Access to Care Issues Among Qualified Medicare Beneficiaries (QMB)

Centers for Medicare & Medicaid Services

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Executive Summary

This report contains two studies to assess access to care for Qualified Medicare Beneficiaries (i.e., "QMB enrollees"). The first study entails qualitative interviews with beneficiaries to better understand access to care among QMB enrollees and whether QMB enrollees are inappropriately "balance billed" (charged the cost-sharing on Medicare-covered services). The second study investigated whether there is an association between state policies on reimbursement to providers for Medicare cost-sharing and QMB health service utilization.

The goal of the QMB program is to assure meaningful access to Medicare benefits for those elderly and individuals with disabilities with income under 100 percent of the Federal Poverty Level and limited assets. It does so by requiring Medicaid to cover Medicare Part A and Part B premiums as well as the cost-sharing per service for which a Medicare beneficiary is normally liable. However, federal statute allows states to limit reimbursement by paying the "lesser-of" Medicaid or Medicare rates, and most do. As a result, the existing financing mechanism often means the provider must forgo the cost-sharing amounts. By law, providers may not attempt to collect any cost-sharing from QMB enrollees. An unintended consequence of this policy may be that providers limit their patient pool to non-QMB enrollees, thereby having the effect of reduced access to routine health care among QMB enrollees.[1] This report includes both qualitative and quantitative findings that support the hypothesis that reduced coverage of cost-sharing reduces access to care for QMB enrollees.

Qualitative Study

In 2014 CMS contracted with The Lewin Group to conduct individual in-person interviews with beneficiaries to gain their perspectives on the topic of access and "balance billing" (i.e., the wrongful practice of providers billing and collecting cost-sharing from QMB enrollees for Medicare-covered services). The Lewin Group conducted 31 interviews across three states (Michigan, Ohio, and South Dakota) over the course of five days. The contractor used local community-based organizations and Independent Living Centers to recruit participants with known payment or access issues, who varied in age, race, ethnicity, gender, and functional status. These 2014 interviews revealed confusion about billing and payment of services. This study builds upon a prior focus-group study conducted in 2013, in which beneficiaries reported that balance billing by providers was relatively commonplace.

Three core findings emerged from the 2014 interviews:

1. Providers balance billed participants for Medicare cost-sharing
    - Most participants paid these bills
    - Unpaid bills were submitted to collection agencies
    - Erroneous billing occurred
    - Participants experienced challenges with the appeals process

[1] Medicaid also covers cost-sharing for non-QMB full-benefit dually eligible beneficiaries, who receive Medicaid payment of Medicare cost sharing as a Medicaid state plan benefit. Similar concerns have been expressed about the impact on access for this population when Medicare cost-sharing is not fully reimbursed. However, the focus and findings in this paper is on QMB population.

2. Participants found billing processes confusing or complex

When asked what other issues presented challenges to getting needed care, participants identified insufficient coverage for some needed services, especially durable medical equipment.

These findings reinforce those from the 2013 focus groups. They point to the need for continued education of providers on the prohibition against balance-billing QMB enrollees, as well as strengthening existing resources in place to assist beneficiaries who encounter these problems.

Quantitative Study

The quantitative portion of this report builds prior research in this area. A CMS-commissioned report in 2003[2] found a direct association between the percent of cost-sharing paid by Medicaid and access to physician outpatient visits. The extent of the reductions in Medicaid cost-sharing payments proportionately lowered the odds that a dually eligible beneficiary would have an outpatient visit. The report estimated that the change in Medicaid cost sharing from 1996 to 1998 lowered the odds of an outpatient visit by 3 percent in Alabama and California, and 5 percent in Michigan. Similar results were found for mental health outpatient services except that these effects were larger. Rather than a 1 percent reduction in outpatient service utilization for every 10 percent reduction in Medicaid cost-sharing, for mental health services the reduction in utilization was 3 percent for every 10 percent of reduction in Medicaid cost-sharing.

In 2014[3], the Medicaid and CHIP Payment and Access Commission (MACPAC) examined the effect of states' Medicaid payment policies for Medicare cost sharing on access to selected outpatient Medicare services for dually eligible beneficiaries with FFS coverage. MACPAC found that paying a higher percentage of Medicare cost sharing increased dually eligible beneficiaries' likelihood, relative to non-dually eligible Medicare beneficiaries, of having office and other outpatient evaluation and management (E&M) visits, using prevention services, and receiving outpatient psychotherapy. Likewise, MACPAC also found that paying a higher percentage of Medicare cost sharing decreased dually eligible beneficiaries' likelihood, relative to non-dually eligible Medicare beneficiaries, of using a safety net provider, such as a federally qualified health care center or rural health center. Similarly, for mental health services, higher state cost-sharing payments were associated with lower utilization of clinical social worker services but higher utilization of psychiatrist and psychologist services.

Even more recently, a 2015 study recently published in the New England Journal of Medicine found that increased Medicaid reimbursement to primary care providers, as mandated in the Affordable Care Act (ACA) for 2013-14, was associated with improved appointment availability for Medicaid enrollees among participating providers without generating longer waiting times.[4]

The quantitative study in this two-part report examines the relationship between state policies on Medicare cost-sharing and enrollee health service utilization under the QMB program. While a

[2] (Washington, DC: July 2003) "State Payment Limitations on Medicare Cost-Sharing: Impacts on Dually Eligible Beneficiaries and Their Providers". http://www.rti.org/pubs/StatePaymentLimits.pdf

[3] Medicaid and CHIP Payment and Access Commission [MACPAC] (Washington, DC: November 2014). "Effect of State Payment Policies for Medicare Cost Sharing on Access to Care for Dual Eligibles".

[4] Polsky, D, Richards, M, Basseyn, S, Wissoker, et al Appointment Availability after Increases in Medicaid Payments for Primary Care. New England Journal of Medicine; Feb 5 2015; 372:537-545.

few state Medicaid programs with "full" payment policies do cover this cost-sharing amount, the vast majority of states do not. In its March 2013 Report to Congress, MACPAC reported that, over time, an increasing number of states have adopted so called "lesser-of" policies. Most of that activity occurred after the 1997 Balanced Budget Act explicitly permitted states to limit their contributions to the lesser of either: 1) the full amount of Medicare cost-sharing, or 2) the difference between their Medicaid rates and the Medicare payment amount for a given service. In 1997, 12 states had lesser-of policies, and this number increased to 33 in 1999 and 47 in 2012.[5,6] Since this policy often lowers provider payment for QMB enrollees,[7] there is concern that the availability of and access to routine health care services will be reduced for QMB enrollees and that use of emergent services will be elevated.

To examine the relationship between state payment policy (full pay versus lesser-of) and access to care, this study evaluated patterns of service utilization among QMB enrollees and health acuity-matched Medicare-only enrollees in 17 states where payment policy information was readily available for 2009. More specifically, multivariate logistic regression methods were used to compare differences in the probability of using various services between QMB and Medicare-only enrollees in states with "lesser-of" pay policies against those differences in states with "full" payment policies.

This study focused exclusively on three categories of services: 1) Outpatient Services (Office Visit Services, Hospital Outpatient Services, and Mental Health Services); 2) Inpatient and Institutional Services (Hospital Inpatient Services and Skilled Nursing Facility Services); and 3) Potential Downstream Indicators of Limited Access to Care (Emergency Room Services and Hospitalizations for Ambulatory Care-Sensitive Conditions (ACSC)). Logistic regression analyses were performed to examine the relationship between a state's physician service payment policy and the probability that QMB Only and QMB Plus enrollees[8] use one of the services listed above within a particular timeframe after controlling for key covariates. To more easily interpret the potential impact of lesser-of payment policies, the statistically significant logistic regression results were used to simulate the probability of each QMB enrollee group utilizing each service in a particular timeframe, compared to the probability of an acuity-matched Medicare-only group using the service. The comparison group of Medicare-only enrollees was intentionally selected to mirror each state's QMB study group with regard to acuity level. The regression technique allowed for further controlling of for any remaining demographic and condition prevalence differences between the study and comparison groups.

The quantitative portion of this report found some differences between QMB enrollees who do (i.e., "QMB Plus") and do not (i.e., "QMB Only") receive the full spectrum of Medicaid benefits in addition to assistance with their Medicare cost-sharing requirements. The table below sums up these results and the text that follows provides the same information in narrative form. As seen in

[5] Medicaid and CHIP Payment and Access Commission [MACPAC] (Washington, DC: March 2013). "Report to the Congress on Medicaid and CHIP."

[6] https://www.rti.org/pubs/StatePaymentLimits.pdf

[7] This policy would not actually lower the payment in cases where the state Medicaid rate is similar to or higher than the Medicare rate. Although this is rarely the case, it is reasonable to assume that states adopting lesser-of policies generally do so with an expectation of savings.

[8] QMB Only enrollees are those who are eligible for Medicare Part A and B services, with all cost-sharing paid for by Medicaid. QMB Plus enrollees have the same cost-sharing benefit and are also eligible for Medicaid services in their state.

this table, among QMB Plus beneficiaries, there is decreased utilization of outpatient services in states with lesser-of policies as compared to states with full pay policies.

Table E.S.1. Impact on Service Utilization in Lesser-of States

	Relative to Medicare-only Beneficiaries, Likelihood of Using This Service Among those in Lesser-of States as Compared to Full Pay States	Relative to Medicare-only Beneficiaries, Likelihood of Using This Service Among those in Lesser-of States as Compared to Full Pay States
Type of Service	**QMB Only**	**QMB Plus**
Outpatient Services		
Office Visits	⇩	⇩
Hospital Outpatient	⇧	⇩
Mental Health	N.S.*	N.S.
Inpatient & Institutional Services		
Hospital Inpatient	N.S.	N.S.
Skilled Nursing Facility (SNF)	N.S.	⇧
Potential Downstream Indicators of Limited Access to Care		
Emergency Department	⇧	N.S.
ACSC Hospitalizations	⇧	N.S.

* "N.S" means that the differences found between enrollees in lesser-of and full pay states was not statistically significant.

1) Outpatient Services (Office Visit Services, Hospital Outpatient Services and Mental Health Services):

    a. QMB Plus enrollees were found by this study to be consistently less likely to use both office visits and hospital outpatient services compared to Medicare-only enrollees, and, as hypothesized, the relative likelihood (QMB Plus relative to Medicare-only) was lower in lesser-of states compared to full pay states. For mental health services, differences between full pay and lesser-of states were not statistically significant.

    b. This study found that QMB Only beneficiaries were consistently less likely to use office visit services relative to Medicare-only enrollees and, as hypothesized, the relative likelihood (QMB Only relative to Medicare-only) was lower in lesser-of states compared to full pay states. For hospital outpatient services, while QMB Only enrollees were consistently more likely to use these services relative to Medicare-only enrollees, contrary to expectation, the relative likelihood (QMB Only relative to Medicare-only) was higher in lesser-of states compared to full pay states. For mental health services, differences between full pay and lesser-of states were not statistically significant.

2) Inpatient and Institutional Services (Hospital Inpatient Services and Skilled Nursing Facility Services):

a. QMB Plus enrollees in lesser-of payment states were more likely to have a skilled nursing facility stay than Medicare-only enrollees, and as hypothesized, those in full pay states were less likely than beneficiaries in lesser-of states to have a skilled nursing facility stay. For inpatient services, differences between full pay and lesser-of states were not statistically significant among QMB Plus enrollees.

b. Among QMB Only enrollees, differences between full pay and lesser-of states were not statistically significant for hospital inpatient or skilled nursing facility services.

3) Potential Downstream Indicators of Limited Access to Care (Emergency Room Services and Hospitalizations for ACSCs):

a. For QMB Plus enrollees, neither emergency department services nor ACSC-related hospitalizations were statistically significant when lesser-of states were compared with full pay states.

b. QMB Only enrollees were consistently more likely to use emergency department services and to experience a hospitalization related to an ACSC relative to Medicare-only enrollees, and, as hypothesized, the relative likelihood (QMB Only relative to Medicare-only) was higher in lesser-of states compared to full pay states.

Conclusions

Between the qualitative and quantitative studies presented in this report, there appear to be health care access issues related to the existing policies related to cost-sharing requirements for QMB enrollees. The qualitative study found that in spite of laws aimed at protecting beneficiaries from being billed the Medicare cost-sharing, this practice is still in effect. Furthermore, there is much confusion in the beneficiary and provider communities as to the beneficiaries' cost-sharing responsibilities. The quantitative analysis adds to a small but growing compendium of literature suggesting that the lesser-of payment policy may have the effect of limiting access to primary, routine, and preventative care among QMB enrollees. In addition, just as the MACPAC study found elevated use of safety net providers among beneficiaries in lesser-of states, this study found slightly higher utilization of more acute care services such as SNF stays, emergency department visits, and ACSC-related hospitalizations.

I. Introduction

In some states, Medicaid payment policy causes providers to experience a reimbursement gap that may reduce their willingness to provide services to QMB enrollees and other Medicare-Medicaid enrollees. As of February 2013, 10.7 million individuals qualified for both Medicare and Medicaid.[9] For 64.6% of these Medicare-Medicaid enrollees, Medicaid provides assistance for meeting Medicare's cost-sharing requirements through the Qualified Medicaid Beneficiary (QMB) program.[10] The QMB program was designed to ensure full access to the Medicare benefit for the lowest income enrollees by covering these costs. However, since states are not required to pay the full amount of these costs if the total payment (including both the Medicare portion and the state's portion) exceed the state's Medicaid rate for that service, there is concern that providers may ultimately limit their patient pools to those who are not QMB enrollees and thus limited access to health care services might be an unintended consequence of the QMB program. In 2012, 46 states and the District of Columbia did not cover the full amount for at least one type of service.[11]

The purpose of this study is to examine the relationship between a state's level of coverage for Medicare cost-sharing and the likelihood of QMB enrollees utilizing various services in that state. This study used Medicaid and Medicare 2008-2009 enrollment and claims data, in the context of varying state payment policy, to answer the following research question:

> What is the relationship between a state's payment policy for Medicare physician service cost-sharing (lesser-of or full) and QMB enrollees' probability of utilizing routine and preventative as well as more emergent health care services?

This report evaluates the potential effect of state policy on QMB enrollees through data and policy analysis. The analysis of the relationship between the choice of a lesser-of or full policy for physician service cost-sharing and measures of utilization, ACSC hospitalizations, and emergency room (ER) visits provides suggestive evidence of the extent to which payment rates correspond to QMB enrollees' access to Medicare services.

[9] See the Medicare-Medicaid Enrollment and Eligibility Trends report at http://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Analytics.html.
[10] Ibid.
[11] MACPAC (2013).

II. Background

A. Qualified Medicare Beneficiaries – Eligibility

Qualified Medicare Beneficiaries (QMB enrollees) are the largest eligibility group within the Medicare-Medicaid enrollee population,[12] comprising 6.9 million or 64.6% of the 10.7 million individuals who qualified for both programs in 2013.[13] Individuals can qualify for the QMB program if their income is below 100 percent of the Federal Poverty Level ($11,670/year in 2014) and have assets of no more than $7,160/$10,750 (one person/married couple, again in 2014). They apply for this benefit with their state's Medicaid program, and must be redetermined eligible at least annually. States have discretion to disregard certain income and assets, effectively making those criteria more generous.[14,15,16]

Enrollees who meet the QMB program's qualifying criteria fall into two groups: "QMB Only" and "QMB Plus." QMB Only beneficiaries are entitled to QMB cost-sharing support for Medicare benefits, but do not qualify for any other Medicaid benefits; QMB Plus enrollees qualify for both QMB cost-sharing support and all services provided by their states' full Medicaid programs. Of the 6.9 million QMB enrollees in 2013, 5.5 million (79%) were QMB Plus, while 1.4 million (21%) were QMB only.[17] Minimally, state requirements for QMB eligibility include enrollment in Medicare Part A, an income at or below 100% of the Federal Poverty Level (FPL) and assets that do not exceed the limits for the Part D low income subsidy (LIS) program.[18]

An important component of the QMB program is protection against balance-billing for enrollees. This means that providers are prohibited from billing QMB enrollees for the remainder of their bills that are not covered by Medicare. Section 1902(n)(3)(B) of the 1965 Social Security Act, as modified by Section 4714 of the 1997 Balanced Budget Act, outlines this prohibition for Medicare providers serving QMB enrollees.[19,20] However, the law gives states the option of ***limiting reimbursement*** to doctors and other health care providers with the net result being that providers may not receive the full amount of Medicare's cost-sharing charges.[21] Despite these provisions, some Medicare providers unlawfully bill enrollees for the balance of services after all program payments are received. Enrollees receiving the bills may also be unaware of this protection, as found by the qualitative portion of this study.

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[12] http://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Downloads/MedicareMedicaidEnrolleeCategories.pdf

[13] See the Medicare-Medicaid Enrollment and Eligibility Trends report at http://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Analytics.html.

[14] http://www.medicaid.gov/Federal-Policy-Guidance/Downloads/CIB-01-23-2015.pdf

15 Burke & Prindiville (2011).

[16] http://www.medicaid.gov/Federal-Policy-Guidance/Downloads/CIB-01-23-2015.pdf

[17] For the national and state-specific Medicare-Medicaid statistical profiles, see http://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Analytics.html.

[18] http://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Downloads/MedicareMedicaidEnrolleeCategories.pdf

[19] http://www.medicaid.gov/federal-policy-guidance/downloads/CIB-01-06-12.pdf

[20] http://www.ssa.gov/OP_Home/ssact/title19/1902.htm

[21] For more background, please see the following report: Medicaid and CHIP Payment and Access Commission [MACPAC] (Washington, DC: July 2003) "State Payment Limitations on Medicare Cost-Sharing: Impacts on Dually Eligible Beneficiaries and Their Providers".

B. QMB Benefits

Once determined to be eligible for QMB benefits, enrollees do not have to pay the monthly Medicare Part B premiums, Medicare Parts A and B deductibles and coinsurance, and any Medicare Part A premiums they might owe if they have not qualified for premium-free Part A coverage. The state Medicaid program covers Medicare premium costs in full and all cost-sharing amounts to the extent consistent with their State Plan. These benefits are summarized in **Table 1**.

QMB enrollees also qualify for the full low-income subsidy for the Medicare Part D prescription drug benefit, including monthly premiums up to a given benchmark; no annual deductible; and nominal copayments per covered prescription. Unlike for Parts A and B, the QMB her/himself is liable for Part D copayments per prescription, and for premium amounts above the level covered by the low-income subsidy.

Table 1. Medicare-Medicaid Annual Eligibility Status

Medicare-Medicaid Annual Eligibility Status	Medicaid benefits	Medicare Premium Subsidy	Medicare Cost Sharing Assistance	Medicare Part D Low Income Subsidy
Qualified Medicare Beneficiary (QMB Only)	No	Part A, Part B	Yes	Yes
Qualified Medicare Beneficiary Plus (QMB Plus)	Yes	Part A, Part B	Yes	Yes
Medicare-only Beneficiary	No	No	No	No

C. Lesser-of Pay Policy

The QMB benefit operates by having Medicaid "buy in" for individuals' Medicare Parts A and B premiums, and reimburse providers for annual deductibles and co-insurance per service.

The 1997 Balanced Budget Act, however, clarified that a state is not obligated to pay providers up to the full amount of Medicare cost sharing if the total payment (including both the Medicare portion and the state's portion) would exceed the state's Medicaid rate for that service.[22] Instead, states may limit their reimbursement to the lesser of two amounts: the full amount of Medicare cost-sharing, or the difference between the Medicaid rate and the amount already paid by Medicare. The vast majority of states limit Medicare cost sharing payment levels for QMB enrollees and other full-benefit dually eligible beneficiaries at their Medicaid rates.[23]

In states that adopt this "lesser-of" policy, providers ultimately may not be reimbursed the full amount for their services to QMB enrollees. This reimbursement gap results from the interaction between federal and state payer obligations in states with a lesser-of policy. In general, Part B providers are paid 80% of a service's Medicare rate by the federal program.[24] A non-QMB Medicare enrollee would receive the bill for the balance. However, due to the prohibition of balance-billing to QMB enrollees, a Medicare provider would instead bill the balance to its state Medicaid program, which is only required by federal statute to cover a service up to its Medicaid

[22] Burke & Prindiville (2011); Carpenter (1998).
[23] MACPAC (2013).
[24] Burke & Prindiville (2011).

rate. This means that when the Medicare payment exceeds the Medicaid rate, states have no obligation to pay any amount, resulting in providers receiving a lower payment than they would have likely received from a non-QMB beneficiary to whom they could directly bill the 20% portion not covered by Medicare. For example, if Medicare allowable amount for a service is $100, and the beneficiary liability is 20%, then Medicare's share is $80 and the beneficiary's share is $20. However, if a state's Medicaid reimbursement for the service is $82, it only need pay $2 of the beneficiary cost-sharing; if a state's reimbursement is lower than Medicare's share – e.g., $76 -- it need not reimburse the beneficiary share at all.

A real-world example is also instructive. In one state, coverage for QMB cost sharing is limited to Medicaid rates.[25] For example, if a QMB attended an outpatient office visit in 2011 as a new patient, the Medicare-approved rate for the service would be $225.45. Medicare would pay 80% of the rate, or $180.36. The provider would be left with a balance of 20% of the service rate, or $45.09, and would be prohibited from billing the QMB. At the same time, the Medicaid rate for the same service is $82.70, significantly lower than the amount already paid by Medicare. Thus, legally, Medicaid's financial obligation would have already been met, and the provider would be left with no source of payment for the remaining $45.09.[26] In contrast, if this state operated a full payment policy, Medicaid's financial obligation would be the difference between Medicare's payment and the rate it charges for a given service: $45.09 in this scenario.

As this situation plays out across the country, providers recognize the gap between the payment they would receive from a Medicare-only beneficiary, whom they could bill directly for the 20%, as compared to a QMB Medicare-Medicaid enrollee. Providers not enrolled in Medicaid may also face administrative challenges in billing Medicaid for QMB enrollees and may have claims rejected.[27] As a result of these factors, some providers have been found to refuse service to QMB enrollees.[28]

For calendar years 2013 and 2014 only, state Medicaid programs have been required to pay primary care providers at Medicare rates, and by regulation, this was expanded to states' reimbursement for Medicare cost-sharing for primary care providers for QMB enrollees. The cost increase for states was offset by a 100% matching rate by the federal government. However, and in spite of these efforts, it is possible that Medicare-Medicaid QMB enrollees with chronic conditions requiring specialist care may continue to experience limited access to specialist physicians during the window of this temporary provision.[29] Moreover, the Medicaid primary care increase expired at the end of 2014.

D. Variation Across States

In March 2013, Medicaid and CHIP Payment and Access Commission (MACPAC) conducted a study of existing policies in all 50 states and the District of Columbia.[30] State policies were grouped by provider type into three categories: "full payment," in which the state contributes up to the service's full Medicare rate; "lesser-of," in which the state pays the lesser of the two

[25] Ibid.
[26] Ibid.
[27] Ibid.
[28] Ibid.; Mann (2013).
[29] Burke & Prindiville (2011).
[30] MACPAC (2013).

amounts described previously; and "other," in which the state payment policy follows a some other pattern, such as a fixed percentage of the cost sharing amount.

State Medicaid payment policies have also changed over time. The same MACPAC study showed that more states have adopted lesser-of policies over time, with most of that activity taking place after the 1997 Balanced Budget Act explicitly permitted states to limit their contributions to the difference between their Medicaid rates and the Medicare payment amount for a given service. In 1997, 12 states had lesser-of policies; by 1999, this number had increased to 33 and by 2012, 46 states and the District of Columbia had adopted lesser-of policies.[31]

E. Implications to Beneficiaries

Even for QMB enrollees who meet the requirements for Medicare cost-sharing assistance, state policies that permit lower levels of Medicaid payment for these enrollees can make it difficult for QMB enrollees to utilize their Medicare benefits fully. Specifically, the presence of a reimbursement gap may cause some providers to refuse to accept QMB patients, leading to beneficiary difficulty in locating willing providers and obtaining needed care in a timely way. Access may also be limited indirectly due to provider behavior and beneficiary misunderstandings of their rights under the QMB program. If a beneficiary receives a balance bill from their provider, they may not understand that they are not legally required to pay it, and they may curtail their use of needed services due to concerns about their ability to pay. In addition, enrollees may limit use of services even without providers actually sending them a bill if they are unaware that they cannot be asked to pay the portion of charges that Medicare does not pay.

Providers may face additional operational challenges related to receiving reimbursement for cost-sharing. States that do cover some degree of Medicare cost-sharing can only reimburse providers who are enrolled as Medicaid providers; however, some providers who do not serve Medicaid-only beneficiaries have been unwilling to enroll in their state Medicaid program.

The Medicare program reimburses certain Part A providers (e.g., Skilled Nursing Facilities (SNFs) and hospitals) for a portion of the deductibles and coinsurance that cannot be collected from beneficiaries.[32] Similarly, both Medicare and Medicaid reimburse disproportionate share hospitals for certain costs, including certain uncompensated costs. However, providers have to provide a remittance advice from the state Medicaid program showing reduced or no coverage for the cost-sharing, but cannot get one if they are not enrolled as a Medicaid provider. This may be exacerbated if they provide a Medicare-only benefit that is not also offered by Medicaid, e.g., long term care hospitals.[33, 34]

This can lead to problems not only with billing but also with doctors' decisions to accept new patients or continue seeing existing patients. This issue is one of several persisting issues that QMB enrollees encounter. **Table 2** provides an overview of billing-related issues at both the provider and systems level that impact payment and health care access for many QMB enrollees.

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[31] More information, as of January 2015, is available at the following website: https://www.macpac.gov/publication/state-medicaid-payment-policies-for-medicare-cost-sharing-2012/

[32] 42 CFR §413.89.

[33] http://www.medicaid.gov/Federal-Policy-Guidance/downloads/CIB-06-07-2013.pdf

[34] http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE1128.pdf

Table 2. Billing-related issues Impacting Payment and Health Care Access for QMB Enrollees

Health Care Provider Level	Systems Level

• Some providers do not accept Medicaid; therefore, they will not accept QMB enrollees as new patients
• Some providers bill QMB enrollees for Medicare deductibles and coinsurance charges
  ▪ Unaware of legal protections for QMB enrollees
  ▪ "Law requires me to collect coinsurance"
  ▪ Unaware of special billing procedures to collect reimbursement for QMB claims from state Medicaid office
• Some providers do not participate in Medicaid and cannot submit reimbursement claims
• Some providers may drop QMB enrollees as patients
  ▪ Low Medicaid reimbursement rates at state level (compared to Medicare rates) contribute to problem where state pays the "Lesser-of" Medicaid or Medicare rate (see next column)
• Focus groups from 2013 suggest this can be a particular problem for Medicaid beneficiaries transitioning to Medicare-Medicaid enrollee status
	• Medicaid gives states the option of limiting reimbursement to providers for the entire Medicare cost-sharing amount:
	  ▪ States can pay the lesser of (1) the difference between the full Medicare rate and 80% of the full Medicare rate or (2) the Medicaid rate for the service or procedure
	  ▪ Providers must "write-off" unpaid amount
	• Many providers appear unaware of the procedures for securing reimbursement for QMB claims
	• The statute referenced above supersedes Section 3490.14 of the "State Medicaid Manual," which is no longer in effect and may be causing confusion about QMB billing[35]

[35] https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE1128.pdf

III. Qualitative Study

A. Objective

This study sought to understand the Medicare-Medicaid enrollee experience with billed services generally and the prohibited practice of "balance billing". Typically, balance billing refers to the prohibited practice of billing beneficiaries for the difference between the original amount the provider charges for a Medicare-covered service and the allowed amount that Medicare pays. In general and in this report, when the subject is QMB enrollees, the term balance billing actually refers to the prohibited practice of a provider billing the enrollee for Medicare cost-sharing.[36]

This study builds on a 2013 CMS focus group study to better understand the information needs, experiences, and program knowledge of new Medicare-Medicaid enrollees and the variation between subpopulations. The 2013 focus groups revealed general confusion regarding Medicare and Medicaid, confusion around eligibility and enrollment for Medicare and Medicaid, and a lack of program knowledge. An overwhelming number of focus group participants also shared frustration and expressed confusion specifically around appropriate billing and service payment. Using the 2013 findings as a starting point, this 2014 study employed Medicare-Medicaid enrollee interviews with individuals who had experienced such challenges. This study also builds on previous work showing beneficiary confusion regarding cost sharing obligations as well as beneficiary experience of being billed inappropriately by providers.[37]

Despite federal regulation prohibiting Medicare providers from billing QMB enrollees for Medicare cost-sharing, these interviews show balance billing persists. Individuals are choosing to either pay the bills to retain access, or have sometimes forgone needed medical care. This report summarizes the methodology for the enrollees interviewed, and a synthesis of study findings.

B. Methodology

This qualitative study employed individual beneficiary interviews rather than focus groups in order accommodate the unique nature of each billing issue and the variation in payment status. The full methodology is found in Appendix A.

The 31 participants included full and partial benefit Qualified Medicare Beneficiaries whose Medicare cost-sharing was covered by Medicaid and who were known to have had existing access and/or billing issues. Participants ranged in age from 27 to 94 years. More than 70% reported a physical, mental, or emotional condition that resulted in difficulty completing errands. More than half had three or more doctor visits in the last six months, and almost 40% had a hospital admission in the last six months. More than two-thirds rated their health as fair or poor. Over half lived either in their own home or apartment. Compared to the overall Medicare-Medicaid enrollee population, there were fewer Hispanic participants in the sample (3% vs. 14%) and slightly more African American participants (26% vs. 21%). Both groups were comparable in age distributions. Finally, the percentage of female participants was somewhat less than the

[36] https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNMattersArticles/downloads/SE1128.pdf

[37] Walsh E.G. and Clark W.D. Managed Care and Dually Eligible Beneficiaries: Challenges in Coordination. Medicare & Medicaid Research Review. 2002 Fall; 24(1): 63–82. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4194785/

overall enrollee population (55% vs. 60%). Appendix B details the characteristics of the participants.

C. Findings

The findings from this qualitative study spanned three overarching themes:

- Providers balance billed participants
- Participants found billing processes confusing or complex
- Insufficient coverage exists for some needed services

This report includes verbatim dialogue from participants, across a wide range of responses, even if their perceptions and interpretations contained erroneous information. This report contains no alterations to the content other than to redact names of agencies or individuals.

While the majority of the information collected focused on balance billing, participants discussed other Medicare and Medicaid issues. For example, as captured in the findings, several participants shared frustration with access to and the quality of durable medical equipment (DME). Others discussed fear of losing benefits or access to critical services such as home health services.

C.1 Providers Balance Billed Participants

Participants cited balance billing as an issue that negatively affected them and their family members. A range of experiences exemplify how balance billing can affect this population. While many participants simply paid the balance bills, some chose to forgo needed services because of an inability to pay the medical bills. Several participants entered the appeals process, and others experienced harassment from collection agencies due to unpaid balances. Participants also provided a few examples of erroneous billing.

C.2 Most Participants Paid Balance Bills

Most of the participants simply paid the balance bills received. They moved forward with payment for a variety of reasons (e.g., they were unaware of prohibited billing, they tired of "fighting the system," or they worried about the impact on their health care or their relationships with providers if they did not pay the bills).

> *"I just got a $32 bill from the hospital for something I know nothing about and I just paid the damn thing."*
>
> *"My son was in a bad accident many years ago. I took care of him here [her home] for as long as I could. He's on Medicare and Medicaid in the nursing home. Every time he needs care, they send him a bill. He goes to the dentist and he gets a bill. He gets blood work and they send him a bill. He only gets $60 a month, so I take the bills and pay them. I keep telling the people at the nursing home to talk to me before they schedule an appointment because these bills aren't right and I can't keep paying them."*
>
> *"I received two bills that I know I should not have received. I was sick and I needed the care, so I just paid them."*
>
> *"The doctor sent me for x-rays. I got a bill for $410. I went on a payment plan to pay it off. It's paid off, so the bills have stopped."*

"My medical bills never seem to be right. I often get bills that I should not be receiving. I get so frustrated fighting the system that I just pay them. I am a master at going without things that I need."

"Every time I visit the doctor I get a bill for $15.27. I know I should not be receiving these, but I don't want to 'rock the boat'. The doctor is in walking distance, so I don't need to take public transportation. That saves me a lot because my income is only $329 a month. I ultimately do not know what I should and shouldn't pay? I really feel anxious. I do not know what is going to happen with my health care. My food stamps were just cut. So you never know."

"Pretty much Medicare wants us dead. I go to the doctor when they tell me to. I've been doing the same thing for the last 20 years. Out of the blue I get a bill from my doctor. I get the summary from Medicare. Why I don't know, it just wastes paper. It seems like everything should have been covered. I paid the damn thing because I need my health care. I just think the new girl screwed up. Six months later I go back, and I get another bill. I called the doctor. The girl said Medicare was cut so I have to pay the difference. It's part of that Obamacare."

Two participants specifically mentioned stopping needed medications to save money or to stop bills. The first quote below is from a participant who came to the attention of the advocacy organization when he filed for bankruptcy due to medical bills. Per the advocate, he should not have received most of the bills.

"Honestly, I have so many health problems. I have diabetes. I have thyroid problems. I had a stroke. I am on dialysis. They tell me I need a bone scan for $3,500. I can't afford it. Already my brother pays for my Depends and my dad pays for my tooth paste and other things. My dad is in his 90s and won't be around much longer. When he dies, I absolutely don't know what I will do. I have cut back on some of my medications to save money. The case worker looks at my case and doesn't know what to do. She just puts up her hands and stops returning my calls. Legal Aid has sent letters to my bill collectors and they are helping me resolve the mess."

"They kept giving me pills I didn't need and each time I would get a bill. It is all about the money for doctors. I stopped taking the pills and the bills stopped coming."

One participant was well aware that balance billing was prohibited and confronted the provider directly.

"I have always had good doctors. I go in, give them my cards, and everything is good. My doctor just retired so I have this new doctor. I went to see her for the first time. Do you know what, I got a bill. I went straight to their office and said, 'You !(@#*@^, this is against the law.' I threw the bill down and left."*

C.3 Providers Sent Unpaid Balance Bills to Collection Agencies

For a few participants, providers submitted unpaid bill balances to collection agencies.

"I have never received a bill. My doctors have always been so good. I got an eye infection. I went to urgent care and they sent me to the specialist. I paid a $10 co-pay. Now I keep getting bills for my outstanding amount. I called Medicare and they said I shouldn't have gotten bills. Yesterday I got this bill and it says it's going to collections. [Beneficiary showed a copy of the bill.] I have to go back to the doctor because my eye is bothering me, but I just can't because I'm scared I will get another bill. I only make $644 a month."

"In 2011, I received blood work. I was told everything would be paid for by Medicare and Medicaid. In 2013, I received a $30 balance bill for the 2011 blood work. Can you imagine? I paid the bill, but called

the 800 number on the back of my Medicare card [showed the card] to complain and to understand why I was getting a bill. I know it is against the law for them to bill me. The representative said that the lab had used the wrong code and I would be reimbursed. Several months passed without reimbursement or communication from Medicare. In the meantime, I received a second and third $30 bill for the same 2011 blood work. Shortly after I got the third bill, a collection agency started bothering my wife and me. I called Medicare, Social Security, the lab, and the hospital. [The participant brought his telephone log and he annotated 46 telephone calls attempting to resolve this issue.] Three separate times Medicare asked me to send them a copy of my original $30 check that was cashed by Medicare. Each time I went to bank I had to pay to get a copy. I still haven't received my money." [The SHIP counselor verified that he would eventually receive his $30.]

"I had a screening mammogram. I showed the girls at the office my card and they assured me they accept Medicare and Medicaid. Several months later, we got a Medicare summary that said my bill was submitted and paid. Then I got a bill from clinic that said my balance payment was $87.50. I showed my niece and she said not to pay because it is against the law. Then I got a statement that said everything was being turned over to collections. My niece said she will keep fighting for me."

C.4 Erroneous Billing Occurred

Several participants experienced errors related to balance billing.

"My son had me move back here [MI] from TN. I needed a hematologist. I've been going to one for years and never had a problem. My sister-in-law said she loves her hematologist, so I went to him. He said my iron was very low and I needed monthly treatments. Every time I went I would get a bill for $400. I needed the treatment because my veins were busting. I had $770 in my account so I paid it. My son said I couldn't afford that much, so I got on a monthly billing plan. The only place I could cut was my food budget. And you know what? My food stamps are being cut. Then one day, I got a knock at the door and it was two FBI agents. They wanted to know all about my experience with my doctor. I told them everything. Now he's in jail. I saw him arrested and hauled away on the news."

"My wife received an x-ray for something, I can't remember what, and we received a bill for $100. We should not have received a bill. I called Medicare and asked why my wife received a bill. They wanted to talk to my wife, but she doesn't speak English. The Medicare person said we got a bill because she received a digital x-ray and patients are responsible to pay $100. I told them we didn't request a digital x-ray and we can't afford the bill. The person on the phone told me I should look at the Medicare Handbook. Well, I did. It says in the Handbook that there is a $100 co-pay when digital x-rays are used. So, I paid the bill. But listen to this; I needed an x-ray for my foot. I went to same clinic as my wife. I asked the technician if her machine was digital. She said they don't have a digital machine, but it would be really nice. How can they bill for something they did not do? I called the Medicare line again and requested my $100 back." He threw up his hands and said, "I just can't get a response from CMS."

Balance billing of participants occurred despite regulations prohibiting the practice. Although the amount of some balance bills may seem nominal, the impact of a bill for even $10 or $15 had an effect on participants. Regardless of the amount, participants and their families spent a great deal of time and energy trying to understand and correct potentially erroneous bills.

C.5 Participants Endured the Appeals Process

Several participants entered an appeal once they learned about the prohibition against balance billing Medicare-Medicaid enrollees. They either noted a long waiting period for reimbursement or still awaited payment at the time of the interview.

"For 20 years I have been taking my father for preventive care. He has a family history of horrible cancers. Suddenly we started to get bills from the doctor for the balance. My dad paid them. When he ran out of money a few months ago, I realized what happened. I fought tooth and nail for months to get his money back. I finally turned to an advocate as I didn't know what to do anymore. The matter is still pending. I think it is shameful that information about Medicare and Medicaid has to be run by volunteers."

"I went to Walgreens to get my flu shot. I am on Medicare and Medicaid, so it was supposed to be free. I got a bill and had to pay $25. I called Medicare and they said they would send me $12 back. I haven't seen a dime." [The SHIP counselor verified that the older participant should not have received a bill. This has been a recurring problem for many Medicare and Medicaid beneficiaries.]

"I collapsed so my neighbor called an ambulance. I got a bill for $595. I thought my insurance would pay for it. Bills for the ambulance kept coming. I could not pay. Then the bill collectors started to call me day and night. I called Medicare and they told me to go to the local lady [SHIP counselor]. I went to the lady and she was so helpful. I told her that CVS won't give me my medication unless I pay $53.00. She told me I shouldn't pay anything for the ambulance and I shouldn't pay anything for my medications. She helped me file an appeal."

C.6 Participants Found Billing Processes Confusing or Complex

Although participants lacked some knowledge about coverage and billing, those who inquired about bills or payments found the billing processes very confusing or complex. Their quotations below illustrate unique and complex experiences.

"I needed diabetic shoes. They cost $474 dollars. Medicare paid $305 and my other card paid $174. When I got the shoes, they did not fit. I returned them. Then I got a bill for $474. I called the shoe company. They had no record of me getting the shoes. I filed an appeal. Then I got a bill from the shoe company in the amount of $453.98 with a different claim number. Then I got another bill in the amount of $458.47 with yet another claim number. I filed another appeal. Medicare denied my appeal. I have no shoes and bills for something that insurance originally paid for. This mess has consumed me." [For two years, this participant was overbilled for her Medicare Part B premium. At the time of the interview, she had a $3,535.10 credit in an account she referred to as "my CMS account."] "I called Medicare and I talked to a representative. I told the lady on the phone that I wanted my money back in a lump sum payment. She said that my money is in a CMS account and they don't give money back like that. I told her it was my money. She said they would apply my credit to my $115.80 monthly premium. Once the credit was spent, I would have to resume paying my monthly premium. I told her I was 94 years old and I would be dead before I got money back. I want my money now so I can help my son with his bills in the nursing home. I have tried calling the same representative back, but someone is always filling in for her."

"She needs portable oxygen. The company gave her a portable machine so she could go out to the dining room, do her laundry, and walk around the assisted living facility. The machine has not been working. The company picked up the machine, fixed it, and returned it several days later. It failed to work. I called the oxygen supply company and they blamed it on my grandmother – that she didn't know how to run the machine. There was one button on the machine. It didn't work for me either. The nurse couldn't get it to work. I called the oxygen company again. They said the paperwork to get a new

machine was too time-consuming and complicating and if we wanted a different machine we would have to pay for it. Apparently she was at month 18 of her 24-month billing period. Her income is only $700 per month. I went online thinking I would purchase a machine for her. The machines were anywhere from $12,000 to $18,000. I was devastated because she can't leave her apartment without the little machine and I can't afford to buy one. I called Medicare because I was so confused and so mad. The Medicare office sent me to four different individuals who all provided a different explanation about the 24-month cycle. Quite by chance I ran into a different oxygen provider at the grocery store, she was wearing a jacket with the company logo. She explained to me the complex billing cycle for oxygen and she would verify my grandmother's situation when she got back to the office. She called me back and explained that indeed, she was in the latter part of a 2-year billing cycle and they would not take us on as a new client. However, we could rent a machine from her company for $89/month until we reached the end of the billing cycle and could start over new again. What a farce and these poor old people are supposed to figure this out."

The complex nature of the billing processes resulted in participants sometimes receiving conflicting messages about bills and payments. Participants expressed frustration with the processes and concern about potential impact on access to services.

C.7 Insufficient Coverage for Needed Services Exists

An additional theme that surfaced among participants was dissatisfaction with service coverage. Participants shared frustration with the quality of DME and the need to pay out-of-pocket for repairs or items not covered under their benefits.

"My income is $1,061 per month. Out of that I pay my mortgage, car insurance, gas, food and other daily living needs. I never felt right about applying for food stamps. They never cover hygiene products. The feds never think about anything preventive in nature. I have so many problems with drugs. Right now, I have two drugs that work perfectly and they are no longer being covered. For example, I am a quad so I need enemas. Medicare and Medicaid will no longer pay for them. I will have to pay for them myself. Another thing is my shower chair. My chair was over $800. The prices are just crazy and most of the equipment is just crap. I spend so much time and money getting my chair fixed. I can't live without it. Yet, they [Medicare and Medicaid] won't let me have a backup. They'd rather I stay in bed all day. This is my analogy of how the government works. Let's say I have two working legs and I break my left leg. The government would tell me not to worry about it because I can hop around on my right leg."

"I have been on Medicare and Medicaid since 1995. This happened when my dad became eligible for retirement. My income is $807 per month. My rent is $185. I pay $40.20 per month for some health thing. I'm not even sure what it is for. I am having problems with my chair. Paratransit moved to a fixed route system, so I have to ride my chair a long ways to the bus stop every day. My chair is falling apart because of it. My five years have passed, so I am eligible for a new chair. I started the process four months ago: appointment with doctor, complete forms, appointment with physical therapy, complete more forms, meet with medical supply, complete more forms. At the end I got a letter from Medicare telling me I didn't need a new chair. I wrote letters to my congressmen, but I haven't heard anything. I keep paying out of pocket for repairs. Then I got a letter that said my chucks will no longer be paid for. The government doesn't care if I pee in my bed. Now I have to come up with the money for those. Please make the system easier. Part D is awful. I felt like I was gambling. I just made a choice and now I'm paying $40 every month. I don't know what it is for."

"I have been a Dual for 28 years. I have not had problems getting doctors. My income is $1,000/month. A portion of that goes to rent. I pay $31.80 a month to the use the hospital swimming pool for exercise.

I just had to pay for a new crown on my tooth, so that wiped out my income for two months. I was in pain and couldn't wait for the Medicaid dentist. I have to really control my food and water intake because I only get 27 hours of personal care services a week and I have to use the toilet five times a day. If I have to pee more frequently, I have to pay. I have been having such problems with my wheelchair. They changed the paratransit system, so now I have a long ride to the bus stop. The problem is that Medicare will no longer pay for large batteries, so I have small batteries that don't go very far before I have to charge them. I really have to plan my day. Because of the wear and tear on my chair, it is always breaking down. When it goes into the shop, I have to stay in bed. My doctor filed the paperwork for a new chair at Christmas. It takes a really long time. I just hope my chair at home won't break before the new one arrives." I asked, "Where do you go when you have questions about your coverage?" She responded, "Oddly, I'm not from North Dakota and I've never been to North Dakota, but I found someone so helpful from that State. Every time I need something I call her."

C.8 Other Issues: Insufficient Benefits/Coverage; Impact on Employment

A few participants cited the need to pay out-of-pocket for services but were reluctant to seek employment due to a fear of losing benefits.

"I became a Dual when I turned 18 because my dad was disabled. At 22 I lived in a nursing home for eight months because of sores. My income is $600 per month. My rent is $140, $23 is deducted because of an overpayment at some point, I have a student loan, and my food stamps were cut. I am now living in wheelchair hell. They are trying to get people off of the paratransit system. My wheelchair hit a pothole and bent the frame. It doesn't work right now. Medicare will only pay if there is fire or flood damage. Also, because I have to roll so far to the paratransit stop, I am having problems with my batteries. The chair literally has stopped in the middle of the road. My dad just told me that he spends more money on my wheelchair than on his truck. I really want to work, but I will lose my PCA benefits. Tell Medicare not to be so stringent. I have CP. People with CP don't get better. Hello! And don't even get me started on my shower chair."

"I have been a Dual since high school. The most horrible mistake I ever made in life was to leave Minnesota. The programs and benefits there were so much better there. When you are young you just don't think about those things. I use a lot of medications. Every time I turn around the pharmacist is telling me the drug is no longer covered. He is great about helping me find new drugs. I have a cream that I just can't live without and the generic doesn't work. I pay out of pocket for that. That is $189/month. I also just had to pay for my new shower chair. Medical assistance won't pay for that. It was almost $900."

"My monthly income is $803. Rent is one-third of that, plus I pay utilities, cable, phone, and other incidentals. I get food stamps, but that is being cut. The city cut back on the paratransit program, so it no longer runs on the weekends or after 8 PM and it no longer comes to my house since I live within two miles of a bus stop. I am having trouble with the motor on my wheelchair because I have to ride to the bus stop and we have had such a wet, cold spring. It just dies in the middle of the road and I have to call my parents. 'Hello, mom, I'm stuck in the middle of highway again.' And then I am stuck without my chair and I miss work. I have to pay for the repairs because that is not covered. I could use the private wheelchair transit company, but that is $27 one-way or $50 round-trip. If I could send one word to Washington I would request that they make getting medical equipment easier and that I would have to spend less out of my pocket."

"I live on $683 dollars a month. My rent is $178 and then I have utilities, phone, and cable. I was getting $27 per month in food stamps, but that was just reduced by $8. They let you build up a four-month supply of food stamps, so I am now at $96. I worry about an emergency, so I try to save along

the way. I pay $33.38 per month for my meds. PCAs come to my house four times a day. I went to college and got a bachelor's degree. I really wanted to be independent. I got a job making $18,000 a year. After my first paycheck, I got a letter from the state saying I would no longer be eligible for services. Almost overnight, I lost my health insurance, my rental assistance, and my personal care attendants. I had no idea this was going to happen. I would need to make over $40,000 to break even. I quit my job and spent so much time filling out paperwork to get back on Medicaid. A shower chair is so important for me. The PCA agency said that they would no longer help me shower unless I got a new shower chair. They thought it was unsafe. The chairs rust and every year I have this problem. A new chair for me is $800. I don't have $800. New wheels for the chair cost $200, but the doctor wouldn't write the prescription until he sees the chair. Look at me, how am I supposed to bring my shower chair to the doctor. This system is really broken. It seems like so many people who claim to be disabled use the system, and those of us who are really disabled have to jump through every hoop."

"I have been receiving Medicare and Medicaid since 2004. I went to college to get my degree, not realizing that if I got a job I would lose all of my benefits. Had I known, I wouldn't have gone to college. Right now I get 37.45 hours of PCA services. They come to my house five times a day to help me with the bathroom."

As noted above, although the interview guide was designed to capture experiences about billing, participants voiced a great deal of dissatisfaction with coverage of services and access to quality DME. Because a number of participants experienced these problems, this report includes them as major findings or themes of the study.

IV. Quantitative Data Analysis

A. Methodology and Data

This analysis uses the Medicare-Medicaid Linked Enrollee Analytic Data Source (MMLEADS) and other enrollment and claims data contained within the CMS Chronic Condition Warehouse (CCW)from 2008-2009 (See **Appendix E**). Controlling for key covariates that might affect utilization, Multivariate logistic regression analysis was used to examine the effects of state payment policy on QMB enrollee service utilization. These logistic regression models were then used to simulate the probability of each QMB enrollee group would utilize a service in a particular timeframe, as compared to the acuity-matched Medicare-only group. This approach is an alternate way of visualizing the relative probability of service utilization across groups in states with varying payment policy types. Appendices A and B present detailed information on the data sources, study population and analytic methods.

B. Results

B.1 Findings: Logistic Regressions

In this section, logistic regression findings are presented in the form of odds ratios. Results are divided into three subsections, each representing a different type of service: outpatient services, inpatient or institutional services, or potential downstream indicators of limited access to care (i.e., hospitalization for an ACSC or use of the ER).

The following odds ratios are presented for each regression model:

- To illustrate the impact of state payment policy for physician services and its potential interaction with QMB status to impact beneficiary utilization, the odds ratio for various combinations of QMB enrollee status and state physician service payment policy are presented, with adjustment for demographic and health condition variables.
- The odds ratios for key covariates are shown in Appendix D in order to show the relative likelihood of service utilization for various beneficiary groups based on factors such as demographics, long-term care use, and the concentration of providers in the area.

Odds ratios are presented because these provide for an easier interpretation than regression coefficients (due to the interactions between QMB status and state policy). For readers who wish to view these coefficients, **Appendix C** presents this information for all models.

a. Medicare Outpatient Services

These analysis on the impact of the physician payment policy on outpatient service utilization resulted in mixed findings. **Table 3** (below) shows odds ratio estimates for QMB enrollees relative to Medicare-only enrollees by type of policy, adjusting for demographic and health condition variables. Relative to Medicare-only enrollees**,** QMB Plus enrollees consistently had lower odds of using all outpatient services, with the exception of mental health services,[38] and that the odds

[38] It should be noted that in 2008, Medicare only paid 50% of the costs of outpatient mental health treatment. Under the 2008 Medicare Improvements for Patients and Providers Act, Medicare was required to cover a gradually increasing portion of these costs, beginning in 2010 and leading up to January 1, 2014 in which Medicare achieved parity with non-mental health treatment costs by paying 80% of these mental health related costs.

were lower in lesser-of pay states than in full pay states. The differences between these odds ratios were statistically significant, though the magnitudes of the differences were small. For example, for outpatient office visit services, the odds ratios were 0.90 (CI 0.89, .90) for lesser-of states versus 0.92 (CI 0.91, 0.93) for full pay states, when adjusting for demographic and health condition variables. For hospital outpatient services, the odds ratio was 0.94 (CI 0.93, 0.94) for lesser-of pay states compared to 0.97 (CI 0.97, 0.98) for full pay states when adjusting for demographic and health condition variables.

For QMB Only enrollees, however, the results were mixed. For example, QMB Only enrollees who reside in a lesser-of payment state had a lower odds of using office visit services than Medicare-only enrollees residing in those states (OR: 0.83; CI: 0.82,0.85) adjusting for demographic and health condition variables. These odds were lower than among QMB Only enrollees in full pay states (OR: 0.91; CI: 0.88, 0.93). However, the results were opposite for hospital outpatient services. QMB Only enrollees in lesser-of states had a greater odds of using hospital outpatient services relative to Medicare-only enrollees residing in those states 1.15 (CI: 1.13, 1.17). QMB Only enrollees in full pay states also had a higher odds of using hospital outpatient services relative to Medicare-only enrollees residing in those states, however the difference was not as great as seen for the lesser-of states (OR: 1.05; CI: 1.02,1.07) when adjusting for demographic and health condition variables.

Table 3. Comparative Odds Ratios Across QMB Status and State Payment Policy for Medicare Outpatient Services Utilization

Enrollee Characteristics	Office Visit Services	Office Visit Services	Hospital Outpatient Services	Hospital Outpatient Services	Mental Health Services[1]	Mental Health Services[1]
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
QMB Only vs Medicare-only						
Lesser-of state	**0.83***	0.82-0.85	**1.15***	1.13-1.17	0.87	0.70-1.08
Full Pay state	**0.91***	0.88-0.93	**1.05***	1.02-1.07	0.97	0.76-1.23
QMB Plus vs Medicare-only						
lesser-of state	**0.90***	0.89-0.90	**0.94***	0.93-0.94	0.85*	0.78-0.93
Full Pay state	**0.92***	0.91-0.93	**0.97***	0.97-0.98	0.96	0.87-1.05
Summary Statistics						
C-Statistic	0.835		0.777		0.801	
n	4,578,568		4,578,568		263,966	

Source: CY 2009 MMLEADS, CY 2009 GVDB Part B, CY 2012-2013 Area Health Resources Files (AHRF)
* P-Value < .05 for differences between either QMB and the Medicare-only reference population. Note that services for which there are significant differences between lesser-of and full pay states are shown in bold; significant differences between the lesser-of and full pay groups are defined as the overlapping of the two odds ratio confidence intervals
[1] Sample was limited to individuals with a mental health condition as defined by the CCW in 2008

b. Medicare Inpatient and Institutional Services

Table 4 presents estimates of the odd ratios for QMB enrollees relative to Medicare-only enrollees by state payment policy for outcomes related to hospital inpatient and skilled nursing facility

services. While most of the differences between QMB and Medicare-only beneficiaries were statistically significant, when comparing these differences between the lesser-of states to full pay states, only the skilled nursing facility (SNF) results for QMB Plus beneficiaries was found to be significant. More specifically, for skilled nursing facility stays among QMB Plus beneficiaries in full pay states, there was a 15% lower likelihood of a SNF stay as compared to Medicare-only beneficiaries (OR: 0.85, CI 0.82, 088). In contrast, the likelihood of a SNF stay in a lesser-of pay state was about three percent greater for QMB Plus enrollees as compared to Medicare-only enrollees (OR: 1.03, CI 1.00, 1.05).

Table 4. Comparative Odds Ratios Across QMB Status and State Payment Policy for Medicare Inpatient and Institutional Service Utilization

Enrollee Characteristics	Hospital Inpatient Services	Hospital Inpatient Services	Skilled Nursing Facility Services[1]	Skilled Nursing Facility Services[1]
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
QMB Only vs Medicare-only				
Lesser-of state	1.03*	1.01-1.06	0.75*	0.70-0.80
Full Pay state	1.02	0.99-1.06	0.78*	0.70-0.86
QMB Plus vs Medicare-only				
Lesser-of state	0.98*	0.97-0.99	**1.03***	1.00-1.05
Full Pay state	0.97*	0.96-0.99	**0.85***	0.82-0.88
Summary Statistics				
C-Statistic	0.708		0.729	
n	4,578,568		800,936	

Source: CY 2009 MMLEADS, CY 2009 GVDB Part B, CY 2012-2013 Area Health Resources Files (AHRF)
* P-Value < .05 for differences between either QMB and the Medicare-only reference population. Note that services for which there are significant differences between lesser-of and full pay states are shown in bold; significant differences between the lesser-of and full pay groups are defined as the overlapping of the two odds ratio confidence intervals.
[1]Sample is limited to enrollees with an inpatient hospitalization within the first six months of the study period

c. Potential Downstream Indicators of Limited Access to Care

Table 5 below shows odds ratios for outcomes related to potential downstream indicators of limited access to care (i.e., emergency room services and ACSC hospitalizations) for QMB enrollees relative to Medicare-only enrollees and differences between lesser-of and full pay states. The most pronounced finding here is among QMB Only enrollees. For example, QMB Only enrollees residing in a lesser-of payment state had 43% greater likelihood (OR: 1.43; CI: 1.40,1.46) of using emergency room services relative to Medicare-only beneficiaries, a risk that was significantly greater than the 23% elevated risk among QMB Only enrollees residing in full pay states (OR: 1.24; CI: 1.20,1.27). Similarly, the likelihood of an ACSC hospitalization in lesser-pay states was 38% higher for QMB Only enrollees as compared to Medicare-only beneficiaries (OR: 1.38, CI: 1.32, 1.44), while in full pay states, this likelihood was still positive, but only 15% greater (OR 1.15, CI: 1.09, 1.22).

Table 5. Comparative Odds Ratios Across QMB Status and State Payment Policy for Access to Care Measures

Enrollee Characteristics	Emergency Room Services	Emergency Room Services	ACSC Related Hospitalizations[1]	ACSC Related Hospitalizations[1]
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
QMB Only vs Medicare-only				
Lesser-of state	**1.43***	1.40-1.46	**1.38***	1.32-1.44
Full Pay state	**1.24***	1.20-1.27	**1.15***	1.09-1.22
QMB Plus vs Medicare-only				
lesser-of state	**1.17***	1.16-1.18	**1.11***	1.09-1.12
Full Pay state	**1.21***	1.19-1.22	**1.10***	1.08-1.12
Summary Statistics				
C-Statistic	0.697		0.732	
n	4,578,568		800,936	

Source: CY 2009 MMLEADS, CY 2009 GVDB Part B, CY 2012-2013 Area Health Resources Files (AHRF)

* P-Value < .05 for differences between either QMB and the Medicare-only reference population. Note that services for which there are significant differences between lesser-of and full pay states are shown in bold; significant differences between the lesser-of and full pay groups are defined as the overlapping of the two odds ratio confidence intervals.

[1] Sample is limited to enrollees with at least one chronic condition as defined by the CCW

B.2 Findings: Simulated Probabilities

Estimates from the logistic models aided in calculating the predicted probabilities of using a service under alternative QMB status and physician payment policy scenarios. This computation allowed for the translation of odd ratios estimates into differences in the probability of service use. This format is particularly helpful for understanding the magnitude of the probability differences between groups. Similar to the logistic regression findings, simulated probability findings have been divided into the following three subsections: outpatient services, inpatient or institutional services, and potential downstream indicators of limited access to care (hospitalization for an ACSC or use of the ER). The simulated relative probabilities – based on regression models that control for individual characteristics beyond acuity and focus solely on the impact of physician lesser-of payment policies – may provide the clearest view of the potential implications of lesser-of payment policies on QMB enrollees.

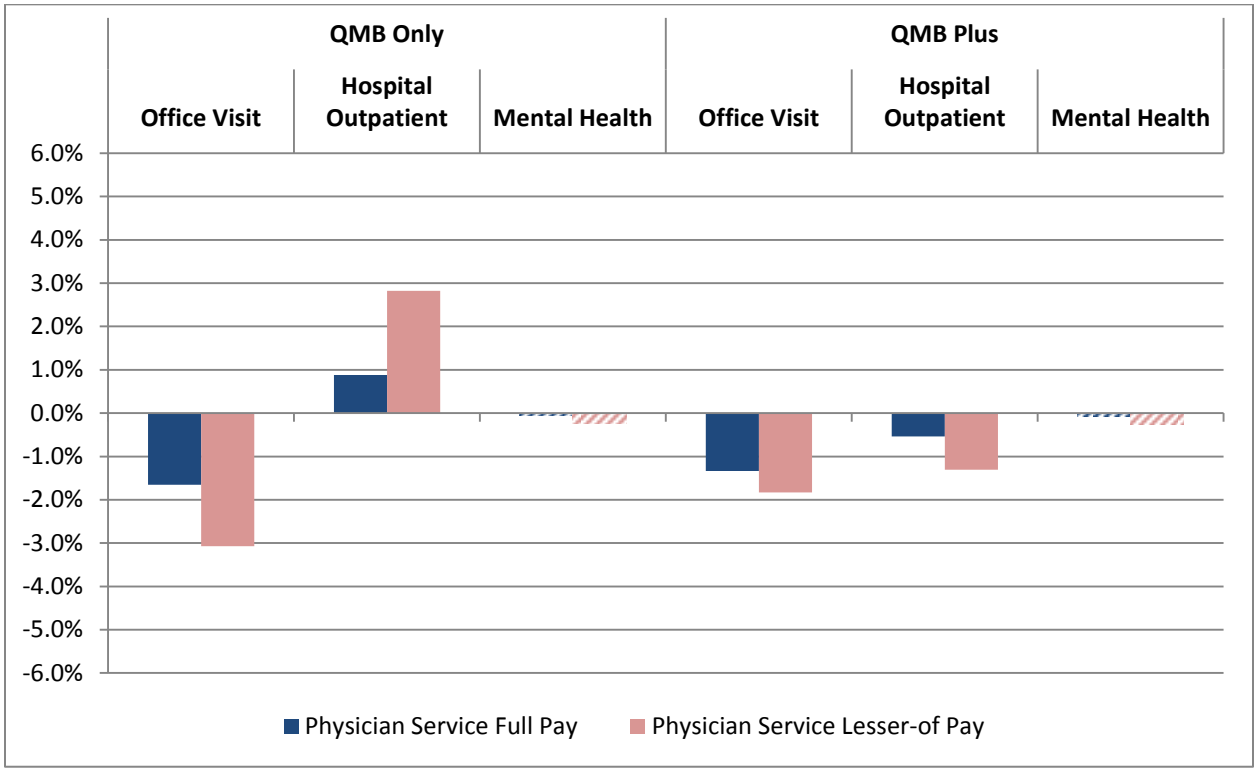
Shown below is a series of figures indicating the simulated probability of QMB Only and QMB Plus enrollees utilizing a given service (or experiencing an event) *relative* to the probability for an acuity-matched Medicare-only enrollee.

a. Medicare Outpatient Services

As shown in **Figure 1** below, in states with a lesser-of physician service policy as well as those with a full pay policy, QMB enrollees have a lower probability of utilizing outpatient office visit services in the 90-day measurement period when compared to Medicare-only enrollees living in the same state. The reduced likelihood (as compared to Medicare) is greatest in lesser-of states relative to full pay states and among QMB Only enrollees relative to QMB Plus enrollees.

Regarding hospital outpatient services during the first six months of the study, QMB Plus followed the same pattern as both QMB Only and QMB Plus office visit services in that policy type was associated with a lower likelihood of utilizing hospital outpatient services when compared to Medicare-Only enrollees (with the lowest likelihood among QMB Plus enrollees in states with a lesser-of physician policy). For hospital outpatient services, however, the effect was reversed. QMB Only beneficiaries, especially in lesser-of states, had an increased likelihood of utilizing hospital outpatient services when compared to Medicare-Only enrollees.

Figure 1. Relative Probability of Office Visit Service Utilization (90 Days), Hospital Outpatient Service Utilization (Six Months), and Mental Health Service Utilization (Six Months) Among QMB Enrollees (as Compared to Medicare-Only Enrollees)



Source: CY 2009 MMLEADS, CY 2009 GVDB Part B, CY 2012-2013 Area Health Resources Files (AHRF)
Note 1: Within each state, QMB and Medicare-only cohorts were matched based on acuity. Mental health data were limited to QMB enrollees with one or more mental health conditions as compared to Medicare-only enrollees with one or more mental health conditions.
Note 2: Services for which there are significant differences between lesser-of and full pay states are shown with a solid color bar; non-significant relationships are shown with a textured bar. Significant differences between the lesser-of and full pay groups are defined as the overlapping of the two odds ratio confidence intervals.

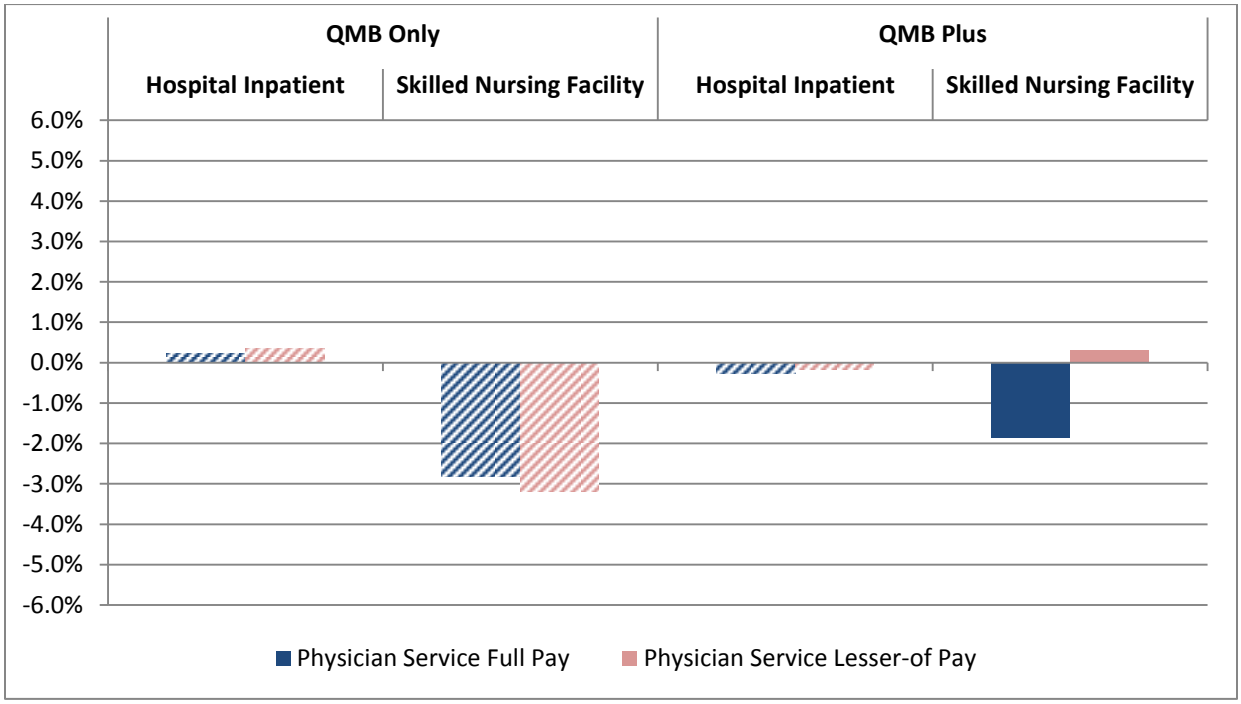
b. Medicare Inpatient and Institutional Services

Figure 2 shows the association between state policy type (i.e., lesser-of versus full pay) and the probability of having an inpatient admission or utilizing a SNF service during the first six months of the study.

In states with a full payment policy for physician services, a statistically significant relationship was found only for QMB Plus enrollees. More specifically, relative to their Medicare-only

counterparts, QMB Plus enrollees in lesser-of states were more likely to have a SNF stay than were QMB Plus enrollees from full pay states.

Figure 2. Relative Probability of Hospital Inpatient Service Utilization (Six Months) and Skilled Nursing Facility Service Utilization (Six Months) Among QMB Enrollees (as Compared to Medicare-Only Enrollees)



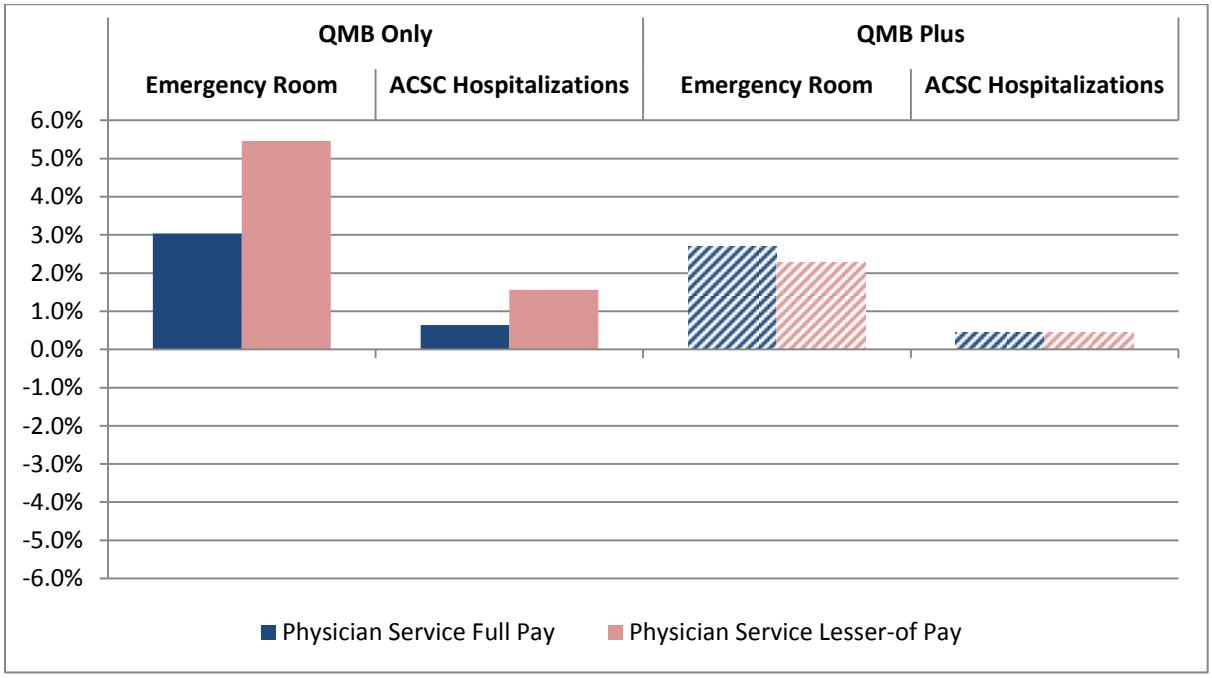
Source: CY 2009 MMLEADS, CY 2009 GVDB Part A, CY 2012-2013 Area Health Resources Files (AHRF)
Note 1: Within each state, QMB and Medicare-only cohorts were matched based on acuity. Skilled nursing facility data were limited to enrollees with an inpatient admission as compared to Medicare-only enrollees with an inpatient admission.
Note 2: Services for which there are significant differences between lesser-of and full pay states are shown with a solid color bar; non-significant relationships are shown with a textured bar. Significant differences between the lesser-of and full pay groups are defined as the overlapping of the two odds ratio confidence intervals.

c. Access to Care

Across states with both lesser-of and full pay physician service policies, QMB enrollees are more likely to use ER services than are Medicare-only enrollees (**Figure 3**). The greatest relative difference in probability of emergency room use is that of QMB Only enrollees in states with a lesser-of physician service policy, as compared to acuity-matched Medicare-only enrollees in these states (5.4% vs. 3.0%).

The relative probability of a hospitalization for an ACSC was evaluated for enrollees with one or more chronic conditions. QMB Only and QMB Plus status were also positively associated with the probability of hospitalization for an ACSC within the first nine months of the study period. QMB Only enrollees were slightly more likely to be hospitalized with an ACSC than their QMB Plus counterparts. The largest effect was for QMB Only enrollees in states with a lesser-of physician service policy, whose status was associated with a 1.6% increase in the probability of experiencing an ACSC-related hospitalization.

Figure 3. Simulated Probability of Emergency Room Service Utilization (Six Months) and Hospitalization for Ambulatory Care-Sensitive Condition Service Utilization (Nine Months) Among QMB Enrollees (as Compared to Medicare-Only Enrollees)



Source: CY 2009 MMLEADS, CY 2009 GVDB Part B, CY 2012-2013 Area Health Resources Files (AHRF)
Note 1: Within each state, QMB and Medicare-only cohorts were matched based on acuity. Hospitalization for ambulatory care-sensitive condition (ACSC) service utilization data were limited to QMB enrollees with at least one chronic condition as compared to Medicare-only enrollees with at least one chronic condition.
Note 2: Services for which there are significant differences between lesser-of and full pay states are shown with a solid color bar; non-significant relationships are shown with a textured bar. Significant differences between the lesser-of and full pay groups are defined as the overlapping of the two odds ratio confidence intervals.

V. Discussion

A. Discussion (From Qualitative Study)

Federal regulation prohibits Medicare providers from billing QMB enrollees for Medicare cost-sharing. Despite this, balance billing appears to persist. Findings in this report demonstrate how QMB enrollees not only have forgone needed medical services but also have experienced balance billing and other inappropriate and confusing billing practices.

Numerous complex and erroneous billing practices were brought to light in the interviews. The overarching findings were that providers were indeed billing QMB enrollees for the Medicare cost-sharing, that most participants did pay these bills, and that providers sent unpaid bills to collection agencies. Beneficiaries found both the billing and the appeals processes to be confusing and burdensome. Moreover, beneficiaries expressed concern over insufficient coverage for some needed services, in particular durable medical equipment.

Because State Health Insurance Program (SHIP) and Independent Living Center (ILC) counselors had identified participants with recent or current billing issues for participation in this study, these participants may have been more knowledgeable on the topic of billing than the other persons in the general Medicare-Medicaid beneficiary population. For example, many shared a clear understanding that it was against the law to receive a bill for their Medicare services. However, none of the participants understood whether the bill was a Medicare or Medicaid issue. Approximately one quarter of participants felt that they had received an erroneous bill and attempted to resolve the issue by calling the toll-free number found on the back of their Medicare card, though none reported seeking information from the local Medicaid office.

These findings reinforce those from the 2013 work. They point to the need for continued education of providers on the prohibition against balance-billing QMB enrollees, as well as strengthen existing resources in place to assist beneficiaries who encounter these problems.

B. Discussion (From Quantitative Analysis)

As more states adopt lesser-of payment policies over time, CMS seeks to understand the implications of this policy on access to health care under the QMB program. According to the MACPAC report, the number of states with a lesser-of pay policy increased from 12 in 1997 to 47 in 2012.

This quantitative study presents findings that are a step towards this goal. Using a sample of 17 states where payment policy information was readily available for 2009, the analysis in this report evaluates the empirical association between payment policy and utilization of several service types. To this end, the analysis compares differences between QMB enrollees and Medicare-only enrollees in states with lesser-of pay policies to differences between QMB enrollees and Medicare-only enrollees in states with full payment policies.

The analyses presented in this report show a complex picture of the potential relationship between lesser-of policies and QMB utilization and indicators of access to care. In some settings, the evidence suggests a negative, yet small, impact to QMB Only or QMB Plus enrollees due to lesser-of policies in the physician setting.

Among QMB Only enrollees, there was a particularly low probability of utilization of office visit services in states with a lesser-of physician service policies. Furthermore, as expected, there is an inverse relationship for emergency room service utilization and hospitalizations for ambulatory care-sensitive conditions among QMB Only enrollees in states with a lesser-of policy. The magnitudes of differences for ER use and ASCS hospitalizations were relatively large, compared to other differences in this study. While this study cannot confirm a connection between diminished office visit utilization and increased ER usage and rates of hospitalization for ACSC, these findings do raise the question of a potential physician access challenge related to policy that could be linked to avoidable hospitalization and ER use.

QMB Plus enrollees were less likely to use both office visit services and hospital outpatient services than Medicare-only beneficiaries, and this finding was even more so for beneficiaries from lesser-of states as compared to those from full pay states. Furthermore, QMB Plus enrollees from lesser-of states were more likely to use SNF services than Medicare-only beneficiaries, whereas QMB Plus enrollees from full pay states were significantly less likely to use SNF services than Medicare-only beneficiaries. This is a finding that we find particularly interesting and will continue to pursue. It is noteworthy that the QMB Plus enrollees in lesser-of states do not share the QMB Only pattern related to ER use and ACSC hospitalizations; one potential reason could be that having the full Medicaid benefit in some way has a "protective" effect. Another possibility is that those with full Medicaid (QMB Plus) may see providers that are accustomed to dealing with Medicaid.

Utilization of hospital inpatient services does not have a strong relationship to the type of physician payment policy in the state. This is not surprising, since, as reflected in Appendix E, three out of the eight states with a lesser-of payment policy for physician services have a full payment policy for inpatient services.

C. State Payment Policy

The analyses in this report focused solely on the potential impact of lesser-of payment policies in the physician service setting to test the hypothesis that a policy impacting access to physician services would be most likely to lead to downstream effects. Specifically, a state's lesser-of payment policy for physician services could influence the likelihood that an enrollee in a lesser-of state would see a physician, potentially affecting the same enrollee's probability of receiving inpatient or institutional care, accessing other types of outpatient care, having an ACSC hospitalization, or visiting the ER. Future research areas could include the effects of lesser-of payment policy in each of those three additional care settings on health care utilization.

The results of these analyses form the basis for additional research to assist policymakers in best meeting the needs of QMB enrollees who experience access challenges through actions such as payment policy revision, changes in how the federal government and states partner on the program, additional monitoring for potential balance billing of QMB enrollees, or modifications in information provided to QMB enrollees regarding their benefits.

D. Limitations

Findings presented in this report are limited in several ways. First, this report includes a limited subset of states. Second, as with any observational study, the analysis cannot control for unobserved characteristics that might influence outcomes. The study design attempts to control

for differences between QMB and Medicare-only enrollees by drawing an acuity matched sample for Medicare-only beneficiaries, and then employs regression analysis to control for remaining differences using other variables observed in the MMLEADS data. However, it is difficult to determine if the results would remain consistent if other control variables were included in the analysis. Third, this study does not control for other policies (i.e., state variation in Medicaid managed care penetration rates) that may affect benefits received under the QMB program. In addition, states that have lesser-of policies may be more likely to have other policies and regulations (e.g. rate-setting, burdensome billing, slow payment cycles) that also affect provider willingness to serve QMB enrollees. If lesser-of policies are highly correlated with these other factors, then these estimates would actually reflect a combined effect of all these factors.

E. Further Study

Both the qualitative and quantitative results of this report indicate that QMB enrollees face barriers to accessing needed care, especially in states with lesser-of payment policies. However, further study is needed before effective solutions can be identified. From the qualitative angle, beneficiaries reported being erroneously balance billed as well as struggling on their own before seeking help from a counselor. Given that the study population comprised persons who had already sought help with billing issues, the extent to which erroneous billing is actually occurring in the population overall cannot be inferred from this study. More study is warranted to better understand the extent to which providers erroneously and/or inappropriately bill Medicare-Medicaid enrollees for coinsurance as well as to understand the ramifications of these billing practices on beneficiaries' willingness to continue seeking routine medical care.

The quantitative study focused on teasing out differences in service utilization between QMB enrollees in lesser-of versus full pay states. These results indicate a trend of diminished access to routine health care services (i.e., physician office visits) among all QMB enrollees as compared to Medicare-only enrollees and among QMB enrollees in lesser-of states as compared to QMB enrollees in full payment states. The results also suggest a correlation between lesser-pay states and elevated utilization of more acute health care settings, although these findings differed by QMB Plus vs. QMB Only types for some services. For example, QMB Only beneficiaries in lesser-of payment states had an increased likelihood of using an emergency room or having an ACSC hospitalization compared to those in full pay states. However, among QMB Plus beneficiaries, those in lesser-of payment states had an increased likelihood of using a skilled nursing home as compared to those in full pay states. Additional research is needed to validate these findings and better understand differences between QMB Only and QMB Plus beneficiaries in lesser-of and full pay states. Further investigation is also needed into the specific types of services and providers to which QMB enrollees face barriers to access in order to inform future policy recommendations. Finally, since many states with lesser-of payment policies for physician services had full policies for hospital inpatient and skilled nursing facility care, future extensions of this work might also include analyses of the inter-relationships between the various other state payment policies.

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Appendix A: Methodology

A. Participant Recruitment

Over the course of five days, interviewers conducted 31 in-person interviews in three states: Michigan, Ohio, and South Dakota (see **Table 2**). These sites were chosen out of a total of seven states originally under consideration due to time and availability factors. Unfortunately, these factors bring the limitation of potentially compromised generalizability of the findings to the nation as a whole.

Table A.1. Interview Sites/Communities Visited

Site #	Interview Site/Community
Site 1	The Senior Alliance Area Agency on Aging 1-C 3850 Second St., Suite 100 Wayne, MI 48184
Site 2	The Legal Aid Society of Columbus 1108 City Park Avenue Columbus, OH 43206
Site 3	Independent Living Choices (ILC) 4107 S. Carnegie Circle Sioux Falls, SD 57106

The State Health Insurance Program (SHIP) and Independent Living Center (ILC) counselors based at the three interview sites assisted with recruitment for the in-person interviews. Each of the participating agencies received $1,000 to assist with this study. The counselors helped identify and recruit enrollees who were experiencing or had recently experienced billing issues.

Once participants gave permission, the 30-minute interviews were administered and recorded. The majority of the interviews took place at the interview sites, but if travel was a barrier, they were conducted at the individual's home. Each participant received a $50 gift card, and were reimbursed for travel, if applicable.

B. Data Collection

During the recruitment and planning processes, the SHIP and ILC counselors provided brief written summaries of each individual's billing experience. This allowed for the tailoring of the semi-uniform interview guide to the individual's experience (see below for the interview guide). The interview guide was designed to accommodate a range of experiences. For example, some individuals paid the bills; others tried to resolve their issue by calling Medicare's toll-free phone number on the back of their Medicare card; and others chose to directly approach the clinic that sent the erroneous bill. To better understand the balance billing issues, enrollees were asked to bring their bills and other related documentation to the interview. Having a counselor available during or immediately after the interviews helped clarify any remaining issues.

C. Interview Questions

In advance of each site visit, SHIP directors provided the team with a brief demographic description of each scheduled participant along with a summary of the billing issue, either past or present. If the issue has been resolved, the resolution will be described.

During recruitment, individuals are told the reason for the interview is to discuss their billing issue along with their reactions, actions and feelings about it.

Introduction: I understand you (are having or had) some problems with your bill(s) from (Medicare/Medicaid/insurance company/doctor/provider). Please tell me about it.

Potential questions:

- Were you expecting a bill?
- Who did the bill come from (e.g., doctor, Medicare, insurance)?
- Did you think you had to pay the bill?
- When did you first realize there was a problem with the bill?
- How did you feel after receiving the bill (e.g., scared, angry)?
- How did you react after receiving the bill (e.g., canceled appointments, delayed needed health care)?
- What did you do with the bill (e.g., paid the bill, showed adult child, took it to a counselor)?
- How long did you wait before you [paid the bill, showed adult child, etc.]? (SHIP counselors tell us that individuals receiving erroneous bills often wait until bill collectors get involved.)

Sequencing of the next questions will be dependent on what the individual did with the bill (e.g., showed adult child, took it to a SHIP counselor).

- You showed your bill to ____. Okay, who is ____? Where does ____ work?
- How did you learn about ____? Did you know ___ prior to getting this bill?
- Tell me how ____ helped you?
- Is your situation better now? Please explain.
- Are you worried this might happen again?
- Is there anything you are still confused about?
- How can this situation be prevented from happening to others?
- What is the most important piece of information that would have helped you with your billing problem?
- What do you know now that you wish you had known earlier/sooner?

Questions about service coverage:

- Now that you have [*insert Medicare or Medicaid, whichever is applicable]*, do you get services that you did not get before?
- Have you had trouble getting any of your new services paid for?
- Are you confused about who is supposed to pay for your services? Probe: If yes, tell me what is confusing.

Questions about program coverage:

- Are you worried that a service might not be covered? Has that ever happened? Does that keep you from seeing a doctor or asking for something that you need?
- Would it be helpful to have a sheet of paper that shows which services are covered?

Open-ended closure questions:

- What has been the best thing about this coverage for you?
- Is there anything else you would like to tell us?

D. Analysis of Data

The analysis of the qualitative interview data involved standard qualitative analytic procedures[39,40,41] guided by the constant comparative method. This is a systematic data coding and analysis process[42] in which the researcher categorizes specific quotes into broad themes and develops specific codes iteratively to reflect individual comments.

The focus of the interviews was balance billing. At times this was difficult, as some participants were more worried about paying for an $800 replacement shower chair than a $30 balance bill for services received in 2011. Further, many were extremely focused on the direct impact of recent cuts to the food stamp program. This report summarizes these additional issues raised by participants.

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Appendix B: Interview Participant Demographics

Table B.1. Table of Participant Demographics, N=31

Demographic	Mean	Range
Age	**56.1**	**27-94**
	Frequency	**Percentage**
Sex		
Male	14	45%
Female	17	55%
Race		
White	20	66%
Black or African American	8	26%
American Indian or Alaska Native	1	0%
Asian	3	10%
Native Hawaiian or Other Pacific Islander	0	0%
Ethnicity (Hispanic Origin)		
Mexican, Mexican American, Chicano/a	1	3%
Puerto Rican	0	0%
Another Hispanic, Latino/a or Spanish origin	0	0%
Physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?		
Yes	23	74%
No	8	26%
Have a regular doctor or nurse that you see?		
Yes	30	97%
No	1	3%
Number of doctor or nurse visits in the last six months		
0	3	10%
1	8	26%
2	4	13%
3 or more	16	52%
Hospital admission in the last six months		
Yes	12	39%
No	19	61%
Marital status		
Married	7	23%
Widowed	6	19%
Divorced	12	39%
Separated	0	0%
Unmarried partner/civil union	0	0%
Never married	6	19%
Highest level of education		
Less than high school	1	3%
Some high school	1	3%
High school diploma or GED	5	17%
Post high school other than college	5	17%
Some college or two year degree	7	23%
Four year college degree	8	27%
More than four year college degree	3	10%

	Frequency	Percentage
Living Arrangement		
Your own house	7	23%
Your own apartment	10	32%
Your own condo/townhouse	1	3%
Senior housing complex	9	29%
With my child in his/her home	0	0%
With my parent/s in their home	0	0%
Other	4	13%
Self-rated health during the past month		
Excellent	2	6%
Good	8	26%
Fair	14	45%
Poor	7	23%

Appendix C: Participant Demographic Form

To help us have a better understanding of the individuals we interview, please answer a few questions about yourself. This information will remain confidential and is for informational purposes only.

1. How old are you? _____

2. What is your sex? ☐ Male ☐ Female

3. What is your ethnicity?
   ☐ Not of Hispanic, Latino/a, or Spanish origin

   ☐ Mexican, Mexican American, Chicano/a

   ☐ Puerto Rican

   ☐ Cuban

   ☐ Another Hispanic, Latino/a or Spanish origin

4. What is your race?
   ☐ White

   ☐ Black or African American

   ☐ American Indian or Alaska Native

   ☐ Asian (*If known, please select from one of the responses below*)

   ☐ Native Hawaiian or Other Pacific Islander

5. Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?
   ☐ Yes ☐ No

6. Do you have a regular doctor or nurse whom you see?
   ☐ Yes ☐ No

7. How many times did you see your doctor or nurse in the last three months?
   - ☐ 0
   - ☐ 1
   - ☐ 2
   - ☐ 3 or more
   - ☐ Unsure
8. Did you have a hospital admission within the past six months?
   - ☐ Yes ☐ No
9. What is your current marital status?
   - ☐ Married
   - ☐ Widowed
   - ☐ Divorced
   - ☐ Separated
   - ☐ Unmarried partner/civil union
   - ☐ Never married
   - ☐ Unsure
10. What is your highest level of education?
    - ☐ Some high school
    - ☐ High school diploma or GED
    - ☐ Post high school other than college
    - ☐ Some college or two year degree
    - ☐ Four year college degree
    - ☐ More than four year college degree
    - ☐ Unsure

11. Are you currently living in:
    - ☐ My own house
    - ☐ My own apartment
    - ☐ My own condo/townhouse
    - ☐ Senior housing complex
    - ☐ Assisted Living Facility
    - ☐ Retirement community (age 55+ only)
    - ☐ With my child in his/her home
    - ☐ With my parent/s in their home
    - ☐ Unsure
12. Overall, how would you rate your health during the past month?
    - ☐ Excellent
    - ☐ Good
    - ☐ Fair
    - ☐ Poor
    - ☐ Unsure

Appendix D: Statement of Written Informed Consent

- I agree to participate in this interview about my Medicare and Medicaid experiences. This evaluation is being conducted by Lewin Group for the Centers for Medicare & Medicaid Services.
- I understand that the purpose of this evaluation is to have a discussion to find out my experiences about some of the health care bills I have received.
- I understand that we will talk about my positive and negative experiences with the Medicare and Medicaid programs.
- I understand that this interview last about 30 minutes and will be tape recorded. Neither my name nor any other identifying information (such as my voice) will be used in presentations or in written products resulting from this project.
- I understand that my participation in this project is entirely voluntary. If I wish to withdraw from the discussion, I may do so at any time. I understand that whether or not I participate, and any comments I may make, will not affect me or the services I receive.
- I understand that my name will not appear on any of the information I give today.
- I understand that I will receive a $50 gift card and transportation costs for participating in the interview today.
- The members of Lewin Group have offered to answer any questions I may have about the interview.

I have read and understand this information and I agree to take part in the study.

Print Name: _____

Sign Name: _____

Date: _____

If you have comments, concerns, or questions, please contact Cindy Gruman at 703-269-5506 or cindy.gruman@lewin.com.

Appendix E: Data Sources, Study Population & Variable Definitions

A. Data Sources

This analysis is based on Medicare enrollment and claims data from 2008-2009 (See **Table E.1**).

Table E.1. Data Sources

Data Source	Variables
Member Characteristics*	Demographic information, Medicare and Medicaid coverage dates, Medicare and Medicaid enrollment status
Chronic Conditions Data Warehouse (CCW)*	Chronic condition indicators
Service Level Summary*	Medicare monthly utilization data and expenditures for various services
Timeline**	Days in hospitals, Skilled nursing facility (SNF), Long-term care (LTC), etc.
GVDB Part A**	Medicare Part A claim level information for 2008 and 2009
GVDB Part B**	Medicare Part B claim level information for 2008 and 2009
Area Health Resource Files**	By core based statistical area[43]: ▪ Medicare Advantage penetration ▪ Median household income ▪ Per 10,000 individuals: Number of primary care physicians/specialists/SNF beds/short-term beds

*Medicare-Medicaid Linked Enrollee Analytic Data Source (MMLEADS).
** Other Data Sets.

B. Variable Definitions

1. Enrollee Type

QMB Only – Individuals who, for all of 2008 and the first nine months of 2009, were enrolled in Medicare FFS Parts A and B, Medicaid FFS, and the QMB program and not enrolled in their state's Medicaid program. Excludes QMB enrollees for whom condition and, subsequently, acuity data were unavailable.

QMB Plus – Individuals who, for all of 2008 and the first nine months of 2009, were enrolled in Medicare FFS Parts A and B, Medicaid FFS, and the QMB program and also enrolled in their state's Medicaid program. Excludes QMB enrollees for whom condition and, subsequently, acuity data were unavailable.

[43] According to the U.S. Census, core-based statistical areas (CBSAs) are defined as "the county or counties or equivalent entities associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties associated with the core." The term, which took effect in 2003, "refers collectively to metropolitan statistical areas and metropolitan statistical areas. The U.S. Office of Management and Budget (OMB) defines CBSAs to provide a national consistent set of geographic entities for the United States and Puerto Rico for use in tabulating and presenting statistical data" http://www.census.gov/geo/reference/gtc/gtc_cbsa.html.

Medicare-only – Individuals who, for the first nine months of 2009, were only enrolled in Medicare FFS Parts A and B. Sampled such that the cohort's acuity distribution matched the QMB enrollees' acuity distribution from the same state.

2. State Policy

Hospital Inpatient – Lesser-of State – Indicates that the state in which an enrollee resides utilized a lesser-of payment policy for hospital inpatient services in 2009.

Hospital Outpatient – Lesser-of State – Indicates that the state in which an enrollee resides utilized a lesser-of payment policy for hospital outpatient services in 2009.

Skilled Nursing Facilities – Lesser-of State – Indicates that the state in which an enrollee resides utilized a lesser-of payment policy for nursing facility services in 2009.

Physician – Lesser-of State – Indicates that the state in which an enrollee resides utilized a lesser-of payment policy for physician services in 2009. (Note that only the physician service policy variable was utilized in regression analyses.)

3. Enrollee Characteristics

Race – Enrollee race obtained from the RTI race code in MMLEADS beneficiary file. Categories include White, African American, Asian/Pacific Islander, Hispanic, American Indian/Alaskan Native, Other, and Unknown.

Age – Obtained from MMLEADS beneficiary file, enrollee age as of December 31, 2009 or the age at death if an individual died during the reference year.

Sex – Enrollee sex obtained from MMLEADS beneficiary file. Categories include female and male.

Original Reason for Medicare Eligibility – Using the MMLEADS Beneficiary file, identified how an enrollee originally gained his/her Medicare eligibility. Categories include the following: Old Age and Survivor's Insurance (65+), disability-insurance benefits, end-stage renal disease (ESRD), and disability-insurance & ESRD.

Long-Term Care Usage – Enrollee months in long-term care in 2009. To identify the number of months enrollees resided in institutional LTC settings, a consolidated monthly indicator variables was created using the MMLEADS timeline file, the MMLEADS Medicaid Beneficiary file, and the GVDB Part A claim file. If any of these files indicated a beneficiary was in a LTC setting during a month, the corresponding monthly variable was set to one. Total months were calculated by summing each monthly indicator.

4. Enrollee Health Conditions

Condition count – Number of conditions in Chronic Conditions Data Warehouse[44] (CCW). Similar diagnoses were grouped together and counted once for each condition. The final list of conditions included in the condition count include the following: Alzheimer's disease and Alzheimer's related disorders, asthma & chronic obstructive pulmonary disease (COPD), anxiety

[44] https://www.ccwdata.org/web/guest/home.

& PTSD, bipolar disorder, cancer, cerebral palsy, chronic kidney disease, cystic fibrosis, deafness & hearing impairment, depression, diabetes, epilepsy, heart disease/failure, intellectual & developmental disabilities, mobility-related impairments & spine/brain injury, multiple sclerosis, muscular dystrophy, osteoporosis, personality disorder, rheumatoid osteo-arthritis, schizophrenia, spina bifida, stroke, and visual impairment.

Square of condition count – Square of the number of conditions in CCW. See above for information on the method for counting conditions.

Mental health diagnosis – A 1/0 indicator variable that takes the value of "1" if the enrollee has any of the following CCW flags: depression, anxiety disorder, bipolar disorder, schizophrenia and other psychotic disorders, ADHD and other conduct disorders, personality disorder, or post-traumatic stress disorder.

Community Characteristics (by Core Based Statistical Area [CBSA][45]) – The following variables are calculated from the Area Health Resource File[46] (AHRF) and assigned to each beneficiary record. The AHRF file is produced by the US Department of Health and Human Services, Health Resources and Services Administration and aggregates data from multiple sources to provide a broad range of health resource and socio-economic indicators. A multistep process was used to assign members to CBSAs by first cross walking the beneficiary zip code to county FIPS code and then from county to CBSA. The CDC's County Cross Reference File[47] was used to crosswalk the beneficiary zip code to the county FIPS code. This process resulted in four potential beneficiary assignments: 1) if the beneficiary zip code was not in CDC county file, the state average was used (6.2% of beneficiaries), 2) if the beneficiary zip code in CDC county file but the county was not in AHRF county table, the state average was used (3.7% of beneficiaries), 3) if beneficiary zip code in CDC county file but was rural and was not matched to a CBSA, values from the least populous CBSA in state were used (15.5% of beneficiaries), and 4) if the beneficiary zip code was in CDC county file and also matched to AHRF CBSA, values for that CBSA were used (74.5% of beneficiaries). Variables from the AHRF file include the following:

Medicare Advantage penetration in CBSA – Calculated as the percentage of Medicare-eligible individuals (Part A or Part B) who are enrolled in Medicare Advantage plans by county. CBSA level variables are calculated as the weighted average of this variable across counties in a CBSA, using the number of Medicare eligibles as the weight. This data is sourced from CMS.

Median household income in CBSA – Sourced from the American Community Survey (ACS) and includes total income for the population 15 years or older. Total income includes wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or

[45] According to the U.S. Census, core-based statistical areas (CBSAs) are defined as "the county or counties or equivalent entities associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties associated with the core." The term, which took effect in 2003, "refers collectively to metropolitan statistical areas and metropolitan statistical areas. The U.S. Office of Management and Budget (OMB) defines CBSAs to provide a national consistent set of geographic entities for the United States and Puerto Rico for use in tabulating and presenting statistical data" http://www.census.gov/geo/reference/gtc/gtc_cbsa.html.

[46] Area Health Resources Files (AHRF). 2012-2013. US Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Rockville, MD.

[47] http://wonder.cdc.gov/wonder/sci_data/codes/fips/type_txt/cntyxref.asp

income from estates and trusts; Social Security or railroad retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income.

Primary care physicians per 10,000 in CBSA – The number of primary physicians from the American Medical Association Physician Masterfiles per 10,000 persons residing in the CBSA. Primary care physicians include non-federal office based MDs or DOs less than 75 years in age with specialties of General Family Medicine, General Practice, General Internal Medicine, or General Pediatrics.

Specialists per 10,000 in CBSA – The number of medical specialty physicians from the American Medical Association Physician Masterfiles per 10,000 persons residing in the CBSA. Primary care physicians include non-federal office based MDs or DOs less than 75 years in age with specialties of Allergy and Immunology, Cardiovascular Disease, Dermatology, Gastroenterology, Internal Medicine Subspecialties, Pediatric Subspecialties, Pediatric Cardiology, and Pulmonary Disease.

Skilled nursing facility beds per 10,000 in CBSA – The number of staffed beds from the American Hospital Association Annual Survey of Hospitals per 10,000 persons residing in the CBSA. These hospitals are identified using Length of Stay = 2, may provide either non-specialized or specialized care, and the majority of their patients stay for more than 30 days.

Short term beds per 10,000 in CBSA – The number of staffed beds from the American Hospital Association Annual Survey of Hospitals per 10,000 persons residing in the CBSA. These hospitals are identified using Length of Stay = 1, may provide either non-specialized or specialized care, and the majority of their patients stay for fewer than 30 days.

5. Utilization/Expenditures

Office visit services – Part B non-institutional evaluation and management visits (both primary care and specialty care). Limited to office visits (service level 2 = OFF), which is defined by BETOS codes M1A and M1B.

Hospital outpatient services – Outpatient prospective payment system visits within six months from start of study. Limited to outpatient prospective payment system (OPPS) visits (service level 2) within the service level 1 OPD category. This limitation omits other service level 1 categories such as clinic (federally qualified health centers and rural health centers), ESRD facilities, critical access hospitals, and other (includes items such as SNF other and outpatient therapy). This limitation also omits outpatient department visits at critical access hospitals. Omitted categories have different patterns of beneficiary access and/or different payment regulations.

Mental health services[48] – Part B non-institutional office visits for outpatient mental health within 90 days from start of study. Includes virtually all psychotherapy and other treatment services listed in the psychiatry section of the CPT-4 manual, regardless of provider type (includes psychiatrists, psychologists, and social workers). This limitation omits diagnostic services,

[48] Includes the following CPT codes: 90791, 90832, 90833, 90834, 90836, 90837, 90838, 90839, 90840, 90845, 90846, 90847, 90849, 90853, 90863, 90865, 90867. 90868, 90869, 90870, 90875, 90876, 90880, 90882, 90885, 90887, 90889, 90899, 96101, 96102, 96103, 96105, 96110, 96111, 96116, 96118, 96119, 96120, 96125, 4060F, 4064F, 4065F, 4066F, 4526F

inpatient care in an acute hospital setting, and medication monitoring visits (potentially provided by psychiatrists or in primary care).

Hospital inpatient services – Part A institutional inpatient stays within six months from start of study. This was limited to inpatient prospective payment system (IPPS) visits (service level 2) within the service level 1 acute category. This limitation omits critical access hospital visits as these institutions are subject to different payment regulations.

Skilled nursing facility services – SNF stays within six months from start of study. This category includes service level 2 SNF visits within the service level 1 post-acute care category. In order to ensure everyone in our sample was eligible for a covered SNF stay, the population in the SNF sample was limited to include only beneficiaries who had at least one inpatient stay.

Emergency room services –Utilization is measured using Part B institutional claims. Part B institutional ER claims are those that include revenue codes between 0450 and 0459. Institutional costs include dollars from all lines on the same claim, regardless of revenue code. Non-Institutional expenditures are identified by service level 2 = ER, which corresponds to BETOS category M3.

Hospitalizations for Ambulatory Care-Sensitive Conditions – Ambulatory care-sensitive admissions within nine months from start of study. Related admissions were identified using Agency for Healthcare Research and Quality Prevention Quality Indicators (PQIs),[49] which are a set of measures that can be used with inpatient discharge data to identify quality of care for ACSCs, where "good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease."

ASC was limited to enrollees with at least one chronic condition as defined by the CCW because most ASCs are related to poor management of chronic care conditions. In fact, the incidence rate of ASC among people without chronic conditions is quite low (very close to zero). Limiting to those with at least one chronic condition isolated only people who were "at risk" of having an ACS, thereby capturing more variability in the data and creating more precise definition of this measure.[50] Because of relatively low incidence rate created by this condition, the period was extended to nine months.

Analyses included hospitalizations for the following reasons (taken from GVDB Part A files): diabetes short-term complication, diabetes long-term complication, COPD or asthma in older adults, hypertension, congestive heart failure, dehydration, bacterial pneumonia, urinary tract infection, angina (without procedure), uncontrolled diabetes, or lower extremity amputation among patients with diabetes.

C. State Payment Policy

State payment policies were identified as "lesser-of" or "full" for the hospital inpatient, hospital outpatient, skilled nursing, and physician service settings. (States with "other" policy types were

[49] http://www.qualityindicators.ahrq.gov/Modules/PQI_TechSpec.aspx

[50] The decision to limit to those with a CCW-defined chronic condition was not necessary for emergency department visits; ED visits are more frequent than ACS hospitalizations and these are not negligible among the population without chronic conditions.

omitted due to variation in this category.) The detailed spreadsheet accompanying the 2013 MACPAC study of state payment polices was used as a starting point. This spreadsheet contains information on the most recent payment policies for each care setting. The sources for this information included states' Medicaid provider manuals, state bulletins, and conversations with state leadership.

Based on the MACPAC analysis, this study began with the identification of state payment policies for these care settings that were in effect in 2009, when the study data were collected. To ensure a sufficient and representative analysis, research was limited to states with Medicare managed care penetration rates[51] below 33%. One exception to this rule was the inclusion of California, given the size and policy importance of that state.[52] This study assumed that the in the search process, all states with "full payment" policies in 2012 (according to the MACPAC study) had "full payment" policies in 2009. This assumption derives from the expectation that states would not switch from less to more generous payment policies in the context of state budget challenges, expanding Medicaid enrollment, and the lingering effects of the recession. Similarly, any state that was verified as "lesser-of" in both 2012 and any year preceding 2009 was marked as "lesser-of" for 2009.

The 2009 cost-sharing coverage policies were determined for all four care settings for 17 states that also met the managed care percentage cut-off. These states, with their respective full and lesser-of payment policies, are listed in Table 3 and serve as the basis of this study.

The analyses in this report focused solely on the potential impact of lesser-of payment policies in the physician service setting as hypothesized a policy impacting access to physician services would be most likely to lead to downstream effects. Specifically, a state's lesser-of payment policy for physician services could influence the likelihood that an enrollee in a lesser-of state would see a physician, potentially affecting the same enrollee's probability of receiving inpatient or institutional care, accessing other types of outpatient care, having an ACSC hospitalization, or visiting the ER. Future research areas could include the effects of lesser-of payment policy in each of those three additional care settings on health care utilization.

[51] http://kff.org/other/state-indicator/medicare-advantage-penetration/
[52] In 2012, the MA penetration rate for California was 36.4% (Kaiser Family Foundation).

Table E.2. Payment Policy by Care Setting for States in Study Population, CY 2009

State	Hospital Inpatient	Hospital Outpatient	Skilled Nursing Facilities	Physicians
AL	Full	Lesser-of	Full	Lesser-of
AR	Full	Full	Full	Full
CA	Lesser-of	Lesser-of	Lesser-of	Lesser-of
DE	Full	Lesser-of	Full	Lesser-of
IA	Full	Full	Full	Full
MD	Full	Full	Lesser-of	Full
NE	Full	Full	Lesser-of	Full
NJ	Full	Full	Full	Lesser-of
NV	Lesser-of	Lesser-of	Lesser-of	Lesser-of
NY	Full	Full	Full	Full
OK	Lesser-of	Lesser-of	Lesser-of	Full
SC	Lesser-of	Lesser-of	Lesser-of	Lesser-of
SD	Lesser-of	Full	Full	Full
VA	Lesser-of	Lesser-of	Lesser-of	Lesser-of
VT	Full	Full	Full	Full
WV	Lesser-of	Lesser-of	Lesser-of	Lesser-of
WY	Full	Full	Full	Full

Note: F = Full payment policy, in which the state pays the full amount of Medicare cost-sharing
L = Lesser-of payment policy, in which the state pays the lesser of two amounts: 1) the full amount of Medicare cost sharing or 2) the difference between the Medicaid rate and the amount already paid by Medicare.

D. Study Population

Each individual in the sample was assigned to the state where they resided at the beginning of 2009, as reported in the MMLEADS Medicare and Medicaid beneficiary files. As can be seen in **Table E.3**, 42% of the United States' QMB population resided in states that were included in this study.

Table E.3. QMB Population in States in Study Population as Proportion of National QMB Population, CY 2009

Inclusion/Exclusion in Study Population	Total QMB Enrollees in States	Percentage of National QMB Population
Included States	1,830,658	42%
Excluded States	2,527,948	58%
TOTAL	4,358,606	100%

Source: CY 2009 MMLEADS

Within the 17 states listed in **Table E.2** above, the study population included both a study cohort, consisting of QMB enrollees, and a comparison cohort, consisting of Medicare-only enrollees with similar levels of expected expenditures (based on a measure of acuity as described below). The study cohort of QMB enrollees was defined as individuals who, for all of 2008 and the first nine months of 2009, were enrolled in Medicare fee-for-service (FFS) Parts A and B, Medicaid FFS, and

the QMB program. The study cohort excluded QMB enrollees for whom clinical condition data were unavailable. The comparison cohort of Medicare-only enrollees included individuals who, for all of 2008 and the first nine months of 2009, were only enrolled in Medicare FFS Parts A and B and were never eligible for the QMB program.

To balance the study and comparison populations by the level of expected utilization, the Medicare-only population was sampled so that the cohort's acuity distribution matched the QMB enrollees' acuity distribution from the same state (see **Table E.4.a & Table E.4.b**). The term "health acuity" refers to the level of disease severity, disease burden, mortality risk, or degree of overall morbidity that is present in a patient or population. Lewin developed a method to systematically classify the health status of an individual Medicare-Medicaid enrollee using administrative data. Acuity was defined by comorbidity count and Hierarchical Condition Category (HCC) score[53] and divided into four levels: low, medium, high, and very high.[54] The sampling of the Medicare-only cohort was performed by iteratively computing the largest number of Medicare-only individuals necessary to populate each of the four acuity levels with the same proportions as the QMB population. This process involved first computing the distribution by acuity of the QMB enrollees in each state. Next, these shares were applied to the total number of Medicare-only enrollees in each state in order to calculate a target number of Medicare-only enrollees by acuity level required to match the distribution of the QMB population.[55]

Table E.4.a. Acuity Level Distribution for FFS QMB Enrollees and Acuity-Matched FFS Medicare-Only Enrollees, CY 2009 (States with Lesser-of Pay Policy for Physician Services in 2009)

State	Total QMB Enrollees	Medicare-only Enrollees in Acuity Matched Sample	Percentage Low Acuity Level	Percentage Medium Acuity Level	Percentage High Acuity Level	Percentage Very High Acuity Level
AL	70,953	215,042	48%	27%	16%	9%
CA	451,456	748,830	47%	27%	16%	10%
DE	7,870	53,814	46%	28%	17%	10%
NJ	80,372	337,922	35%	28%	22%	15%
NV	11,944	73,282	47%	27%	16%	10%
SC	60,899	214,984	49%	27%	15%	9%
VA	72,650	302,621	46%	27%	16%	10%
WV	10,689	84,688	44%	28%	17%	10%

Source: CY 2009 MMLEADS

[53] The HCC score is part of a CMS model used to predict total health care expenditures. It is calculated with a weighted combination of comorbidities and select demographic information for a given enrollee population.

[54] Very high = Eight or more comorbid conditions or HCC score 90th percentile or higher.
High = Six or more comorbid conditions or HCC score 75th percentile or higher
Medium = Four or more comorbid conditions or HCC score 50th percentile or higher
Low = all others

[55] In states where there were not enough Medicare-only enrollees in each group in the sample to meet the calculated targets by acuity level, the number of Medicare-only enrollees was reduced by 1,000 and the new targets were calculated. This process was repeated until there were a sufficient number of Medicare-only enrollees in the sample at every acuity level to match the acuity distribution of the QMB enrollees in every state.

Table E.4.b. Acuity Level Distribution for FFS QMB Enrollees and Acuity-Matched FFS Medicare-Only Enrollees, CY 2009 (States with Full Pay Policy for Physician Services in 2009)

State	Total QMB Enrollees	Medicare-only Enrollees in Acuity Matched Sample	Percentage Low Acuity Level	Percentage Medium Acuity Level	Percentage High Acuity Level	Percentage Very High Acuity Level
AR	43,595	144,682	51%	26%	15%	8%
IA	11,115	124,647	37%	32%	21%	10%
MD	47,973	260,766	46%	27%	16%	11%
NE	1,475	95,944	50%	28%	15%	7%
NY	175,419	561,633	40%	28%	20%	12%
OK	42,249	136,043	44%	27%	19%	11%
SD	8,723	47,652	52%	28%	14%	6%
VT	8,665	36,635	55%	27%	12%	6%
WY	2,960	30,376	58%	24%	12%	6%

Source: CY 2009 MMLEADS

E. QMB Enrollees in State's Study Population as Proportion of States' Total QMB Population

Table E.5 shows the proportion of each state's total QMB population that was included in the study population. In 13 of 17 included states, the sample represents at least 50% of all QMB enrollees in that state. Representation is lowest in Nebraska, where only 16% of the state's QMB population is included in the study sample.

Table E.5. QMB Enrollees in State's Study Population as Proportion of States' Total QMB Population, CY 2009

State	QMB Enrollees in Each State's Study Population	Total QMB Enrollees in Each State	Percentage Included
AL	70,953	109,369	65%
AR	43,595	75,359	58%
CA	451,456	726,417	62%
DE	7,870	13,068	60%
IA	11,115	22,587	49%
MD	47,973	83,626	57%
NE	1,475	9,095	16%
NJ	175,419	277,105	63%
NY	80,372	131,851	61%
NV	11,944	25,212	47%
OK	42,249	80,920	52%
SC	60,899	105,028	58%
SD	8,723	13,804	63%
VA	72,650	112,204	65%
VT	8,665	16,323	53%
WV	10,689	23,490	46%
WY	2,960	5,200	57%

Source: CY 2009 MMLEADS

F. Study Population Characteristics

Within each state, QMB and Medicare-only cohorts were matched based on health acuity level. Because of acuity-matching, the two groups share similar health profiles and expected health care costs, allowing for a valid comparison of their outcomes. However, there are still differences between the two in terms of demographic characteristics and the prevalence of certain conditions. To control for these differences the appropriate covariates were included in the regression models.

G. Demographic Characteristics

Demographic differences between QMB and Medicare-only enrollees are shown in **Table E.6**. As expected, in states with full payment policies for physician services, as well as those with lesser-of policies, the sampled Medicare-only population is significantly older than their acuity-matched QMB counterparts. Approximately 90% of sampled Medicare-only enrollees are 65 and over, compared to only 63% of QMB enrollees.

Compared to the acuity-matched sample of Medicare-only enrollees, the QMB enrollees in the study were generally more likely to be over age 65 and over age 85, female, and of minority race status. QMB enrollees were also more likely to be eligible for Medicare due to disability and to have any institutional care as well as longer lengths of time in institutional care among those with any institutional care. States with lesser-of policies tended to have a somewhat greater proportion who were of minority race groups, though the specifics of how this varied was different for the QMB enrollees and Medicare-only beneficiary groups. For example, among QMB enrollees, there are higher proportions of Asian/Pacific Islander and American Indian/Alaskan Native groups. A higher proportion of QMB enrollees had at least nine months of long-term care (LTC) as compared to Medicare-only enrollees. Medicare-only enrollees were slightly more likely than QMB enrollees to have zero or one to three months of institutional care. Unsurprisingly, Medicare-only enrollees were significantly more likely than QMB enrollees to qualify for Medicare due to old age or survivor's insurance. QMB enrollees were approximately three times as likely as Medicare-only enrollees to qualify due to disability. For both QMB and Medicare-only enrollees, rates of LTC and reasons for Medicare eligibility were similar regardless of state payment policy.

Table E.6. Demographic Characteristics of FFS QMB Enrollees and Acuity-Matched FFS Medicare-only Enrollees, by State Payment Policy, CY 2009

Characteristic	QMB Enrollees	QMB Enrollees	QMB Enrollees	QMB Enrollees	Medicare-only Enrollees in Acuity Matched Sample	Medicare-only Enrollees in Acuity Matched Sample	Medicare-only Enrollees in Acuity Matched Sample	Medicare-only Enrollees in Acuity Matched Sample
	States with Lesser-of Pay Policies for Physician Services	States with Lesser-of Pay Policies for Physician Services	States with Full Pay Policies for Physician Services	States with Full Pay Policies for Physician Services	States with Lesser-of Pay Policies for Physician Services	States with Lesser-of Pay Policies for Physician Services	States with Full Pay Policies for Physician Services	States with Full Pay Policies for Physician Services
	Number of Enrollees	Distribution	Number of Enrollees	Distribution	Number of Enrollees	Distribution	Number of Enrollees	Distribution
Age								
Under 65	280,341	36.6%	128,369	37.5%	127,347	10.1%	83,196	8.9%
65 and Over	486,492	63.4%	213,805	62.5%	1,825,705	89.9%	1,311,031	91.1%
Detailed Age Category								
Under 40	55,442	7.2%	29,679	8.7%	13,247	0.7%	7,883	0.5%
40-64	224,899	29.3%	98,690	28.8%	192,231	9.5%	119,464	8.3%
65-84	395,784	51.6%	168,388	49.2%	1,474,818	72.6%	1,046,599	72.8%
85 and Over	90,708	11.8%	45,417	13.3%	350,887	17.3%	264,432	18.4%
Sex								
Female	467,638	61.0%	221,652	64.8%	1,098,860	54.1%	789,225	54.9%
Male	299,195	39.0%	120,522	35.2%	932,323	45.9%	649,153	45.1%
Race								
White	333,211	43.5%	200,462	58.6%	1,693,487	83.4%	1,271,932	88.4%
African-American	146,681	19.1%	62,642	18.3%	170,755	8.4%	104,073	7.2%
Hispanic	3,654	0.5%	38,968	11.4%	91,680	4.5%	27,406	1.9%
Asian/Pacific Islander	163,151	21.3%	24,732	7.2%	51,791	2.5%	12,711	0.9%
American Indian/ Alaskan Native	110,872	14.5%	8,045	2.4%	3,901	0.2%	11,900	0.8%
Other	8,413	1.1%	6,398	1.9%	18,153	0.9%	9,060	0.6%
Unknown	851	0.1%	927	0.3%	1,416	0.1%	1,296	0.1%

Characteristic	QMB Enrollees States with Lesser-of Pay Policies for Physician Services Number of Enrollees	QMB Enrollees States with Lesser-of Pay Policies for Physician Services Distribution	QMB Enrollees States with Full Pay Policies for Physician Services Number of Enrollees	QMB Enrollees States with Full Pay Policies for Physician Services Distribution	Medicare-only Enrollees in Acuity Matched Sample States with Lesser-of Pay Policies for Physician Services Number of Enrollees	Medicare-only Enrollees in Acuity Matched Sample States with Lesser-of Pay Policies for Physician Services Distribution	Medicare-only Enrollees in Acuity Matched Sample States with Full Pay Policies for Physician Services Number of Enrollees	Medicare-only Enrollees in Acuity Matched Sample States with Full Pay Policies for Physician Services Distribution
Original Reason for Medicare Eligibility								
Old Age and Survivor's Insurance (65+)	393,269	51.3%	175,755	51.4%	1,665,547	82.0%	1,198,460	83.3%
Disability-Insurance Benefits	362,578	47.3%	162,844	47.6%	351,567	17.3%	231,365	16.1%
End-Stage Renal Disease (ESRD)	4,412	0.6%	1,399	0.4%	4,760	0.2%	2,964	0.2%
Disability Insurance & ESRD	6,574	0.9%	2,176	0.6%	9,309	0.5%	5,589	0.4%
Long-term Care Status (months of institutional care)								
0	693,267	90.4%	303,253	88.6%	1,923,434	94.7%	1,348,522	93.8%
1-3	19,720	2.6%	9,053	2.6%	79,198	3.9%	59,578	4.1%
4-8	6,320	0.8%	3,528	1.0%	15,507	0.8%	13,954	1.0%
9	47,526	6.2%	26,340	7.7%	13,044	0.6%	16,324	1.1%
Totals								
Total	766,833	-	342,174	-	2,031,183	-	1,438,378	-

Source: CY 2009 MMLEADS
Note: Within each state, QMB and Medicare-only cohorts were matched based on acuity

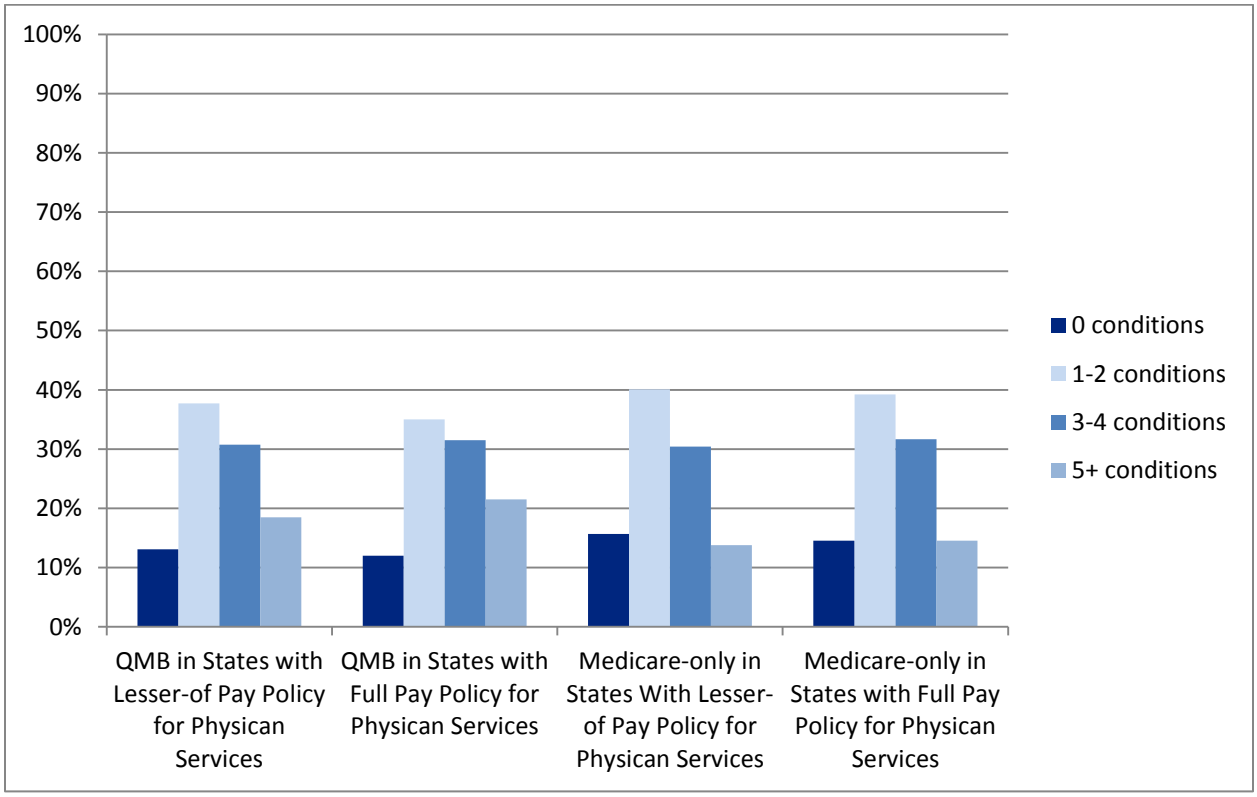
H. Prevalence of Clinical Conditions

As mentioned previously, the sample of Medicare-only enrollees from each state was intentionally selected to mirror that state's QMB population with regard to acuity.

Figure E.1 demonstrates the effect of matching the Medicare-only comparison groups with their QMB counterparts based on acuity status. In terms of the number of health conditions that affect enrollees, the distributions are similar in states with a lesser-of policy for physician services and in

states with a full payment policy, allowing for comparison between the two cohorts. However, QMB enrollees (across both state categories) are slightly more likely to have at least one physical or mental health condition and more likely to suffer from five or more health conditions simultaneously. This small difference in condition number is due to how acuity is measured. Since acuity is the combination of the number of conditions as well as the HCC score used by CMS to predict health expenditures, it is possible for an enrollee with fewer conditions to have the same acuity level as an enrollee with more conditions if their HCC score is higher than the enrollee with more conditions.

Figure E.1. Number of Physical and Mental Health Conditions among FFS QMB Enrollees and Acuity-Matched FFS Medicare-only Enrollees, by State Payment Policy, CY 2009



Source: CY 2009 MMLEADS, CY 2009 CCW
Note: Within each state, QMB and Medicare-only cohorts were matched based on acuity

Table 8 shows prevalence rates for clinical conditions among QMB enrollees and their acuity-matched Medicare-only counterparts. As the table demonstrates, while there may be differences in prevalence rates between the QMB and Medicare-only populations, the "difference-in-differences" (any additional differences between the two groups in states with varying policy patterns) is minor. This means that for a given condition, differences in prevalence between QMB and Medicare-only samples will be similar regardless of state payment policy. For example, in states with a lesser-of policy for physician services, the rate of anemia is 3.8 points higher for QMB enrollees than it is for Medicare-only enrollees. In states with all full payment policies, that difference is 3.0 points.

Table E.7. Prevalence Rates of Clinical Conditions among FFS QMB Enrollees and Acuity-Matched FFS Medicare-only Enrollees, by State Payment Policy, CY 2009

Clinical Condition	States With Lesser-of Pay Policy for Physician Services	States With Lesser-of Pay Policy for Physician Services	States with Full Pay Policy for Physician Services	States with Full Pay Policy for Physician Services
	QMB	Acuity-Matched Medicare-Only	QMB	Acuity-Matched Medicare-Only
Acquired Hypothyroidism	8.2%	9.2%	9.7%	9.6%
Acute Myocardial Infarction	0.8%	1.0%	0.9%	1.1%
Alzheimer's Disease and Related Disorders	14.0%	11.6%	15.8%	11.3%
Anemia	32.5%	28.7%	32.7%	29.7%
Anxiety	11.7%	7.6%	13.3%	7.5%
Asthma	8.0%	5.3%	8.2%	4.9%
Atrial Fibrillation	5.1%	11.4%	5.9%	11.6%
Attention Deficit Hyperactivity Disorder (ADHD)	1.2%	0.2%	2.2%	0.2%
Autism	0.4%	0.0%	0.6%	0.0%
Benign Prostatic Hyperplasia	5.6%	7.6%	5.1%	7.4%
Bipolar Disorder	5.7%	1.7%	6.8%	1.7%
Blindness or Visual Impairment	1.3%	0.6%	1.7%	0.8%
Breast Cancer	1.8%	3.7%	2.1%	3.9%
Cataract	17.7%	23.5%	16.9%	25.1%
Cerebral Palsy	1.3%	0.1%	1.7%	0.1%
Chronic Kidney Disease	16.0%	17.8%	14.6%	16.9%
Colorectal Cancer	1.0%	1.8%	1.2%	1.9%
Congestive Heart Failure	20.6%	21.7%	22.6%	22.3%
Chronic Obstructive Pulmonary Disease (COPD)	15.3%	13.6%	15.0%	13.9%
Cystic Fibrosis	0.5%	0.5%	0.6%	0.5%
Deafness or Hearing Impairments	5.1%	4.2%	6.7%	5.0%
Depression	18.2%	12.2%	21.8%	12.7%
Diabetes	17.6%	11.7%	21.3%	12.4%
Endometrial Cancer	37.7%	31.1%	36.4%	31.2%
Epilepsy	0.2%	0.3%	0.2%	0.3%
Glaucoma	4.7%	1.8%	5.3%	1.7%
Hip Fracture	10.7%	12.4%	12.4%	13.0%
Hyperlipidemia	5.1%	4.2%	6.7%	5.0%
Hypertension	0.8%	1.1%	0.9%	1.2%
Intellectual Disability	44.0%	51.3%	42.6%	49.1%
Ischemic Heart Disease	32.7%	38.8%	36.1%	41.1%
Learning Disability and Developmental Delays	0.1%	0.0%	0.4%	0.0%
Lung Cancer	0.6%	1.4%	0.7%	1.6%

Clinical Condition	States With Lesser-of Pay Policy for Physician Services	States With Lesser-of Pay Policy for Physician Services	States with Full Pay Policy for Physician Services	States with Full Pay Policy for Physician Services
	QMB	Acuity-Matched Medicare-Only	QMB	Acuity-Matched Medicare-Only
Mobility Impairments	4.8%	2.9%	4.4%	2.6%
Multiple Sclerosis	0.6%	0.5%	0.7%	0.5%
Muscular Dystrophy	0.1%	0.0%	0.1%	0.0%
Osteoporosis	8.9%	8.8%	8.5%	8.6%
Other Development Delays	0.4%	0.0%	1.9%	0.0%
Personality Disorders	1.0%	0.3%	1.5%	0.3%
Post-Traumatic Stress Disorder (PTSD)	0.8%	0.3%	1.3%	0.3%
Prostate Cancer	1.6%	4.6%	1.3%	4.5%
Rheumatoid Osteoarthritis	34.2%	32.5%	34.2%	32.4%
Schizophrenia	7.2%	0.7%	7.5%	0.6%
Spina Bifida	0.3%	0.2%	0.4%	0.2%
Spinal Cord Injury	0.5%	0.3%	0.4%	0.3%
Stroke	4.9%	5.5%	4.7%	5.2%
Tobacco Use	9.2%	4.6%	10.6%	4.6%
Traumatic Brain Injury	0.6%	0.4%	0.6%	0.4%

Source: CY 2009, MMLEADS, CY 2009 CCW
Note: Within each state, QMB and Medicare-only cohorts were matched based on acuity

Appendix F: Quantitative Methodological Details: Regression Analyses and Simulated Probabilities

A. Regression Analyses

Multivariate logistic regression methods were used to compare differences in the probability of using various services between QMB and Medicare-only enrollees in states with lesser-of pay policies for physician services against those differences in states with "full" payment policies for physician services. This approach allowed for the controlling of the remaining differences between QMB enrollees and acuity-matched Medicare-only beneficiaries. Utilization was analyzed in three categories. Outpatient setting analyses included office visit services, hospital outpatient services, and mental health services. Inpatient and institutional settings included hospital inpatient services and skilled nursing facility services. Finally, "access to care" indicators, included ER visits and hospitalizations for ACSCs. Hospitalizations for ACSCs are defined by AHRQ Healthcare Cost and Utilization Project (HCUP) as "inpatient stays that might be avoided with the delivery of high-quality outpatient treatment and disease management."[56] These rates are informative, as they may indicate insufficient access to primary care and specialist providers in the outpatient setting. For example, according to HCUP, Medicare-Medicaid enrollees were 39% more likely than a typical Medicare patient to suffer a potentially preventable hospitalization related to chronic obstructive pulmonary disease (COPD). Medicare-Medicaid enrollees were 103% as likely as non-Medicare-Medicaid enrollees to be hospitalized for potentially preventable complications related to asthma.[57]

For some outcome variables, the population in the regression was limited to include only those that met certain criteria:

- The mental health service utilization model is limited to those who had a mental health condition as defined by the Chronic Condition Warehouse in 2008.
- The skilled nursing facility model is limited to those who had an inpatient hospitalization within the first six months of the study period.
- The ambulatory-care sensitive condition hospitalization model is limited to those who had at least one chronic condition as defined by the Chronic Condition Warehouse in 2008.

Regression methods allowed for the controlling of potential differences in population demographics, health histories, and community characteristics. A logit specification was used to establish the empirical relationship between categorical outcomes (a 1/0 value indicating whether the beneficiary had utilization of services above within a specific time frame) and "risk factors" that included covariates and indicator variables representing physician service policy type, QMB enrollee status, and interactions between physician service policy type and QMB enrollee status. This allows for a difference in difference (DiD) approach in order to compare differences in outcomes between QMB enrollees in states with varying physician policies to the differences in outcomes for Medicare-only enrollees.

[56] Stranges & Stocks (2010).
[57] Jiang, et al. (2010).

To illustrate the logistic regression approach, define Y_{ij} as the outcome for individual i^{th} in state j^{th}.

$$P(Y_{ij} = 1) = \frac{\exp(\beta_x X_{ij} + \theta\, LP_{ij} + \gamma_1 QMBonly_i + \gamma_2 QMBplus_i + \boldsymbol{\gamma_3}(LPi_j * QMBonly_i) + \boldsymbol{\gamma_4}(LP_{ij} * QMBplus_i))}{1 + \exp(\beta_x X_{ij} + \theta\, LP_{ij} + \gamma_1 QMBonly_i + \gamma_2 QMBplus_i + \boldsymbol{\gamma_3}(LPi_j * QMBonly_i) + \boldsymbol{\gamma_4}(LP_{ij} * QMBplus_i))}$$

Where

X_{ij} represents the set of individual and community characteristics

LP_{ij} = 1 if an individual lives in a state with "lesser-of pay" policy for physician services and = 0 otherwise

$QMBplus_i / QMBplus_i$ serve as individual indicators for QMB Only and QMB Plus status (1/0)

Coefficients β_x measure the differential effects of individual characteristics (X) on outcome Y. The value of θ captures, for all enrollee types, regional differences in outcomes between states with a lesser-of policy for physician services and versus states with a full pay policy. The value of γ_1 determines differences in outcome Y experienced by QMB enrollees relative to Medicare-only enrollees across all states regardless of the state payment policy. Coefficient γ_2 captures the changes in the QMB to Medicare differential states with lesser-of pay physician policies relative to other states. The coefficients of interest, γ_3 and γ_4, capture *additional* differences between the QMB Only population and the Medicare-only population (γ_3) and the QMB Plus and Medicare-only population (γ_4) in states with a lesser-of pay policy in physician services.

B. Simulated Probabilities

To evaluate the impact of the lesser-of policy on the probability that a beneficiary will utilize a specific service, estimates from the multivariate analysis to construct six counterfactual scenarios. Under these scenarios the average probability of utilization was calculated for enrollees under differing values of QMB status and state payment policy.

- *Scenario 1*: All enrollees are Medicare-only beneficiaries living in a state with a full physician payment policy
- *Scenario 2*: All enrollees are QMB Only beneficiaries living in a state with a full physician payment policy
- *Scenario 3*: All enrollees are QMB Plus beneficiaries living in a state with a full physician payment policy
- *Scenario 4*: All enrollees are Medicare-only beneficiaries living in a state with a lesser-of physician payment policy
- *Scenario 5*: All enrollees are QMB Only beneficiaries living in a state with a lesser-of physician payment policy
- *Scenario 6*: All enrollees are QMB Plus beneficiaries living in a state with a lesser-of physician payment policy

For each scenario, the average probability was calculated for all enrollees in the sample under different values of QMB status and payment policy. For example, the average predicted probability of utilization for the population under the counterfactual scenario that everyone is QMB Only in a lesser-of physician payment state (*Scenario 5*) is calculated by the average of the predicted probabilities that would result if artificially set the LP and QMB Only indicators to 1 for everyone in the sample. This calculation is illustrated by the equation below:

$$\frac{1}{N}\sum_{i}\frac{\exp(\beta_x X_{ij} + \theta + \gamma_1 + \boldsymbol{\gamma_3})}{1 + \exp(\beta_x X_{ij} + \theta + \gamma_1 + \boldsymbol{\gamma_3})}$$

To construct *Scenario 4,* the indicator for QMB Only was turned off while leaving the LP indicator unchanged. This calculation is illustrated below:

$$\frac{1}{N}\sum_{i}\frac{\exp(\beta_x X_{ij} + \theta)}{1 + \exp(\beta_x X_{ij} + \theta)}$$

Appendix G: Detailed Regression Results

A. Medicare Outpatient Services

Table G.1. Office Visit Services, Method: Binary Logit (N=4,578,568)

Regressor	Coefficient
Intercept	-1.7014*
QMB Only	-0.0986*
QMB Plus	-0.0797*
"Lesser-of" State	0.0867*
QMB Only in "Lesser-of" State	-0.0843*
QMB Plus in "Lesser-of" State	-0.029*
Race	
African American	-0.0333*
Asian/Pacific Islander	0.0174*
Hispanic	-0.0822*
American Indian/Alaskan Native	-0.0388*
Other	-0.0136
Age	-0.00139*
Female	0.0792*
Original Reason for Medicare Eligibility	
Disability Insurance Benefitsa	-0.0455*
End-stage Renal Disease (ESRD)[a]	0.4578*
Disability Insurance and ESRD[a]	0.4618*
Long-Term Care Use (2008)	-0.0783*
Office Visit Service Use (2008)	0.2191*
Condition Count (2008)	0.2374*
Square of Condition Count (2008)	-0.017*
Mental Health Diagnosis (2008)	-0.159*
Medicare Advantage Penetration (CBSA)	0.00169*
Median Household Income (CBSA)	<.001
Primary Care Physicians per 10,000 (CBSA)	0.0131*
Specialists per 10,000 (CBSA)	0.00326*
Summary Statistics	
C-Statistic	0.835
n	4,578,568

* p-value < .05

[a] Omitted category is Old Age and Survivor's Benefits (65+)

Table G.2. Hospital Outpatient Services, Method: Binary Logit (N=4,578,568)

Regressor	Coefficient
Intercept	-1.0147*
QMB Only	0.0438*
QMB Plus	-0.0268*
Physician Lesser-of State	0.1508*
QMB Only in Physician "Lesser-of" State	0.0932*
QMB Plus in Physician "Lesser-of" State	-0.0375*
Race	
African American	0.0286*
Asian/Pacific Islander	-0.464*
Hispanic	-0.159*
American Indian/Alaskan Native	0.297*
Other	-0.2493*
Age	-0.00256*
Female	0.2112*
Original Reason for Medicare Eligibility	
Disability Insurance Benefitsa	0.046*
End-stage Renal Disease (ESRD)[a]	0.5068*
Disability Insurance and ESRD[a]	0.5737*
Long-Term Care Use (2008)	-0.0448*
Hospital Outpatient Service Use (2008)	0.2088*
Condition Count (2008)	0.3079*
Square of Condition Count (2008)	-0.026*
Mental Health Diagnosis (2008)	-0.0706*
Medicare Advantage Penetration (CBSA)	<.001
Median Household Income (CBSA)	<.001*
Short Term Beds per 10,000 (CBSA)	<.001*
Summary Statistics	
C-Statistic	0.777
n	4,578,568

* p-value < .05

[a] Omitted category is Old Age and Survivor's Benefits (65+)

Table G.3. Mental Health Services, Method: Binary Logit (N=263,966)

Regressor	Coefficient
Intercept	-3.9856*
QMB Only	-0.0316
QMB Plus	-0.0449
Physician Lesser-of State	-0.1933*
QMB Only in Physician "Lesser-of" State	-0.1082
QMB Plus in Physician "Lesser-of" State	-0.1153*
Race	
African American	-0.0994*
Asian/Pacific Islander	0.0401
Hispanic	-0.091
American Indian/Alaskan Native	-0.8202*
Other	-0.0156
Age	-0.012*
Female	0.0064
Original Reason for Medicare Eligibility	
Disability Insurance Benefitsa	-0.0862
End-stage Renal Disease (ESRD)[a]	-0.3232
Disability Insurance and ESRD[a]	-0.7032*
Long-Term Care Use (2008)	-0.0028
Mental Health Service Use (2008)	0.2092*
Condition Count (2008)	0.1417*
Square of Condition Count (2008)	-0.00169
Medicare Advantage Penetration (CBSA)	<.001
Median Household Income (CBSA)	<.001
Primary Care Providers per 10,000 (CBSA)	<.001*
Summary Statistics	
C-Statistic	0.801
n	263,966

*p-value < .05

[a] Omitted category is Old Age and Survivor's Benefits (65+)

Note: Sample limited to individuals with a mental health condition as defined by the CCW in 2008

B. Medicare Inpatient and Institutional Services

Table G.4. Hospital Inpatient Services, Method: Binary Logit (N=4,578,568)

Regressor	Coefficient
Intercept	-4.0202*
QMB Only	0.0215
QMB Plus	-0.026*
Physician Lesser-of State	-0.0156*
QMB Only in Physician "Lesser-of" State	0.0112
QMB Plus in Physician "Lesser-of" State	0.00984
Race	
African American	0.0853*
Asian/Pacific Islander	-0.3926*
Hispanic	-0.1072*
American Indian/Alaskan Native	0.0916*
Other	-0.2125*
Age	0.0173*
Female	-0.0107*
Original Reason for Medicare Eligibility	
Disability Insurance Benefitsa	0.3367*
End-stage Renal Disease (ESRD)[a]	1.2321*
Disability Insurance and ESRD[a]	1.2089*
Long-Term Care Use (2008)	-0.0169*
Hospital Inpatient Service Use (2008)	0.4343*
Condition Count (2008)	0.3481*
Square of Condition Count (2008)	-0.021*
Mental Health Diagnosis (2008)	-0.0624*
Medicare Advantage Penetration (CBSA)	<.001*
Median Household Income (CBSA)	<.001*
Short Term Beds per 10,000 (CBSA)	<.001*
Summary Statistics	
C-Statistic	0.708
n	4,578,568

* p-value < .05

[a] Omitted category is Old Age and Survivor's Benefits (65+)

Table G.5. Skilled Nursing Facility Services, Method: Binary Logit (N=800,936)

Regressor	Coefficient
Intercept	-6.6654*
QMB Only	-0.2535*
QMB Plus	-0.1636*
Physician Lesser-of State	0.00755
QMB Only in Physician "Lesser-of" State	-0.0357
QMB Plus in Physician "Lesser-of" State	0.1883*
Race	
African American	-0.0905*
Asian/Pacific Islander	-0.2946*
Hispanic	-0.347*
American Indian/Alaskan Native	-0.2958*
Other	-0.1731*
Age	0.0451*
Female	0.2808*
Original Reason for Medicare Eligibility	
Disability Insurance Benefitsa	0.1863*
End-stage Renal Disease (ESRD)[a]	0.1556*
Disability Insurance and ESRD[a]	0.3214*
Long-Term Care Use (2008)	0.117*
Skilled Nursing Facility Service Use (2008)	0.5107*
Condition Count (2008)	0.0514*
Square of Condition Count (2008)	-0.00058
Mental Health Diagnosis (2008)	0.1519*
Medicare Advantage Penetration (CBSA)	<.001*
Median Household Income (CBSA)	<.001*
Skilled Nursing Facility Beds per 10,000 (CBSA)	<.001*
Summary Statistics	
C-Statistic	0.729
n	800,936

*p-value < .05

[a] Omitted category is Old Age and Survivor's Benefits (65+)

Note: Sample is limited to enrollees with an inpatient hospitalization within the first six months of the study period

C. Access to Care Indicators

Table G.6. Emergency Room Services, Method: Binary Logit (N=4,578,568)

Regressor	Coefficient
Intercept	-2.853*
QMB Only	0.211*
QMB Plus	0.1878*
Physician Lesser-of State	0.0341*
QMB Only in Physician "Lesser-of" State	0.1475*
QMB Plus in Physician "Lesser-of" State	-0.0293*
Race	
African American	0.2027*
Asian/Pacific Islander	-0.6589*
Hispanic	-0.1383*
American Indian/Alaskan Native	0.1172*
Other	-0.3204*
Age	0.00473*
Female	0.1052*
Original Reason for Medicare Eligibility	
Disability Insurance Benefitsa	0.3956*
End-stage Renal Disease (ESRD)[a]	0.696*
Disability Insurance and ESRD[a]	0.7756*
Long-Term Care Use (2008)	-0.0234*
Emergency Room Service Use (2008)	0.5222*
Condition Count (2008)	0.2348*
Square of Condition Count (2008)	-0.0128*
Mental Health Diagnosis (2008)	0.115*
Medicare Advantage Penetration (CBSA)	-0.00453*
Median Household Income (CBSA)	< 0.001*
Short Term Beds per 10,000 (CBSA)	0.0023*
Summary Statistics	
C-Statistic	0.697
n	4,578,568

* p-value < .05

[a] Omitted category is Old Age and Survivor's Benefits (65+)

Table G.7. Hospitalizations for Ambulatory Care-Sensitive Conditions, Method: Binary Logit (N=3,677,593)

Regressor	Coefficient
Intercept	-6.543*
QMB Only	0.1409*
QMB Plus	0.0957*
Physician Lesser-of State	-0.0487*
QMB Only in Physician "Lesser-of" State	0.1797*
QMB Plus in Physician "Lesser-of" State	0.00521
Race	
African American	0.164*
Asian/Pacific Islander	-0.225*
Hispanic	-0.0758*
American Indian/Alaskan Native	0.193*
Other	-0.4227*
Age	0.0278*
Female	-0.0529*
Original Reason for Medicare Eligibility	
Disability Insurance Benefitsa	0.4813*
End-stage Renal Disease (ESRD)[a]	0.9893*
Disability Insurance and ESRD[a]	1.0823*
Long-Term Care Use (2008)	-0.0151*
Hospitalization for Ambulatory Care-Sensitive Condition (2008)	1.4162*
Condition Count (2008)	0.4894*
Square of Condition Count (2008)	-0.0266*
Mental Health Diagnosis (2008)	-0.1603*
Medicare Advantage Penetration (CBSA)	<.001*
Median Household Income (CBSA)	<.001*
Short Term Beds per 10,000 (CBSA)	<.001*
Summary Statistics	
C-Statistic	0.732
n	800,936

* p-value < .05

[a] Omitted category is Old Age and Survivor's Benefits (65+)

Note: Sample is limited to enrollees with at least one chronic condition as defined by the CCW

Appendix H: Odds Ratios for Key Covariates

The odds ratios for key covariates are provided below in order to show the relative likelihood of service utilization for various beneficiary groups based on factors such as demographics, long-term care use, and the concentration of providers in the area.

A. Medicare Outpatient Services

As shown in **Table H.1**, the likelihood of office visit service and hospital outpatient service use varied by race group, and the relative odds between race groups varied across models. For example, Hispanic enrollees were more likely to use office visit services relative to White enrollees, but the opposite is true when comparing the relative odds of using hospital outpatient services. Factors that were consistently associated with a higher likelihood of utilizing office visit and hospital outpatient services included being female, becoming Medicare eligible due to ESRD or ESRD and disability, having high utilization in the prior year, and having a larger number of chronic conditions. Enrollees who lived in a long term care residence or who had a mental health condition experienced lower likelihood of using these services. Measures of concentration of providers in the area, such as the number of PCP and specialist per 10,000, increased the likelihood of utilization of office visits services, but these measures did not impact the likelihood of hospital outpatient service utilization.

The mental health logistic model, which was estimated on the population who had a mental health condition, shows slightly different results. Prior utilization and being female were also associated with higher use, but the reason for Medicare eligibility or long term care residence status did not have a significant impact.

Table H.1. Logistic Regression Models for Medicare Outpatient Services Utilization

Covariate	Office Visit Services	Office Visit Services	Hospital Outpatient Services	Hospital Outpatient Services	Mental Health Services[1]	Mental Health Services[1]
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Race						
African American	0.967*	0.96-0.975	1.029*	1.022-1.036	0.905	0.819-1.001
Asian/Pacific Islander	0.986	0.963-1.01	0.779*	0.762-0.797	0.984	0.705-1.374
Hispanic	1.018*	1.006-1.03	0.629*	0.622-0.636	1.041	0.84-1.29
American Indian/ Alaskan Native	0.921*	0.912-0.93	0.853*	0.846-0.86	0.913	0.809-1.03
Other	0.962*	0.935-0.99	1.346*	1.31-1.383	0.44*	0.29-0.669
Age	0.999*	0.998-0.999	0.997*	0.997-0.998	0.988*	0.985-0.991
Female	1.082*	1.078-1.087	1.235*	1.23-1.24	1.006	0.946-1.07

Covariate	Office Visit Services	Office Visit Services	Hospital Outpatient Services	Hospital Outpatient Services	Mental Health Services[1]	Mental Health Services[1]
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Original Reason for Medicare Eligibility						
Disability Insurance Benefits°	0.955*	0.949-0.962	1.047*	1.04-1.054	0.917	0.84-1.002
End-stage Renal Disease (ESRD)°	1.581*	1.517-1.647	1.66*	1.593-1.729	0.724	0.368-1.422
Disability Insurance and ESRD°	1.587*	1.537-1.639	1.775*	1.718-1.834	0.495*	0.265-0.924
Long Term Care Use (2008)	0.925*	0.923-0.926	0.956*	0.955-0.957	0.997	0.988-1.007
Office Visit Service Use (2008)	1.245*	1.244-1.246				
Outpatient Service Use (2008)			1.232*	1.231-1.233		
Mental Health Service Use (2008)					1.233*	1.226-1.239
Condition Count (2008)	1.268*	1.264-1.273	1.361*	1.356-1.365	1.152*	1.085-1.224
Square of Condition Count (2008)	0.983*	0.983-0.984	0.974*	0.974-0.975	0.998	0.993-1.003
Mental Health Diagnosis (2008)	0.853*	0.843-0.863	0.932*	0.923-0.941		
Medicare Advantage Penetration (CBSA)	1.002*	1.001-1.002	1	1	1.001	0.998-1.004
Median Household Income (CBSA)	1	1	1+	1	1	1
Primary Care Physicians per 10,000 (CBSA)	1.013*	1.012-1.014			1.026*	1.01-1.041
Specialists per 10,000 (CBSA)	1.003*	1.002-1.004				
Short Term Beds per 10,000 (CBSA)			1+	1		
Summary Statistics						
C-Statistic	0.835		0.777		0.801	
N	4,578,568		4,578,568		263,966	

* P-Value < .05

[1] Sample limited to individuals with a mental health condition as defined by the CCW in 2008

° Omitted category is Old Age and Survivor's Benefits (65+)

\+ Statistically significant but very small effect, yielding values that round to 1

B. Medicare Inpatient and Institutional Services

As shown in **Table H.2**, for both type of services, factors associated with higher odds of utilization include being older, having multiple chronic conditions and becoming eligible for Medicare for a reason other than age. Enrollees who reside in CBSAs with larger concentration of providers and higher median household income also experience slightly higher likelihood of using inpatient and skilled nursing facility services. The likelihood of service use varied by race group, with the pattern differing by service setting. Females have significantly higher odds of skilled nursing facility service use relative to males, but lower odds of inpatient service use.

Table H.2. Logistic Regression Models for Medicare Inpatient & Institutional Service Utilization

Covariate	Hospital Inpatient Services	Hospital Inpatient Services	Skilled Nursing Facility Services[1]	Skilled Nursing Facility Services[1]
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Race				
African American	1.089*	1.079-1.099	0.914*	0.893-0.934
Asian/Pacific Islander	0.809*	0.781-0.837	0.841*	0.771-0.917
Hispanic	0.675*	0.664-0.687	0.745*	0.714-0.777
American Indian/Alaskan Native	0.898*	0.887-0.91	0.707*	0.685-0.73
Other	1.096*	1.057-1.136	0.744*	0.676-0.819
Age	1.017*	1.017-1.018	1.046*	1.045-1.047
Female	0.989*	0.984-0.995	1.324*	1.307-1.342
Original Reason for Medicare Eligibility				
Disability Insurance Benefits°	1.4*	1.388-1.413	1.205*	1.181-1.229
End-stage Renal Disease (ESRD)°	3.428*	3.291-3.571	1.168*	1.049-1.301
Disability Insurance and ESRD°	3.35*	3.247-3.456	1.379*	1.273-1.494
Long Term Care Use (2008)	0.983*	0.982-0.985	1.124*	1.121-1.127
Hospital Inpatient Service Use (2008)	1.544*	1.539-1.548		
Skilled Nursing Facility Service Use (2008)			1.667*	1.647-1.686
Condition Count (2008)	1.416*	1.41-1.423	1.053*	1.043-1.063
Square of Condition Count (2008)	0.979*	0.979-0.98	0.999	0.998-1.001
Mental Health Diagnosis (2008)	0.939*	0.928-0.951	1.164*	1.136-1.193
Medicare Advantage Penetration (CBSA)	1+	1-1.001	1.001*	1-1.001
Median Household Income (CBSA)	1+	1	1+	1
Short Term Beds per 10,000 (CBSA)	1+	1		
Skilled Nursing Facility Beds per 10,000			1.004*	1.004-1.005
Summary Statistics				
C-Statistic	0.708		0.729	
n	4,578,568		800,936	

* P-Value < .05

[1]Sample is limited to enrollees with an inpatient hospitalization within the first six months of the study period

° Omitted category is Old Age and Survivor's Benefits (65+)

\+ Statistically significant but very small effect, yielding values that round to 1

C. Access to Care

As shown in **Table H.3**, relative to White enrollees, African-American and Other enrollees have higher odds of using the emergency room and of having an ACSC related hospitalization during the observation period. In contrast, Hispanic, Asian/Pacific Islander, and American Indian/Alaskan Native enrollees were less likely than White enrollees to have these types of events. Factors consistently associated with a higher likelihood of experiencing these events include higher age, gaining Medicare eligibility for a reason other than aging, having multiple chronic conditions, and using similar services in the year prior to the measurement period. Enrollees residing in CBSA with higher median household income and higher number of short term beds were slightly more likely to use ER services and to have an ACSC related hospitalization. Long term care residence status in the year prior to the measurement period was negatively associated with emergency room service and ACSC hospitalizations. Females had higher odds of using emergency room services relative to men (OR: 1.11, CI: 1.105, 1.117), but were less likely to experience an ACSC related hospitalization (OR: 0.948 CI: 0.939, 0.958).

Table H.3. Logistic Regression Models for Access to Care Measures

Covariate	Emergency Room Services	Emergency Room Services	ACSC Related Hospitalizations[1]	ACSC Related Hospitalizations[1]
	Odds Ratio	95% Confidence Interval	Odds Ratio	95% Confidence Interval
Race				
African American	1.225*	1.215-1.234	1.178*	1.16-1.197
Asian/Pacific Islander	0.726*	0.705-0.747	0.798*	0.75-0.85
Hispanic	0.517*	0.509-0.526	0.655*	0.636-0.676
American Indian/Alaskan Native	0.871*	0.862-0.88	0.927*	0.907-0.947
Other	1.124*	1.092-1.158	1.213*	1.145-1.285
Age	1.005*	1.004-1.005	1.028*	1.028-1.029
Female	1.111*	1.105-1.117	0.948*	0.939-0.958
Original Reason for Medicare Eligibility				
Disability Insurance Benefits°	1.485*	1.474-1.496	1.618*	1.595-1.642
End-stage Renal Disease (ESRD)°	2.006*	1.928-2.086	2.689*	2.509-2.884
Disability Insurance and ESRD°	2.172*	2.109-2.237	2.951*	2.807-3.103
Long Term Care Use (2008)	0.977*	0.976-0.978	0.985*	0.983-0.987
Emergency Room Service Use (2008)	1.686*	1.681-1.69		
Hospitalized For Ambulatory Care Sensitive Condition (2008)			4.122*	4.071-4.173
Condition Count (2008)	1.265*	1.26-1.269	1.631*	1.616-1.647
Square of Condition Count (2008)	0.987*	0.987-0.988	0.974*	0.973-0.975
Mental Health Diagnosis (2008)	1.122*	1.11-1.133	0.852*	0.836-0.868
Medicare Advantage Penetration (CBSA)	0.995*	0.995-0.996	0.999*	0.999-1.0
Median Household Income (CBSA)	1[+]	1	1[+]	1

Covariate	Emergency Room Services Odds Ratio	Emergency Room Services 95% Confidence Interval	ACSC Related Hospitalizations[1] Odds Ratio	ACSC Related Hospitalizations[1] 95% Confidence Interval
Short Term Beds per 10,000 (CBSA)	1.002*	1.002	1.001*	1.001
Summary Statistics				
C-Statistic	0.697		0.732	
N	4,578,568		800,936	

* P-Value < .05
[1] Sample is limited to enrollees with at least one chronic condition as defined by the CCW
° Omitted category is Old Age and Survivor's Benefits (65+)
+ Statistically significant but very small effect, yielding values that round to 1