. For example, beneficiaries without supplemental insurance may not pay the full amount out-of-pocket. In addition, some supplemental insurance policies (Medigap, Medicare+Choice and retiree health plans) may not cover the full cost-sharing amount. Medicare beneficiaries with individually

purchased Medigap insurance still pay 15 percent of the cost of physician, laboratory, and other medical provider services out-of-pocket (GAO, 2001).

Table 5-8 presents the average revenue loss per physician as a percent of dual eligible revenues by size of dually eligible practice and for the state as a whole. There was a significant reduction in revenue for physicians treating dually eligible beneficiaries in the two BBA change states. The reduction in state cost-sharing payments resulted in a 58 percent reduction in revenues as a percent of all dual eligible revenues on average in Alabama (the percent change from 10.4 to 16.4), and a 37 percent reduction for the average physician in Michigan. Physicians with large dual eligible caseloads experienced relatively larger revenue reductions than those with smaller caseloads, because they had succeeded in receiving a larger share of their cost-sharing from Medicaid prior to BBA (recall Table 5-6). Finally, while there was no BBA-related change in Colorado, physicians in that state experience reductions in revenue as high or higher than in the other two states.

How do we interpret the percentages in Table 5-8? Consider physicians with the largest dual eligible caseloads in Alabama, for example. In 1996, these physicians collected 10 percent less from Medicare and Medicaid combined for their dually eligible patients than they would have received for their non-dually eligible patients (assuming

Table 5-8

Reduction in Medicaid Cost-Sharing Revenues as Percent of Physicians' Dual Eligible Medicare Revenues

	Size of Dually Eligible Practice				
	<10	10 to 49	50 to 99	100+	**All**
Alabama					
1996	18.2	11.0	10.1	10.0	10.4
1998	20.1 **	16.7 **	15.1 **	16.7 **	16.4 **
Colorado					
1996	18.9	17.9	19.1	20.7	18.9
1998	19.2	18.0	18.5	20.6	18.7
Michigan					
1996	19.4	16.2	15.3	14.5	15.6
1998	22.1 **	21.3 **	21.3 **	21.4 **	21.3 **

** Significantly different from 1996 at the .01 level.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

the latter had supplemental insurance that covered the full cost-sharing amounts or paid the full amounts themselves). By 1998, the reduction in revenue accounted for 16.7 percent of their total dual eligible revenues. The reductions in revenue were even higher in Colorado and Michigan (21%).

Of course, dually eligible beneficiaries represent only a portion of physicians' total Medicare patients. Table 5-9 presents these same Medicaid reductions in revenue as a percent of physicians' total Medicare revenues. There was a statistically significant

Table 5-9

Reduction in Medicaid Cost-Sharing Revenues as Percent of Physicians' Total Medicare Revenues

	Size of Dually Eligible Practice				
	<10	10 to 49	50 to 99	100+	**All**
Alabama					
1996	2.7	1.4	1.7	2.7	2.1
1998	2.9	2.0 **	2.6 **	4.6 **	3.3 **
Colorado					
1996	1.8	2.1	3.8	6.5	3.0
1998	1.5 **	2.1	3.7	6.3	2.7 **
Michigan					
1996	0.9	1.2	2.0	2.9	1.6
1998	1.0 **	1.6 **	2.5 **	4.1 **	2.0 **

** Significantly different from 1996 at the .01 level.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

increase in the percent of potential Medicare revenue lost as the result of reductions in cost-sharing payments in both BBA change states. The percentages are low on average, representing 2-3 percent of physicians' total Medicare revenues. However, they are considerably larger for those physicians treating disproportionately large numbers of dually eligible beneficiaries. Among physicians with caseloads of 100 or more dually eligible beneficiaries, reductions in revenue accounted for 4-6 percent of total Medicare revenues in all three states in 1998. The reduction in potential revenue increased

significantly from 1996 to 1998 for physicians with this practice size in the two BBA change states.

In contrast, the reduction in revenue fell by a small, but statistically significant, amount relative to total Medicare revenues in Colorado. Since the reduction in revenues as a percent of dual eligible revenues were unchanged (recall Table 5-8), we can attribute this to an increase in Medicare revenues for non-dually eligible beneficiaries.

5.2 Impacts on Mental Health Providers

5.2.1 Size Distribution of Dually Eligible Practices and Mental Health Providers

Mental health providers were categorized into three groups based on the number of dually eligible beneficiaries they treated during the year: (1) fewer than 5; (2) 5 to 49; and (3) 50 or more. (Because mental health providers generally have much smaller caseloads than physicians, the categorization used for physicians would have not been appropriate for them.) As was seen earlier for physicians generally, mental health providers with a disproportionate share of dually eligible beneficiaries (50 or more) represented a small percent of all providers in 1996: 13.2 percent in Alabama, 6.5 percent in Colorado, and 9.5 percent in Michigan (see Table 5-10). This percentage fell slightly in 1998, especially in Colorado, as providers either reduced their dually eligible caseloads or stopped treating these beneficiaries altogether. It appears that both have happened in two states. Average caseloads fell by 14 percent in Colorado, and by 7 percent in Michigan (data not shown). As noted previously, growth in managed care

enrollment among dual eligibles in Colorado and Michigan may contribute to the reductions in these states. Dually eligible caseloads grew by 6 percent, on the other hand, in Alabama.

Table 5-10

Size Distribution of Mental Health Providers' Dually Eligible Caseloads by State (percent of providers)

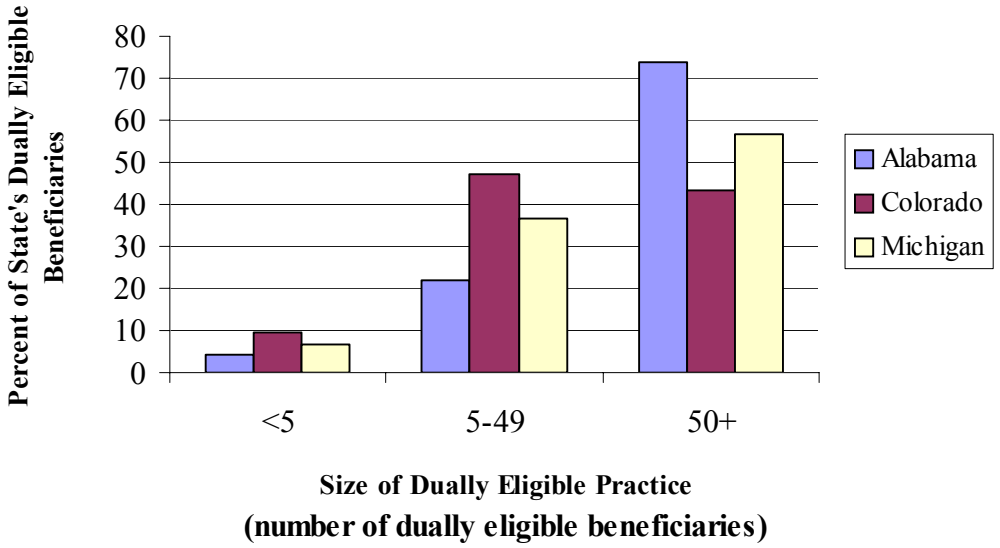
Number of Dually Eligible Beneficiaries Treated	Alabama		Colorado		Michigan	
	1996	1998	1996	1998	1996	1998
<5	56.3%	62.0%	67.4%	65.6%	61.7%	60.5%
5 to 49	30.5	25.0	26.1	29.9	28.8	30.9
50+	13.2	13.0	6.5	4.5	9.5	8.5

NOTES: Columns sum to 100%.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

The uneven distribution of dually eligible beneficiaries across mental health providers is seen graphically in Figure 5-2. Although mental health providers with large dual eligible caseloads are a small percent of all mental health providers in our study, they treat a disproportionate share of all dually eligible beneficiaries in their respective states. The distribution of beneficiaries is particularly skewed in Alabama, where three-quarters of those receive care from those providers with large caseloads.

Figure 5-2
Distribution of Mental Health Providers' Dually Eligible Caseloads by State, 1998



Dually eligible beneficiaries represent a larger share of mental health providers' total Medicare caseloads, compared with physicians (compare Table 5-11 with Table 5-2 shown earlier). As with physicians generally, relative dual eligible shares increase with the size of dual eligible practice (which was defined by absolute numbers of beneficiaries). Given the high concentration of dually eligible beneficiaries in their Medicare caseloads, it is reasonable to expect that these providers will be very sensitive to any changes in state cost-sharing policies. The declines in dual eligible shares in Colorado and Michigan between 1996 and 1998, and the increase in Alabama, are consistent with the changes in numbers of beneficiaries treated described earlier.

Table 5-11

Dual Eligible Share of Total Medicare Caseloads for Mental Health Providers (percent of Medicare allowed charges attributable to dually eligible beneficiaries)

	Size of Dually Eligible Practice			
	<5	5 to 49	50+	**All**
Alabama				
1996	29.9	31.5	42.9	38.8
1998	25.6 *	33.1	48.8 **	40.7 **
Colorado				
1996	40.8	50.4	65.2	49.1
1998	30.1 **	47.4	68.4	42.7 **
Michigan				
1996	22.2	24.6	39.6	31.5
1998	20.4 *	23.2	34.6 **	27.9 **

**Significantly different from 1996 at .01 level,
*Significantly different from 1996 at .05 level.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

Besides changes in the number of dually eligible beneficiaries treated by mental health providers from 1996 to 1998, there were also changes in the numbers of providers. There were fewer mental health providers treating dually eligible beneficiaries in Colorado and Michigan in 1998 than there were in 1996 (Table 5-12). The reductions were most marked for psychologists in Colorado, and psychiatrists in Michigan. By contrast, the number of mental health providers treating dually eligible beneficiaries in Alabama, especially psychiatrists, increased over the same time period.

Table 5-12

Number of Mental Health Providers Treating Dually Eligible Beneficiaries

	1996	1998	Change, 1996-1998
Alabama			
Psychiatrist	480	553	73
Psychologist	170	172	2
Social Worker	124	129	5
All	774	854	80
Colorado			
Psychiatrist	442	440	-2
Psychologist	334	284	-50
Social Worker	144	140	-4
All	920	864	-56
Michigan			
Psychiatrist	1,186	1,112	-74
Psychologist	373	395	22
Social Worker	685	666	-19
All	2,244	2,173	-71

SOURCE: Medicare Part B claims for three states, 1996 and 1998.

5.2.2 Specialty Distribution and Practice Location

As seen in Table 5-13, psychiatrists are disproportionately represented among the largest dually eligible practices in all three states. For example, 84-89 percent of those

Alabama providers with caseloads of 50 or more dually eligible beneficiaries are psychiatrists, compared with 66-68 percent of those with fewer than 5 such cases. This undoubtedly is due to the differences in service mix across these three specialties. Psychologists and social workers primarily provide psychotherapy, which is time consuming and limits the sheer number of patients that can be seen during the course of a day. Psychiatrists also provide medication monitoring visits, which generally are of short duration.

Table 5-13

Distribution of Mental Health Providers by Size of Dually Eligible Practice and Specialty

	1996			1998		
	< 5	5 to 49	50 +	< 5	5 to 49	50 +
Alabama						
Psychiatrist	66.1%	53.2%	84.2%	67.8%	55.4%	88.9%
Psychologist	24.1	19.6	7.9	21.5	19.2	4.0
Social Worker	9.4	27.2	7.9	10.6	25.4	7.1
Colorado						
Psychiatrist	44.2	58.8	68.8	50.8	54.0	56.1
Psychologist	37.1	31.4	31.3	30.5	34.6	43.9
Social Worker	18.5	9.4	0.0	18.6	11.4	0.0
Michigan						
Psychiatrist	42.1	58.7	90.5	40.4	57.9	90.2
Psychologist	21.5	10.7	3.8	23.5	12.1	3.3
Social Worker	36.2	29.0	3.3	35.8	29.1	4.9

NOTE: Columns sum to 100 percent by practice size and state.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

Unlike the other two states, the specialty distribution by size of dually eligible practices in Colorado did change over the study period. There was a marked reduction in the percent of psychiatrists with large (50+) practices, from 68.8 percent in 1996 to 56 percent in 1998, with a corresponding increase in the percent of psychologists. Recall from Table 5-10 that there was also a reduction in the total number of large dually eligible practices in this state.

The majority of mental health providers are located in MSAs (see Table 5-14). Those with large (50+) dually eligible caseloads are less likely to be located in MSAs, however, compared with providers with smaller caseloads. (There were no differences in practice location between 1996 and 1998, so we just show 1998.) Presumably, there are relatively fewer mental health providers in rural areas, and hence caseloads tend to be higher than elsewhere simply for this reason.

5.2.3 Cost-Sharing Percents by Size of Dually Eligible Practice and Service Type

Mental health providers offer a mix of Medicare services that are subject to different cost-sharing provisions. Outpatient mental health treatment is reimbursed at an effective 50 percent rate, leaving the remaining 50 percent to be paid by Medicaid and/or the beneficiary. All other mental health services, however, will be paid by Medicare at the higher 80 percent rate, leaving Medicaid responsible for a much smaller amount. These other services include all diagnostic evaluations, inpatient visits, and medication

monitoring, among others. Psychiatrists are much more likely to provide these other types of services.

Table 5-14

Percent of Mental Health Providers Located in MSAs by Size of Dually Eligible Practice, 1998

	Size of Dually Eligible Practice			
	< 5	5 to 49	50 +	**All**
Alabama	69.1	67.5	50.0	66.2
Colorado	72.5	68.8	61.0	70.9
Michigan	79.3	80.8	74.3	79.4

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

Table 5-15 presents the percent of deductibles and coinsurance Medicaid paid by size of dually eligible practice, first for outpatient mental health treatment and then (below) for all other mental health services not subject to the 50 percent limitation. Note that these mean percentages are based on those providers with Medicare cost-sharing liability for a given type of service. There are relatively fewer psychologists and social workers providing services other than outpatient mental health treatment, for example; thus, the "all other mental health services" percentages are largely based on psychiatrists. There were also providers with no Medicaid claims for outpatient mental health treatment, especially among those with the smallest dual eligible practices.

Table 5-15

Cost-Sharing Payments for Mental Health Providers by Size of Dually Eligible Practice (percent of Medicare deductibles and coinsurance paid by Medicaid)

	Outpatient Mental Health Treatment					
	1996			1998		
	< 5	5 to 49	50+	< 5	5 to 49	50+
Alabama	2.9	2.3	6.8	1.5	2.8	7.7
Colorado	52.0	54.8	43.8	18.6	23.7	19.6
Michigan	1.4	7.8	11.7	0.1	1.1	2.1

	All Other Mental Health Services					
	1996			1998		
	< 5	5 to 49	50+	< 5	5 to 49	50+
Alabama	1.8	16.6	37.3	2.0	4.7	8.6
Colorado	21.4	38.4	26.9	29.0	47.5	57.8
Michigan	1.9	18.0	17.1	1.2	1.7	2.7

NOTES: Providers are weighted by their Medicare cost-sharing liability.

SOURCE: Medicare Part B and SMRF claims for three states, 1996 and 1998.

As we observed earlier for physicians, cost-sharing payments generally increased by size of dual eligible practice in Alabama and Michigan. This held true for both outpatient mental health treatment as well as for other mental health services. Thus, Michigan mental health providers who treated fewer than 5 dually eligible beneficiaries in 1996 received only 1.4 percent of their cost-sharing amounts for outpatient treatment,

while those treating 50 or more received 11.7 percent. While these patterns persisted in 1998, the absolute percentages fell markedly. Compared to physicians generally (recall Table 5-6), mental health providers in Alabama and Michigan received considerably less for those other services that would have been subject to the 20 percent coinsurance. Presumably, this reflects differences in the mix of services provided and in relative differences in their Medicare and Medicaid rates.

Colorado providers received similar cost-sharing payments, regardless of dually eligible practice size. In 1996, cost-sharing payment rates for outpatient mental health treatment averaged considerably more than those for all other mental health services, a differential we noted earlier in Chapter 3. The reasons for this are unknown, but by 1998, this difference had reversed.

5.2.4 Reductions in Revenue Associated with State Cost-Sharing Policies

The cost-sharing percents shown in the prior table represent the share of beneficiary cost-sharing liability that mental health providers received from state Medicaid programs. The difference between those percents and 100 percent represents potential reductions in revenue to mental health providers. As noted earlier, given a choice between a Medicare beneficiary for whom the mental health provider will receive 100 percent of the fee schedule amount, and one for whom the provider will receive some lesser amount, theory predicts that the provider will prefer the first beneficiary. As the gap widens between what Medicaid pays on behalf of dually eligible beneficiaries and

what the provider can receive for treating some other Medicare patients, this preference will grow.

In order to estimate the potential magnitude of the financial impact of states' cost-sharing policies, we calculated the average reduction in revenue per provider and expressed this as a percent of both the provider's dual eligible revenues and total Medicare revenues. We calculated four measures of the impact of reductions in revenue, using two definitions of reductions in revenue and two definitions of total revenues. Reductions in revenue were defined as the dollar difference between the total cost-sharing liability (deductible plus coinsurance amounts) and what Medicaid actually paid for each claim, with this difference then summed across claims for each individual provider. Different definitions of the coinsurance amount were used to calculate the two variants of reductions in revenue: the full 50 percent rate and the 12 ½ percent that states are currently legally required to consider as cost-sharing. These two measures of revenue reductions were then each divided by two measures of total revenues: (1) total potential revenues associated with dually eligible beneficiaries alone; and (2) total potential Medicare revenues for both dually eligible and non-dually eligible beneficiaries. Potential revenues were defined as total allowed charges, i.e., Medicare payments plus the full coinsurance and deductible liability. In the case of total potential Medicare revenues, we assume for illustrative purposes that providers receive full cost-sharing for their non-dually eligible beneficiaries, either from the patients themselves or from supplemental insurance. As noted previously, providers may not always receive full cost-sharing payments for non-dually eligible beneficiaries.

Tables 5-16 and 5-17 present the average revenue reduction per provider as a percent of dually eligible revenue by size of dually eligible practice and for the state as a whole. Table 5-16 calculates the revenue reduction relative to the full 50 percent rate, while Table 5-17 calculates the revenue reduction based on the 12 ½ percent rate. Table 5-16 shows a significant reduction in revenues associated with treating dually eligible beneficiaries in all three states, although the magnitude of the reduction was relatively small in Alabama and Michigan. The absolute size of these reductions in revenue are considerably higher than those observed for physicians (Table 5-8), reflecting the much lower cost-sharing payments made by states for outpatient mental health treatment. The percentages in Table 5-16 suggest that mental health providers receive one-quarter to one-third less for their dually eligible patients than they would have for their non-dually eligible patients. This assumes that the latter group of patients (or their supplemental insurers) paid the full cost-sharing amounts themselves. However, as seen in Table 5-17, reductions in revenue are substantially smaller when they are calculated based on the 12 ½ percent cost-sharing liability, only 8-19 percent of total potential Medicare revenues for dually eligible beneficiaries. Although Alabama and Michigan continue to show significantly greater reductions in revenue in 1998 compared to 1996, there was no longer a significant change in Colorado. With the exception of Alabama, the size of the revenue reduction no longer exceeds that for physicians.

Table 5-16

Reduction in Medicaid Cost-Sharing Revenues for Mental Health Providers as a Percent of Dual Eligible Medicare Revenues Assuming 50 Percent Cost-Sharing Liability

	Size of Dually Eligible Practice			
	<5	5 to 49	50+	**All**
Alabama				
1996	34.6	32.4	22.6	25.7
1998	35.3	35.0 *	26.6 **	28.6 **
Colorado				
1996	23.4	20.4	25.3	23.2
1998	34.6 **	31.1 **	32.1 *	31.9 **
Michigan				
1996	45.2	33.7	29.5	32.3
1998	45.3	34.8	30.6	33.7 **

** Significantly different from 1996 at the .01 level.
*Significantly different from 1996 at the .05 level.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

Table 5-17

Reduction in Medicaid Cost-Sharing Revenues for Mental Health Providers as a Percent of Dual Eligible Medicare Revenues, Assuming 12.5 Percent Cost-Sharing Liability

	Size of Dually Eligible Practice			
	<5	5 to 49	50+	**All**
Alabama				
1996	17.4	17.2	15.0	15.2
1998	18.2	19.3 *	21.3 **	19.2 **
Colorado				
1996	7.7	6.7	9.6	8.3
1998	10.8 **	8.4 *	7.8	8.4
Michigan				
1996	15.3	14.9	16.1	15.7
1998	15.7 *	18.4 **	20.4 **	19.2 **

** Significantly different from 1996 at the .01 level.
*Significantly different from 1996 at the .05 level.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

We saw earlier that dually eligible beneficiaries accounted for a relatively larger share of mental health providers' caseloads, compared with physicians. This larger share, combined with relatively lower cost-sharing payments, means that their reductions in revenue from Medicaid cost-sharing payments will account for a relatively larger share of total Medicare revenues as well. As seen in Table 5-18, when calculated based on the 50 percent cost-sharing liability, these revenue reductions represented 11-22 percent of

the average mental health provider's total Medicare revenues in 1998 (compared with 2-3% for physicians who do not provide mental health services), up significantly in Alabama and Colorado.[23] The reductions are again smaller when calculated based on the 12 ½ percent rate (Table 5-19), although the reductions grew over time in Alabama and Michigan and, in all three states, they still exceed the revenue reductions for physicians not providing mental health services.

Table 5-18

Reduction in Medicaid Cost-Sharing Revenues for Mental Health Providers as a Percent of Total Medicare Revenues Assuming 50 Percent Cost-Sharing Liability

	Size of Dually Eligible Practice			
	<5	5 to 49	50+	**All**
Alabama				
1996	10.4	10.2	9.7	9.9
1998	9.0	11.6	13.0 **	12.4 **
Colorado				
1996	9.6	10.3	16.5	12.7
1998	10.4	14.8 **	21.9 **	16.4 **
Michigan				
1996	10.0	8.3	11.7	10.1
1998	9.2	8.1	10.6	9.3 **

** Significantly different from 1996 at the .01 level.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

[23] The small, albeit significant, decline in Michigan resulted from a relative increase in average revenues from non-dually eligible beneficiaries.

Table 5-19

Reduction in Medicaid Cost-Sharing Revenues for Mental Health Providers as a Percent of Total Medicare Revenues, Assuming 12.5 Percent Cost-Sharing Liability

	Size of Dually Eligible Practice			
	<5	5 to 49	50+	**All**
Alabama				
1996	5.2	5.4	6.1	5.9
1998	4.7	6.1	9.5 **	8.3 **
Colorado				
1996	3.1	3.4	6.3	4.5
1998	3.2	4.0	5.3	4.3
Michigan				
1996	3.4	3.7	6.4	4.9
1998	3.2	4.3 **	7.1	5.3 **

** Significantly different from 1996 at the .01 level.

SOURCE: Medicare Part B and SMRF OT claims for three states, 1996 and 1998.

6 Conclusions

We summarize the key findings from our study in this chapter, along with a discussion of the data limitations in the study. We conclude this chapter with a series of recommendations that policymakers might consider.

6.1 Key Findings

Our study is based on a quasi-experimental design that analyzes changes in access from 1996 (pre-BBA) to 1998 (post-BBA). We take advantage of cross-state differences in both levels of cost-sharing payments and the magnitude of the payment change. In addition, we use the experience of non-dual Medicare beneficiaries to control for changes over time in service use that are not related to changes in cost-sharing payments. Nine states were included in the study. They were classified into three groups based on how their state plans reported they paid for Medicare Part B deductibles and coinsurance:

1. States that historically have paid the full Medicare cost-sharing amount:
   - Arkansas
   - Indiana

2. States that historically have paid up to the Medicaid rates:
   - California
   - Colorado
   - Kansas

- New Jersey
- Wisconsin

3. States that switched their policy following BBA:
   - Alabama
   - Michigan

Both Medicare and Medicaid eligibility and claims data were merged to calculate cost-sharing payments, beneficiary utilization, and provider impacts. Access to outpatient physician services was analyzed, using all nine states. Due to data limitations, only three states (Alabama, Colorado, and Michigan) could be used to analyze access to outpatient mental health treatment.

Following BBA, the percentage of Medicare cost sharing paid by Medicaid decreased in six of the nine study states. Our study found that these reductions in Medicaid cost-sharing payments lowered the odds that a dually eligible beneficiary would have an outpatient physician visit. The absolute size of the impact depends on the size of the cost-sharing payment change. For example, decreasing payments by 10 percent leads to a one percent reduction in the probability of an outpatient visit. However, in those states with relatively large reductions, the impact is also larger. The change in Medicaid cost sharing from 1996 to 1998 is estimated to have reduced the odds of an outpatient visit by 3 percent in Alabama and California, and 5 percent in Michigan.

We could only test the impact of Medicaid cost-sharing payment changes on outpatient mental health treatment in three states. Cost-sharing payments decreased in all

three states and had a substantial impact on access to outpatient mental health treatment. A 10 percent reduction in Medicaid cost-sharing reduced the odds of having an outpatient mental health treatment visit by 3 percent, but did not affect the number of visits for those with at least one such visit. For those beneficiaries with at least one visit, there was a significant change in the mix of providers seen; they were less likely to be treated by a psychiatrist and more likely to be treated by a social worker. Larger reductions resulted in proportionately larger effects on access. Michigan's reduction in cost-sharing payments post-BBA, for example, is estimated to have lowered the probability that a dually eligible beneficiary would receive outpatient mental health treatment by 21 percent.

Dually eligible beneficiaries are distributed very unevenly across providers. About 10-12 percent of physicians are responsible for treating roughly one-half of all dually eligible beneficiaries in their respective states. The distribution is even more skewed for mental health providers. Reductions in cost-sharing payments thus may have a particularly large impact on Medicare revenues for these providers. Physicians with large dual eligible caseloads received 4-6 percent less in total Medicare revenues than they would have, had they served just non-dual eligible beneficiaries. Among mental health providers with large dual eligible practices, the reductions were considerably larger: 25-30 percent of their total Medicare revenues. Such reductions may lead providers to either restrict the number of dually eligible beneficiaries they treat, or stop treating them altogether.

6.2 Study Limitations

As noted earlier, this study was restricted to a small number of states, which may limit its generalizability to the U.S. as a whole. Future research should replicate our study across a larger number of states, and extend the study period beyond 1998. This would provide a more robust test of the impact of cost-sharing payment limitations on access, and would allow us to determine whether any impacts persisted over time. SMRF data for the original 1996-1998 study period are available for three-quarters of the states that were submitting MSIS data during this time period (29 of 38 states); however, they exclude such large states as New York and Texas. Furthermore, SMRF[24] data beyond 1998 are not available at this time.

The majority of Medicare physician claims in our nine study states had no associated Medicaid claim for the cost-sharing amounts. At this time, we do not know whether the Medicaid claims were zero pay claims (and hence not included in the states' submissions to CMS) or whether physicians simply failed to submit claims. Future research should seek to determine the reason for these "missing" crossover claims. To the extent that these claims were never submitted by physicians in the first place, studies should be conducted of the reasons why not, particularly in those states that pay the full Medicare cost-sharing amount.

[24] Beginning with 1999, SMRF data is called the Medicaid Analytic Extract (MAX) file. As of July 2003, 1999 data for 32 states had been converted to MAX and were undergoing validation.

This study was also hindered by the absence of longitudinal Medicaid data comparable to that available in Medicare that could be used to monitor the ability of dually eligible beneficiaries to access providers. While utilization trends can be tracked using Medicare claims alone, Medicaid claims are necessary in order to link any changes in access to changes in Medicaid cost-sharing payments. Beginning in 1999, CMS required that all states participate in MSIS and submit their claims data to CMS in a standard format. These MSIS data need to be converted to SMRF (now called MAX) files in order for them to be easily used by researchers. Ongoing production of MAX files and the requisite funding for this activity, thus are critical for any monitoring system. In addition, such a system should require that states include procedure codes on all claims for dually eligible beneficiaries. This information is needed in order to calculate cost-sharing payments for specific services, like outpatient mental health treatment, and for individual providers.

Historically, CMS has had limited information on the type of dual eligibility (SSI, QMB-only, etc.) and on states' cost-sharing policies. CMS has recently begun to work with state Medicaid programs to obtain more reliable eligibility data for all types of dually eligible beneficiaries. Beginning with states' 1999 MSIS submissions, CMS has requested that states report the type of eligibility for dually eligible beneficiaries. Currently, state plan information on states' cost-sharing policies for dually eligible beneficiaries is maintained solely at the Regional Offices. This makes it difficult for CMS staff in Baltimore and researchers to obtain updated information on these policies.

CMS plans to continue developing a web-based state plan file repository will help greatly in this regard.

Finally, utilization represented in claims data was the only measure of access available for this study. While these utilization measures are believed to impact outcomes, we were not able to directly evaluate the extent to which access to needed services is jeopardized or the effect on health outcomes. Future studies should also consider the impact of any changes in access on outcomes.

6.3 Recommendations

The results of our research suggest that increasing Medicaid cost-sharing payments had a significant, but modest, impact on access to outpatient physician services and outpatient mental health services. The absolute size of the impact depends on the size of the cost-sharing payment change**.** While the amount of Medicaid cost sharing payments was shown to have an impact on access, the effect on actual health outcomes is unknown. Policies that require state Medicaid programs to pay the full Medicare Part B cost-sharing amounts on behalf of dually eligible beneficiaries may help improve access for dually eligible beneficiaries relative to other Medicare beneficiaries, and may help restore equity among dually eligible beneficiaries across states. Consideration might also be given to extending any such change in policy to all dually eligible beneficiaries and not just those deemed QMBs, as non-QMB dually eligible beneficiaries include some of the sickest of all low-income Medicare beneficiaries.

However, payment of full Part B cost-sharing amounts would certainly increase state Medicaid outlays, a move that would cause concern in states whose state Medicaid budgets already are strained by the weak economy. Our study showed that the additional payments would be in the millions of dollars for some states. Inter-state variation in the magnitude of potential increased outlays is a function not only of differences in their cost-sharing payment policies, but also of the size of their dually eligible populations and the number of Medicare services used by these populations.

At least one-half of these added Medicaid cost-sharing payments would be borne by the federal government, thus mitigating the full cost impact. Nonetheless, the financial impact on some state Medicaid budgets would be severe, especially as states face increasing numbers of uninsured. As an alternative, the Medicare program could assume responsibility for cost-sharing payments for QMBs and other dually eligible beneficiaries. Such a move would help equalize the QMB benefit, regardless of where low-income Medicare beneficiaries happen to live. Policymakers would need to weigh the relative costs and benefits of such a cost-sharing change with other potential program changes, such as a Medicare prescription drug benefit.

If policymakers choose to reconsider cost-sharing payments for dually eligible beneficiaries, they might also review the lack of mental health parity in the Medicare program. In particular, policymakers could reconsider the justification behind the Medicare payment of only 50 percent toward outpatient mental health treatment, especially now that allowed amounts for all professional services (including outpatient mental health treatment) are based on the Medicare Fee Schedule.

There are substantial fiscal implications, regardless of who (the federal government or state Medicaid programs) accepts increased responsibility for Medicare cost-sharing payments on behalf of dually eligible beneficiaries. Federal and state policymakers must consider the relative merits of increased outlays for cost-sharing payments compared to other priorities, and who should appropriately bear the added financial burden. Further studies of the impact of Medicaid payment limitations on access to care would help clarify whether, and how urgently, such policy changes might be needed.

Appendix A

Multivariate Access Analyses

Appendix A

Multivariate Access Analyses

A.1 Model Specification

Multivariate regression techniques were used to identify the impact of changes in Medicaid cost-sharing payments on access to selected outpatient services for dually eligible beneficiaries, holding factors other than the Medicaid cost-sharing payment change constant. The model is based on a quasi-experimental design that analyzes the utilization trend between 1996 and 1998, taking advantage of cross-state differences in the magnitude of the payment change. The model includes non-dually eligible Medicare beneficiaries as a control for utilization changes over time that are unrelated to Medicaid cost-sharing payment changes. If access to care for dually eligible beneficiaries is affected by the level of Medicaid cost-sharing payments, we expect that their utilization will decrease relative to non-dually eligible beneficiaries in states with greater reductions in Medicaid cost-sharing payments compared to those with smaller reductions or increases.

Multivariate analyses of access to outpatient services were conducted at the beneficiary level using data for 1996 and 1998. Logistic regression was used for binary dependent variables (probability of using a given service) and log-normal models were used for continuous models (number of visits for those with service use). The basic multivariate model was:

USE_{ikt} = f($DUAL_i$; YEAR 1998_t; $DUAL_i$*YEAR 1998_t; PROPORTION PAID 1996_k; $DUAL_i$*PROPORTION PAID 1996_k; CHANGE IN PROPORTION $PAID_k$; $DUAL_i$*CHANGE IN PROPORTION $PAID_k$; CHANGE IN PROPORTION

$PAID_k$*YEAR 1998_t; $DUAL_i$*CHANGE IN PROPORTION $PAID_k$*YEAR 1998_t; $OTHER_i$)

where USE_{ikt} = utilization by the i-th person in state k in year t;

$DUAL_i$ = 1 if the beneficiary is dually eligible, 0 otherwise;

YEAR 1998_t = 1 if year is 1998, 0 if year is 1996;

$DUAL_i$*YEAR 1998_t = 1 if the beneficiary is dually eligible and year is 1998, 0 otherwise;

PROPORTION PAID 1996_k = proportion of the Medicare deductible and coinsurance paid by state k's Medicaid program in 1996 (ranges from 0 to 1);

$DUAL_i$*PROPORTION PAID 1996_k = the interaction of $DUAL_i$ and PROPORTION PAID 1996_k (ranges from 0 to 1);

CHANGE IN PROPORTION $PAID_k$ = the change from 1996 to 1998 in the proportion of the Medicare deductible and coinsurance paid by state k (ranges from -1 to 1);

$DUAL_i$*CHANGE IN PROPORTION $PAID_k$ = the interaction of $DUAL_i$ and CHANGE IN PROPORTION $PAID_k$ (ranges from –1 to 1);

CHANGE IN PROPORTION $PAID_k$*YEAR 1998_t = the interaction of CHANGE IN PROPORTION $PAID_k$ and YEAR 1998_t (ranges from –1 to 1);

$DUAL_i$*CHANGE IN PROPORTION $PAID_k$*YEAR 1998_t = the interaction of $DUAL_i$ and CHANGE IN PROPORTION $PAID_k$ and YEAR 1998_t (ranges from –1 to 1); and

$OTHER_i$ = vector of characteristics of beneficiary i.

DUAL*CHANGE IN PROPORTION PAID*YEAR 1998 is the main policy variable of interest in these analyses. It captures the difference in the time trend for dually and non-dually eligible beneficiaries that is related to the change in Medicaid cost-sharing payments over time. A positive coefficient on this interaction term indicates that raising Medicaid cost-sharing payments was associated with an increase in service use over time for dually eligible beneficiaries compared to non-dually eligible, while reducing Medicaid payments was associated with a relative decrease. Similarly, states

with larger cost-sharing payment reductions would have larger decreases in service use by the dually eligible compared to the non-dually eligible.

DUAL measures the difference in utilization of a given service between dually eligible and non-dually eligible beneficiaries in 1996 that is common to all states. Because the model also includes variables for Medically Needy and QMB Only eligibility (discussed below), the uninteracted DUAL variable measures baseline differences between SSI and non-dually eligible beneficiaries.

YEAR 1998 measures the average utilization time trend for non-dually eligible beneficiaries between 1996 and 1998 that is common across all states. For example, this term would capture the effects on utilization of a given service of changes in Medicare policy that applied to all states (such as campaigns to increase influenza immunization and mammography rates). DUAL*YEAR 1998 measures the difference in the utilization time trend for dually eligible beneficiaries compared to the non-dually eligible that is common to all states.

PROPORTION PAID 1996 and CHANGE IN PROPORTION PAID control for baseline utilization differences across states for the non-dually eligible population. CHANGE IN PROPORTION PAID*YEAR 1998 measures differences between states in the change over time in utilization by non-dually eligible beneficiaries. In general, one would not expect a causal relationship between Medicaid cost-sharing payments and utilization by non-dually eligible beneficiaries. However, these variables also capture other unmeasured differences between states (e.g., provider supply, beneficiary propensity to seek care, and general time trends in service use by the Medicare population). To the extent that these differences apply to the Medicare population in a

state as a whole, it is important to control for them so that they are not incorrectly attributed to cost-sharing payment changes.

The interaction of these terms with DUAL (DUAL*PROPORTION PAID 1996 and DUAL*CHANGE IN PROPORTION PAID) control for differences between states in baseline utilization by dually eligible beneficiaries compared to non-dually eligible. While one would expect a positive relationship between DUAL*PROPORTION PAID 1996 and access to services for dually eligible beneficiaries in 1996, this variable also captures other unmeasured differences between states that may influence relative utilization by dually eligible and non-dually eligible beneficiaries. As a result, the sign on this variable cannot be predicted.

There is no causal relationship between baseline (1996) service use and the change in Medicaid cost-sharing payments from 1996 to 1998 for dually eligible beneficiaries (DUAL*CHANGE IN PROPORTION PAID). However, there could still be a relationship between the two if the level of baseline service use is associated with the payment change a state is willing to make. For example, one might hypothesize that states with access problems for dually eligible beneficiaries at baseline would be less likely to significantly reduce cost-sharing payments.

The regression analyses also include a set of dummy variables to control for beneficiary characteristics that are expected to have an impact on service use. These are: age (less than 65, 75-84, and 85+, with 65-74 the omitted category), gender (female), race (black, Asian-American, Hispanic, Native American, and unknown, with white the omitted category), original basis for Medicare entitlement (disabled/end-stage renal disease [ESRD], with age the omitted category), type of dual eligibility (QMB Only and

Medically Needy, with SSI the omitted category), and area of residence (metropolitan statistical area [MSA], with non-MSA the omitted category).

We conducted three sets of regression analyses—one for access to outpatient physician services, one for access to preventive services, and one for access to outpatient mental health treatment. The outpatient physician service and preventive service regressions include beneficiaries in all nine study states that have some period of eligibility in 1996 or 1998. The Medicaid cost-sharing variables in these regressions are calculated using all outpatient physician visits. The outpatient mental health treatment regressions only include beneficiaries in the three states that reported procedure codes in their SMRF data so that outpatient mental health services could be identified (Alabama, Colorado, and Michigan). The Medicaid cost-sharing variables in these regressions are based on outpatient mental health visits (including psychiatrists, psychologists, and social workers).

The analyses of access to outpatient physician services examined three dependent variables:

- probability of an outpatient physician visit;
- number of outpatient physician visits (logged, for those with at least one outpatient physician visit); and
- probability of a specialist visit (for those with at least one outpatient physician visit).

Access to four preventive services was also analyzed:

- probability of a flu shot;
- probability of mammography screening (women only);
- probability of a Pap test (women only); and
- probability of a PSA test (men only).

These preventive service measures were analyzed because the probability of receiving preventive services is, in part, a function of having an outpatient physician visit either because the beneficiary receives the service during the visit or because the physician makes a referral for the service. Although many beneficiaries may not face any cost sharing for certain preventive services (for example, flu immunizations), they still may be less likely to receive these services if they do not have a physician visit. Therefore, we wanted to explore whether we could observe a derived impact of any changes in access to outpatient physician visits on access to preventive care.

Our analyses of access to outpatient mental health treatment focused on eight dependent variables:

- probability of an outpatient mental health visit;
- number of outpatient mental health visits (logged, for those with at least one outpatient mental health visit);
- probability of a psychiatrist visit (for those with at least one outpatient mental health visit);
- number of psychiatrist visits (logged, for those with at least one psychiatrist visit);
- probability of a psychologist visit (for those with at least one outpatient mental health visit);
- number of psychiatrist visits (logged, for those with at least one psychologist visit);
- probability of a social worker visit (for those with at least one outpatient mental health visit); and
- number of social worker visits (logged, for those with at least one social worker visit).

The results of logistic regressions are reported as odds ratios, while parameter estimates are shown for the log-normal models. All models were estimated using weights for the portion of the year a beneficiary was eligible. Most regressions included

all beneficiaries that met the criteria for the sample and for the given model. Because of computer limitations, however, it was necessary to select a random sample of non-dually eligible beneficiaries for certain regressions—probability of an outpatient physician visit (60 percent sample), probability of a specialist visit (70 percent sample), and probability of a flu shot (60 percent sample). In these models weights reflect both the portion of the year a beneficiary was eligible and the inverse of the probability a given beneficiary was selected for the sample. Standard errors were adjusted to take into account this complex sample design.

A.2 Multivariate Results

A.2.1 Outpatient Physician Visit Results

Results of the regressions on utilization of outpatient physician visits are shown in Table A-1. Odds ratios are shown for all regressions other than the log number of outpatient physician visits, for which regression coefficients are presented. For categorical variables, the odds ratio is interpreted as the likelihood that a person with a given characteristic will receive a service relative to their comparison group. For example, the odds of having an outpatient physician visit were 10 percent higher in 1998 compared to 1996 (based on the YEAR 1998 odds ratio in Table A-1, column 1). For continuous variables, the odds ratios reported in Table A-1 represent the change in the

Table A-1

Access to Outpatient Physician Visits: Beneficiary-Level Regressions

	Outpatient Physician Visit (yes/no)	Logged Number of Visits (users only)	Specialist Visit (yes/no, users only)
Dual Eligible	1.23 **	0.116 **	0.78 **
Year 1998	1.10 **	0.054 **	1.08 **
Dual*Year 1998	0.99 *	-0.017 **	0.97 **
Proportion Paid 1996[a]	1.04 **	0.090 **	0.99 **
Dual*Proportion Paid 1996[a]	0.95 **	-0.208 **	0.98 **
Change in Proportion Paid[a]	0.98 **	-0.167 **	0.98 **
Dual*Change in Proportion Paid[a]	0.97 **	-0.107 **	0.98 **
Change in Proportion Paid*Year 1998[a]	1.00 **	0.011 **	0.99 **
Dual*Change in Proportion Paid*Year 1998[a]	1.01 **	0.002	1.00
Age:			
Less than 65 Years	0.46 **	-0.310 **	0.65 **
75-84 Years	1.27 **	0.136 **	1.26 **
85+ Years	0.63 **	-0.008 **	0.89 **
Female	1.38 **	0.044 **	0.96 **
Race:			
Black	0.64 **	-0.048 **	0.68 **
Asian-American	0.88 **	0.059 **	0.98 *
Hispanic	0.72 **	0.072 **	0.87 **
Native American	0.67 **	-0.031 **	1.01
Unknown	0.81 **	-0.067 **	0.78 **
Original Entitlement Due to Disability	1.07 **	0.202 **	1.16 **
Dual Eligibility:			
QMB Only	0.72 **	0.036 **	1.17 **
Medically Needy	0.53 **	0.010 **	1.09 **
Lives in MSA	1.17 **	0.163 **	1.40 **
N	10,418,987	12,269,090	9,105,426

[a] Odds ratio reported for logistic regressions is the change in the likelihood of receiving a service given a 0.10 change in the independent variable.

** Statistically significant at the .01 level

* Statistically significant at the .05 level

SOURCE: Medicare Part B and SMRF claims for nine states, 1996 and 1998.

likelihood of receiving a service given a 0.10 change (or a 10 percent increase) in the independent variable.[25]

As shown in Table A-1, increasing Medicaid cost-sharing payments had a modest impact on access to outpatient physician services for dually eligible beneficiaries, but no significant impact on the intensity of service use or access to outpatient specialist visits. The term DUAL*CHANGE IN PROPORTION PAID*YEAR 1998 was significant and positive (the expected sign) in the regression for the probability of an outpatient physician visit. Although changing Medicaid cost-sharing payments had a significant impact on utilization of outpatient physician services, the impact was modest. A 10 percent increase in the proportion of dual eligible cost-sharing liability reimbursed by Medicaid results in only a 1 percent increase in the likelihood of an outpatient physician visit.

The results for the DUAL variable indicate that at baseline, SSI-eligible dually eligible beneficiaries use more outpatient physician services than non-dually eligible beneficiaries. (Recall that additional variables discussed below compare SSI eligibles with QMB Only and Medically Needy dually eligible beneficiaries.) This reflects their poorer health status and lower income compared to the non-dually eligible. However, they are less likely to have a specialist visit.

[25] While odds ratios for continuous variables are typically reported as the change in the likelihood of receiving a service given a unit change in the independent variable, our continuous variables (PROPORTION PAID 1996, DUAL*PROPORTION PAID 1996, CHANGE IN PROPORTION PAID, DUAL*CHANGE IN PROPORTION PAID, CHANGE IN PROPORTION PAID*YEAR 1998, DUAL*CHANGE IN PROPORTION PAID*YEAR 1998) are measured on a scale from 0 to 1 or -1 to 1. In these cases, a change of 1 in these variables is too large to be meaningful. For example, a change of 1 in the variable CHANGE IN PROPORTION PAID*YEAR 1998 represents a doubling of Medicaid cost-sharing payments over time, which is far larger than the changes actually implemented.

The coefficients for the variable YEAR 1998 show that use of physician services increased over time for non-dually eligible beneficiaries. The likelihood of an outpatient physician visit increased by 10 percent between 1996 and 1998, and the likelihood of a specialist visit grew by 8 percent. The number of outpatient physician visits for those with some use increased by 5.4 percent over this time period. However, the coefficient for DUAL*YEAR 1998 is negative in all three regressions, indicating slower growth for dually eligible beneficiaries compared to non-dually eligible.

Results for the variable PROPORTION PAID 1996 show greater baseline use of outpatient physician services by non-dually eligible beneficiaries in states with higher levels of Medicaid cost-sharing payments, but a slightly lower probability of having a specialist visit. Larger changes in Medicaid cost-sharing payments (CHANGE IN PROPORTION PAID) are consistently associated with lower levels of baseline service use by non-dually eligible beneficiaries. Finally, the size of the Medicaid cost-sharing payment change is associated with a small, significant increase over time in use of outpatient physician services by non-dual eligibles and a slight decrease in the likelihood of a specialist visits (CHANGE IN PROPORTION PAID*YEAR 1998). Thus, states that decreased cost sharing payments by greater amounts were those where utilization of outpatient physician services by non-duals was decreasing over time. (The opposite is true for specialist services.) As noted above, these variables control for unmeasured differences across states that affect service use by the non-dual population. However, we do not hypothesize that there is a causal relationship between Medicaid cost-sharing payments and utilization by non-dually eligible beneficiaries. Assuming this trend for non-duals also applies to the dually eligible population, it is important to control for it so

that this general trend in utilization by Medicare beneficiaries is not attributed to cost-sharing payment changes.

The results for DUAL*PROPORTION PAID 1996 are counterintuitive, indicating that higher Medicaid cost-sharing payment levels significantly *reduce* access to physician services for dually eligible beneficiaries. However, as noted previously, this variable also captures unmeasured differences between our study states. The variable DUAL*CHANGE IN PROPORTION PAID had a significant negative effect in all three regressions—states with poorer access at baseline were less likely to reduce their Medicaid cost-sharing payments or reduced them by smaller amounts. Although these findings show an association between baseline access and a state's cost-sharing payment policy, we are not able to conclude that there is a causal relationship based on these analyses. Undoubtedly, many other factors may drive these policy decisions.

Beneficiaries under the age of 65 are less likely to see a physician or a specialist and have fewer outpatient physician visits than those age 65-74. It is surprising that older beneficiaries (those age 85 and over) also have lower levels of service use than 65-74 year olds. However, these beneficiaries are more likely to have been treated in a nursing facility and physician visits provided in these settings would not be included in our measure of outpatient physician visits. Females have more outpatient physician visits than males, but are less likely to use specialist services. The regression results mainly show lower levels of service use among minority populations compared to whites, although Asian-Americans and Hispanics use outpatient physician services more intensely than whites.

Beneficiaries who originally qualified for Medicare due to a disabling condition were 7 percent more likely to have an outpatient physician visits, had 20 percent more such visits (among those with at least one visit), and were 16 percent more likely to see a specialist than beneficiaries who qualified based on their age. These beneficiaries presumably have poorer health status and higher levels of need for care than those that were originally entitled on the basis of age.

Dually eligible beneficiaries that qualify as QMB-only have higher incomes than dually eligible beneficiaries that receive SSI. QMB-only beneficiaries are significantly less likely to have an outpatient visit than SSI eligibles; however, those with some use have more physician visits than SSI eligibles and they are more likely to have a specialist visit. Although medically needy dually eligible beneficiaries, who qualify by virtue of their high medical expenditures, would be expected to have higher levels of service use, the regression results show they are significantly less likely to have an outpatient physician visit compared to SSI recipients. Many medically needy beneficiaries reside in a nursing home and, as noted above, services provided in this setting are not captured in our outpatient physician visit measure. Medically needy beneficiaries are more likely to see a specialist, however.

Finally, residents of MSAs are expected to have better access to services than beneficiaries residing outside of urban areas due to the better supply of providers. Our analyses show that residents of MSAs are 17 percent more likely to have an outpatient physician visit, have 16 percent more visits (among those with any such visits), and are 40 percent more likely to see a specialist.

A.2.2 Preventive Service Results

Table A-2 presents regression results for access to preventive services. Odds ratios are reported for all four regressions. The interpretation of the odds ratios was described in the discussion of outpatient physician visit results above in Section A.2.1. As discussed previously, we hypothesize that utilization of preventive services is a function of access to outpatient physician visits. These regressions test whether any observed changes in the probability of receiving preventive services were associated with changes in Medicaid cost-sharing payments for outpatient physician visits.

There was generally no significant impact of changes in Medicaid cost-sharing payments on utilization of preventive services (DUAL*CHANGE IN PROPORTION PAID*YEAR 1998). The exception is mammography, where there was a significant, but small, negative impact. A 10 percent increase in the Medicaid cost-sharing payment is unexpectedly associated with a 1 percent *decrease* in the likelihood of a woman receiving a mammogram.

At baseline, dually eligible beneficiaries who receive SSI are significantly less likely to utilize preventive services compared to the non-dually eligible. The findings for the DUAL variable are especially striking for flu shots, mammography, and PSA tests, where the dually eligible are one-third or less likely to receive these services.

The time trend for non-dually eligible beneficiaries (YEAR 1998) in use of preventive services varies by type of service. The probability of receiving a mammogram increased significantly, by 68 percent. This likely reflects the impact of

Table A-2

Access to Preventive Services: Beneficiary-Level Regressions (odds ratios)

	Flu Shot	Mammography (women only)	Pap Test (women only)	PSA Test (men only)
Dual Eligible	0.68 **	0.67 **	0.92 **	0.58 **
Year 1998	1.00	1.68 **	0.89 **	0.87 **
Dual*Year 1998	1.07 **	0.84 **	1.04 **	1.06 **
Proportion Paid 1996[a]	1.02 **	0.95 **	1.04 **	1.02 **
Dual*Proportion Paid 1996[a]	0.99 **	1.00	0.96 **	0.93 **
Change in Proportion Paid[a]	1.03 **	0.96 **	0.98 **	0.98 **
Dual*Change in Proportion Paid[a]	0.98 **	0.99 **	0.97 **	0.94 **
Change in Proportion Paid*Year 1998[a]	1.00 **	1.03 **	1.01 **	0.99 **
Dual*Change in Proportion Paid*Year 1998[a]	1.00	0.99 **	1.00	1.00
Age:				
Less than 65 Years	0.45 **	0.75 **	1.05 **	0.34 **
75-84 Years	1.13 **	0.64 **	0.65 **	1.11 **
85+ Years	0.73 **	0.18 **	0.21 **	0.73 **
Female	1.05 **			
Race:				
Black	0.42 **	0.76 **	0.67 **	0.72 **
Asian-American	0.93 **	0.79 **	0.93 **	0.89 **
Hispanic	0.56 **	0.79 **	0.97 *	0.82 **
Native American	0.53 **	0.70 **	0.79 **	0.61 **
Unknown	0.77 **	0.87 **	0.97 **	0.91 **
Original Entitlement Due to Disability	0.84 **	0.79 **	0.81 **	0.67 **
Dual Eligibility:				
QMB Only	0.81 **	0.93 **	0.87 **	1.23 **
Medically Needy	0.70 **	0.70 **	0.66 **	1.14 **
Lives in MSA	0.94 **	1.01 **	1.19 **	1.97 **
N	10,418,987	9,032,264	9,032,264	6,723,779

[a] Odds ratio reported for logistic regressions is the change in the likelihood of receiving a service given a 0.10 change in the independent variable.

** Statistically significant at the .01 level

* Statistically significant at the .05 level

SOURCE: Medicare Part B and SMRF claims for nine states, 1996 and 1998.

Medicare campaigns to increase mammography utilization rates. However, the likelihood of receiving a Pap test and a PSA test fell by more than 10 percent between 1996 and 1998. There was no significant change in the probability of non-dually eligible beneficiaries receiving a flu shot. The coefficient for DUAL*YEAR 1998 is positive in the regressions for flu shots, Pap tests, and PSA test, indicating higher growth for dually eligible beneficiaries compared to non-dually eligible. In contrast, use of mammography grew more slowly for dually eligible beneficiaries compared to the non-dually eligible.

The relationship between baseline preventive service use by non-dually eligible beneficiaries and Medicaid cost-sharing payments varied by type of service. There was a significant positive relationship between Medicaid cost-sharing payments in 1996 (PROPORTION PAID 1996) and receipt of flu shots, Pap tests, and PSA tests by the non-dually eligible, but a significant negative relationship with mammography. In contrast, baseline use of mammograms, Pap tests, and PSA tests by non-dually eligible beneficiaries was significantly lower in states where Medicaid cost-sharing payments increased (CHANGE IN PROPORTION PAID), whereas use of flu shots was higher. The size of the Medicaid cost-sharing payment change is associated with a small, significant increase over time in use of flu shots, mammograms, and Pap tests, and a slight decrease in the likelihood of a man having a PSA test (CHANGE IN PROPORTION PAID*YEAR 1998).

The results for DUAL*PROPORTION PAID 1996 are in the opposite direction expected. Higher Medicaid cost-sharing payment levels are associated with significantly *lower* utilization of flu shots, Pap tests, and PSA tests. However, this variable also captures unmeasured differences between our study states so the relationship is not

necessarily causal. The variable DUAL*CHANGE IN PROPORTION PAID had a significant negative effect in all four regressions. As we found for outpatient physician services, states with poorer access at baseline were less likely to reduce their Medicaid cost-sharing payments or reduced them by smaller amounts.

The effect of beneficiary characteristics on use of preventive services varies by type of service. In general, beneficiaries age 65-74 are more likely to receive preventive services than those who are older or younger. However, women under age 65 are the most likely to receive a Pap test. This may be due to the greater probability that older women have had a hysterectomy and would be less likely to need Pap tests. Men age 75-84 were the most likely to have a PSA test. Beneficiaries in the 75-84 age group were also the most likely to receive a flu shot. Women are 5 percent more likely than men to have flu shots.

Minority Medicare beneficiaries are consistently less likely to receive preventive services compared to whites. The differences are particularly dramatic for flu shots, where blacks are only 42 percent as likely as whites to be immunized, Hispanics are 56 percent as likely, and Native Americans are 53 percent as likely.

Beneficiaries who originally became eligible for Medicare because of disability were significantly less likely to utilize preventive services compared to those who were originally eligible on the basis of age. While SSI beneficiaries were more likely than QMB-only and medically needy beneficiaries to have a flu shot, mammogram, and Pap test, they were significantly less likely to have a PSA test. The effect of living in a MSA differed for flu shots compared to the other preventive services examined. While residents of a MSA were 6 percent less likely to have a flu shot, they were 1 percent

more likely to have a mammogram, 19 percent more likely to have a Pap test, and nearly twice as likely to have a PSA test.

A.2.3 Access to Outpatient Mental Health Treatment

Table A-3 displays regression results for access to outpatient mental health treatment. Odds ratios are presented for the probability of having an outpatient mental health visit, a visit to a psychiatrist, a visit to a psychologist, and a visit to a social worker. The psychiatrist, psychologist, and social worker regressions include only users of outpatient mental health treatment. Regression coefficients are shown for log-normal regressions on the number of outpatient mental health visits, the number of psychiatrist visits, the number of psychologist visits, and the number of social worker visits. These regressions only include users of the respective types of outpatient mental health treatment.

The effect of DUAL*CHANGE IN PROPORTION PAID*YEAR 1998 varied across the models. There was a significant positive effect on the probability of a dually eligible beneficiary having an outpatient mental health visit and a psychiatrist visit, but a significant negative effect on the probability of having a social worker visit. There was no significant impact on the likelihood of having a psychologist visit. This indicates that reducing cost-sharing payments was associated with declining access to outpatient mental health treatment generally and to psychiatrists, but with increasing access to social workers for dually eligible beneficiaries. A 10 percent decrease in Medicaid cost-sharing

Table A-3

Access to Outpatient Mental Health Treatment: Beneficiary Level Regressions

	Outpatient Mental Health Visit (yes/no)	Logged Number of Visits (users only)	Psychiatrist Visit (yes/no)	Logged Number of Psychiatrist Visits (users only)	Psychologist Visit (yes/no)	Logged Number of Psychologist Visits (users only)	Social Worker Visit (yes/no)	Logged Number of Social Worker Visits (users only)
Dual Eligible	1.32 **	-0.068 **	0.62 **	-0.177 **	0.55 **	-0.342 **	2.05 **	0.204 **
Year 1998	1.04 *	-0.013	1.21 **	-0.021	0.84 **	-0.069	1.11 *	0.207 **
Dual*Year 1998	1.20 **	0.038	1.10	0.157 **	0.87	0.098	0.64 **	-0.366 **
Proportion Paid 1996[a]	1.00	0.377 **	1.01 **	0.164 **	1.18 **	0.550 **	0.85 **	0.478 **
Dual*Proportion Paid 1996[a]	1.17 **	1.030 **	0.88 **	0.353 **	1.38 **	1.587 **	0.88 **	-0.080
Change in Proportion Paid[a]	0.95 **	-0.468 **	1.07 **	-0.583 **	1.04 **	0.080	0.93 **	-0.515 **
Dual*Change in Proportion Paid[a]	0.99 *	0.114 **	0.94 **	-0.104 **	1.04 **	0.017	1.07 **	0.303 **
Change in Proportion Paid*Year 1998[a]	1.01 **	-0.017	1.04 **	0.006	0.96 **	-0.204 **	1.00	0.313 **
Dual*Change in Proportion Paid*Year 1998[a]	1.03 **	0.026	1.05 **	0.253 **	0.99	0.124	0.92 **	-0.461 **
Age:								
Less than 65 Years	2.28 **	0.201 **	1.23 **	0.216 **	1.01	0.270 **	0.84 **	0.037
75-84 Years	1.06 **	-0.068 **	0.85 **	-0.101 **	1.11 **	-0.132 **	1.18 **	-0.026
85+ Years	1.22 **	0.017	0.50 **	-0.257 **	1.64 **	-0.029	1.79 **	0.127 **
Female	1.44 **	0.080 **	1.01	0.022 **	1.01	0.099 **	1.17 **	0.132 **
Race:								
Black	0.82 **	-0.043 **	1.13 **	0.019 *	0.64 **	-0.028	0.91 **	-0.131 **
Asian-American	0.80 **	-0.226 **	0.81 *	-0.170 **	0.98	-0.358 **	1.08	-0.202 *
Hispanic	0.59 **	-0.121 **	1.03	0.010	0.79 **	-0.119	0.93	-0.098
Native American	1.20 **	-0.120	0.86	-0.001	1.01	-0.147	1.24	-0.370 *
Unknown	0.91 **	0.098 *	0.97	0.077	1.12	0.164	1.01	0.105
Original Entitlement Due to Disability	2.86 **	0.079 **	1.18 **	0.055 **	0.79 **	0.053	1.14 **	0.132 **
Dual Eligibility:								
QMB Only	1.25 **	0.157 **	0.84 **	0.053 **	1.18 **	0.118	1.46 **	0.183 **
Medically Needy	1.26 **	0.163 **	0.84 **	0.031 *	1.40 **	0.178 **	1.37 **	0.131 **
Lives in MSA	2.01 **	0.216 **	1.19 **	0.157 **	0.89 **	0.219 **	1.24 **	0.197 **
N	4,574,397	137,909	137,909	89,025	137,909	26,826	137,909	28,653

[a] Odds ratio reported for logistic regressions is the change in the likelihood of receiving a service given a 0.10 change in the independent variable.

** Statistically significant at the .01 level

* Statistically significant at the .05 level.

SOURCE: Medicare Part B and SMRF claims for three states, 1996 and 1998.

reduced the probability of having an outpatient mental health visit by 3 percent and the probability of a psychiatrist visit by 5 percent, while it increased the probability of a social worker visit by 8 percent. The differing direction of the effects suggests that there may have been a substitution of social workers for psychiatrists in response to the cost-sharing payment changes. These cost-sharing payment change effects are substantially larger than those seen in the outpatient physician visit and preventive service regressions.

Medicaid cost-sharing payment changes had a significant effect on the number of visits for those that received treatment from psychiatrists and social workers, but not on the number of outpatient mental health visits overall. In the regression for the number of psychiatrist visits, a 10 percent decrease in Medicaid cost-sharing reduced the number of visits by 2.5 percent. In contrast, a 10 percent decrease in Medicaid cost-sharing payments increased the number of social worker visits by 4.6 percent. These findings reinforce the evidence of substitution between social worker and psychiatrist services.

Dually eligible SSI beneficiaries are 32 percent more likely than non-dually eligible Medicare beneficiaries to have an outpatient mental health visit at baseline (DUAL). However, among those with mental health treatment, dual eligibles have fewer visits. SSI dually eligible beneficiaries use significantly fewer psychiatrist and psychologist services compared to the non-dually eligible, but significantly more social worker visits.

As indicated by the YEAR 1998 estimates in Table A-3, the probability of having an outpatient mental health visit, the probability of a psychiatrist visit, and the probability of a social worker visit increased for the non-dually eligible between 1996 and 1998. The number of social worker visits also increased significantly. In contrast, there was a

negative time trend in the probability of seeing a psychologist. The increase in the likelihood of having an outpatient mental health visit was significantly greater for dual eligibles compared to non-dually eligible beneficiaries (DUAL*YEAR 1998); however the opposite was true for the likelihood of seeing a social worker.

There was generally a significant positive relationship between 1996 Medicaid cost-sharing payment levels (PROPORTION PAID 1996) and baseline use of outpatient mental health services by non-dually eligible beneficiaries. There was significant negative relationship with the probability of having a social worker visit, however. Five of the eight outpatient mental health service regressions show a significant negative relationship between CHANGE IN PROPORTION PAID and utilization by non-dually eligible beneficiaries in 1996. There was a positive significant relationship with the likelihood of having a psychiatrist and a psychologist visit. Finally, the size of the Medicaid cost-sharing payment change is associated with a significant increase over time in the probability a non-dual eligible will use outpatient mental health treatment services and psychiatrist services, but a decrease in the use of psychologist services (CHANGE IN PROPORTION PAID*YEAR 1998).

The findings for DUAL*PROPORTION PAID 1996 indicate that higher Medicaid cost-sharing payment levels significantly increase access to outpatient mental health services generally, and to psychologist services in particular, for dually eligible beneficiaries. However, the likelihood that a dually eligible beneficiary will see a psychiatrist or a social worker is lower in states with higher cost-sharing payment levels. The variable DUAL*CHANGE IN PROPORTION PAID had a significant negative effect in the regressions for the likelihood of an outpatient mental health visit and the

likelihood of a psychiatrist visit, but a significant positive effect in the regressions for the likelihood of having a psychologist and a social work visit. States with poorer access at baseline to mental health treatment generally and to psychiatrist services in particular were less likely to reduce their Medicaid cost-sharing payments or reduced them by smaller amounts. States with better access to psychologist and social worker services also were less likely to reduce their Medicaid cost-sharing payments. To the extent that social worker and psychologist services substitute for psychiatrist services, these findings are consistent.

Beneficiaries under age 65 are more likely to use outpatient mental health services and use these services more intensively than those over age 65. While they are more likely to use psychiatrist and psychologist services, they are less likely to use social worker services. These patterns reflect the fact that a portion of the non-aged beneficiaries becomes eligible due to a disabling mental health condition. Indeed, after controlling for age, beneficiaries who were originally entitled to Medicare based on disability are significantly more likely than those originally entitled due to age to receive outpatient mental health treatment and to see a psychiatrist or a social worker, but they are less likely to see a psychologist. Among the elderly, those aged 65-74 are least likely to use any outpatient mental health treatment services. However, they are more likely to receive treatment from a psychiatrist and less likely to see a psychologist or social worker than those 75 and over.

Females are greater users of outpatient mental health services than men, as are whites compared to racial minorities. However, blacks are more likely to see a psychiatrist than whites and Native Americans are more likely to receive some treatment.

QMB only and medically needy beneficiaries are more likely to use outpatient mental health services and are more intensive users than SSI beneficiaries. Among the types of mental health service providers, they are less likely to see a psychiatrist and more likely to see a psychologist or social worker. Finally, with the exception of psychologist services, residents of MSAs are more likely than those living outside of urban areas to use outpatient mental health services and they use these services more intensively.