

FINAL REPORT

**ESTIMATING THE IMPACTS OF
MEDICAID MANAGED CARE IN RURAL MINNESOTA**

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EXECUTIVE SUMMARY

Perhaps the single largest Medicaid policy initiative during the 1990s was shifting program beneficiaries into managed care. By 2000, more than 19 million Medicaid beneficiaries (56 percent) were enrolled in some type of managed care, up from about 1.5 million (less than 10 percent) in 1990 (CMS 2002 and Congressional Research Service 1993). The share of the Medicaid population enrolled in Medicaid managed care (MMC) is likely to continue to increase, especially in rural areas, as the Balanced Budget Act (BBA) of 1997 substantially expanded the authority of states to provide Medicaid services through managed care.

States have turned to MMC to achieve a variety of objectives, including improving beneficiaries' access to care while controlling Medicaid spending (Rowland et al. 1995; Holahan et al. 1998; Davidson and Somers 1998). Given the magnitude of the shift to managed care across the Medicaid program, determining whether MMC achieved those goals is an important policy question. Answering this question, however, has proved to be difficult. Though several studies have examined the effects of MMC on beneficiaries, the results are mixed (Hurley and Zuckerman 2002).

Owing to data constraints, most studies are limited to a single framework, which limits the ability to examine the sensitivity of the findings to alternative methods. Comparison groups are typically constructed on the basis of two factors: time and population characteristics. Because neither time- nor population-based comparison groups are selected through random assignment, both are susceptible to confounding factors that could affect the outcome of interest. Thus, the estimates of program impacts obtained using such methods may be incorrect. These limitations can be overcome to some extent by combining time- and population-based

comparison groups in a difference-in-differences framework (e.g., Tai-Seale, Freund, and LaSasso 2001) and comparing changes over time for the treatment group to changes over the same time period for a matched comparison group.

In this paper we assess the impact of Minnesota’s 1115 managed care demonstration project—the Prepaid Medical Assistance Program (PMAP)—on access to and use of health care services using quasi-experimental alternative evaluation designs. Taking advantage of the gradual introduction of Medicaid managed care (MMC) across counties in rural Minnesota, we use pre-post, matched comparison group, and difference-in-differences methods to compare beneficiaries in counties that implemented PMAP to beneficiaries in counties that continued to operate traditional fee-for-service (FFS) Medicaid. The study uses two rounds of a survey of MMC and Medicaid FFS beneficiaries in rural Minnesota, conducted in 1998 and 2000.

We find that the estimates of the impact of MMC on access and use of care are sensitive to the evaluation design employed. Evidence of significantly improved access to care and, to a lesser extent, use under MMC is found using pre-post differences, while matched-population differences indicate many fewer impacts. Difference-in-differences estimates, the strongest design used, find access to and use of care to be virtually identical under MMC and FFS Medicaid.

While evaluations of health policy initiatives often must rely on quasi-experimental methods, our results highlight the importance of using multiple evaluation techniques to assess the sensitivity and the robustness of the findings. Depending upon the design method, we found very different policy conclusions on the impacts of MMC. All quasi-experimental approaches are imperfect, but using multiple methods and multiple comparison groups can help ensure that that the information provided in support of policy decisions is as reliable as possible.

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Introduction

Perhaps the single largest Medicaid policy initiative during the 1990s was shifting program beneficiaries into managed care. By 2000, more than 19 million Medicaid beneficiaries (56 percent) were enrolled in some type of managed care, up from about 1.5 million (less than 10 percent) in 1990 (CMS 2002 and Congressional Research Service 1993). Today, all states except Alaska and Wyoming operate Medicaid managed care (MMC) programs. The bulk of these programs are in urban areas, as states have had difficulty in extending MMC to rural areas (Moscovice et al. 1998; Slifkin et al. 1998). The share of the Medicaid population enrolled in MMC is likely to continue to increase, especially in rural areas, as the Balanced Budget Act (BBA) of 1997 substantially expanded the authority of states to provide Medicaid services through managed care. Among other things, the BBA allows states to implement mandatory MMC programs without seeking a waiver and removes the requirement that more than one health plan be offered in rural areas.

States have turned to MMC to achieve a variety of objectives, including improving beneficiaries' access to care while controlling Medicaid spending (Rowland et al. 1995; Holahan et al. 1998; Davidson and Somers 1998). Given the magnitude of the shift to managed care across the Medicaid program, determining whether MMC achieved those goals is a very important policy question. Answering this question, however, has proved to be difficult. Though several studies have examined the effects of MMC on beneficiaries, the results are mixed (Hurley and Zuckerman 2002). Many of the existing studies examine first-generation MMC demonstrations that were in place more than a decade ago. Early MMC models were generally voluntary rather than mandatory programs, and often primary care case management programs rather than fully capitated managed care programs (Hurley, Freund and Paul 1993).

Studies of more recent MMC models (mandatory and fully capitated) have also yielded mixed results, due in part to the many methodological challenges to obtaining reliable estimates (Hurley and Zuckerman 2002; Gold 1999). One of the biggest hurdles is in identifying a group of Medicaid beneficiaries that remain on FFS to compare to the beneficiaries who shift to MMC. Another challenge is to obtain baseline data on beneficiaries' access to care prior to the implementation of MMC.

In this paper we take advantage of a new survey of Medicaid beneficiaries that provides both good comparison groups for Medicaid beneficiaries in managed care and good baseline data for both the managed care group and the comparison groups. We use these data to evaluate the effects of MMC in rural Minnesota. Specifically, using data from 1998 and 2000 surveys, we estimate the impacts of Minnesota's 1115 managed care demonstration project—the Prepaid Medical Assistance Program (PMAP)—by comparing beneficiaries in counties that implemented PMAP to beneficiaries in counties that continued to operate traditional fee-for-service (FFS) Medicaid. Although we focus on a single state, the economic and health care environment in rural Minnesota is similar to that of other rural areas of the Midwest, which together account for about one-third of all rural counties in the United States.

The current study provides an advance over previous research on the impacts of MMC on a number of fronts. First, we obtain estimates of the impacts of MMC in rural areas, an area of MMC expansion in many states. Second, we obtain estimates using multiple evaluation approaches, increasing our confidence in the reliability of our findings. Owing to data constraints, most studies are limited to a single framework, which limits the ability to examine the sensitivity of the findings to alternative methods. For example, our earlier work estimating the impacts of MMC in rural Minnesota was limited to a single round of the survey (1998) and a

single evaluation method (Long and Coughlin 2001; Coughlin and Long 2000). Finally, we estimate the impacts of MMC on both adults and children separately. By contrast, much of the existing research on MMC focuses on adults, or adults and children combined. As a result, little is known about the effects of MMC on children (Deal, Shiono and Behrman 1998; Freund and Lewit 1993; Hurley, Freund and Paul 1993).

Minnesota's Prepaid Medical Assistance Program

PMAP was one of the original Section 1115 Medicaid competition demonstration sites (Heinen et al. 1990, Freund et al. 1989). PMAP began in 1985 in three counties and slowly expanded into other counties, primarily counties located in the Minneapolis/St. Paul metropolitan area, over a number of years. In 1995, Minnesota received another Section 1115 waiver, which, among other things, gave the state the authority to expand PMAP statewide. That expansion, which began in January 1996, was primarily to rural counties. At the time, rural counties in Minnesota had only limited commercial managed care penetration (Rural Health Research Center 1997).

When the waiver began, the state intended to complete the implementation of MMC across all counties in the state by 1997. However, significant resistance from a range of rural stakeholders, including county officials, medical and allied providers, and consumer advocacy groups slowed the process substantially (Kendall et al. 2001). Such resistance is not uncommon as states attempt to implement MMC in rural areas (Slifkin et al. 1998). In Minnesota, county officials feared the loss of Medicaid revenues and potential cost-shifting from health plans. Providers opposed PMAP either because they wished to avoid managed care or because they feared being left out of managed care networks. Consumer groups feared the possibility that plans would “ration care” under managed care. Minnesota responded to these concerns by

offering counties a greater role in the PMAP design and implementation process, and allowing counties to assume the role of the managed care plan as part of a county-based purchasing (CBP) model. Over time resistance to MMC faded in most counties, so that as of 2002, Minnesota had been successful at implementing PMAP in most of its rural counties. However, several counties continued to operate FFS Medicaid while pursuing CBP models.

Statewide, nine health plans participate in the PMAP demonstration: seven HMOs, one health insuring organization, and one community integrated service network. All are non-profit by state law and, as a condition of health plan licensure, all must bid to serve public populations in their service areas. Most of the plans serve both commercial and Medicaid populations; however, three are primarily Medicaid plans. Minnesota pays all plans on a prepaid, capitated basis. The state sets capitation rates 10 percent below what they estimate FFS costs would have been without MMC. As is true under MMC in many states, health plans under PMAP generally do not capitate providers: providers are paid discounted FFS.¹ In Minnesota, plans have tended to pay physicians above the rates paid by the state under FFS Medicaid.

Methods

Evaluation Design

In an ideal world estimates of the impacts of MMC would be derived using a controlled randomized study design. That is, Medicaid beneficiaries would be randomly assigned to either a treatment group or to a control group. The treatment group would be enrolled in managed care, while the control group would continue to receive care through the traditional Medicaid FFS.

Randomization would ensure that the Medicaid beneficiaries in the treatment and control groups

¹The tendency of managed care organizations to pay providers on a discounted FFS basis is common in rural areas, both as a mechanism to persuade providers to sign up with the plan and as a means of providing gradual exposure to managed care (Felt-Lisk et al. 1999).

were equivalent in everything but the influence of managed care so that the control group could provide the estimate of would have occurred had there had been no policy change—typically referred to as the “counterfactual.”

Unfortunately, random assignment is rarely feasible in most social science research, including health services research, and quasi-experimental methods must be used (Gold 1999, Moffitt and Ver Ploeg 2001).² The major challenge of quasi-experimental methods is to identify a comparison group to serve as the counterfactual that approximates what would have happened had the policy change (in our case, the introduction of managed care) *not* been implemented. If the comparison group is a close match to the treatment group on both observed and unobserved characteristics, the estimates obtained using quasi-experimental methods will approach those obtained by a true experiment. However, if the comparison group differs from the treatment group in ways that are not controlled in the analysis, then the quasi-experimental estimates may be incorrect.

Comparison groups are typically constructed on the basis of two factors: time (i.e., before and after or “pre-post” studies, such as Griffin et al. (1999) and Cebul (2000)) and population characteristics (i.e., matched population studies, such as McCall, Jay and West (1989); Long and Coughlin (2001) and Mitchell et al. (2002)). Because neither time- nor population-based comparison groups are selected through random assignment, both are susceptible to confounding factors that could affect the outcome of interest. Thus, the estimates of program impacts obtained using such methods may be incorrect.

In an analysis of the impacts of managed care, for example, a pre-post comparison is susceptible to the impacts of changes over time beyond the move to managed care (e.g., welfare

reform or economic expansion). Such broader changes make it difficult to disentangle the effects of the shift to managed care from other factors. Likewise, estimates based on the comparison of matched populations are susceptible to the influence of differences between the groups beyond enrolling beneficiaries into managed care (e.g., differences in the health care environment faced by the two populations or differences in attitudes toward health care among the members of the two groups). As in the pre-post model, this makes it difficult to determine which changes are due to MMC and which reflect other differences between the groups.

These limitations can be overcome to some extent by combining time- and population-based comparison groups in a difference-in-differences framework (e.g., Tai-Seale, Freund, and LaSasso 2001). Under the difference-in-differences framework, changes over time for the treatment group (the first “difference”) are compared to changes over the same time period for a matched comparison group (the second “difference”). The key assumption underlying the difference-in-differences approach is that the evolution of the outcome for the treatment group would be the same as that of the comparison group in the absence of MMC. If this assumption is satisfied, the difference-in-differences approach will control for the confounding factors that could also affect the outcome of interest. However, the risk under this design is that the two groups are different over time in their unobserved characteristics (e.g., changes in who enrolls in Medicaid over time in the treatment or comparison sites) and that those differences--rather than the impact of managed care--account for the observed differences in changes in access. Use of the difference-in-differences method in evaluating the impacts of MMC is rare because of the

² There has been at least one study that has used random assignment in an assessment of the impacts of MMC: Leibowitz, Buchanan, and Mann (1992) were able to undertake random assignment in a study of the effects of a single HMO operating under a voluntary managed care program.

data demands of the system: a good comparison group and consistent data over time for both the treatment and comparison groups.

In this paper we take advantage of the gradual introduction of MMC across counties in rural Minnesota to obtain estimates of the impacts of managed care using alternate quasi-experimental designs. To our knowledge, this is the first time that alternative evaluation methods have been used to examine the sensitivity of the estimates of impacts of managed care on beneficiaries. To preview our findings, the estimates of the impact of MMC on access and use of services are sensitive to the quasi-experimental study design employed. Evidence of significantly improved access to care and, to a less extent, use of services under MMC is found using pre-post differences, while matched-population differences indicate many fewer impacts. Difference-in-differences estimates find access to care to be virtually identical under MMC and FFS Medicaid.

To conduct the study, we use data from 1998 and 2000 surveys of Medicaid beneficiaries in 35 rural counties in Minnesota. In 1998 those counties were all operating Medicaid FFS. By 2000, approximately half of the counties had transitioned to MMC, while the remainder continued to operate Medicaid FFS. Using these data we estimate the impacts of MMC on beneficiaries through:

Pre-post differences: Within the counties that shifted from Medicaid FFS to MMC by 2000, access and use of services by Medicaid beneficiaries following the implementation of managed care (i.e., in 2000) are compared to the experiences of beneficiaries prior to the implementation of managed care (i.e., in 1998). This corresponds to the difference A - B in Figure 1.

Matched population differences: Access and use of services by Medicaid beneficiaries in counties that implemented MMC are compared to the experiences of beneficiaries in a selected group of similar counties (i.e., “matched” counties) that remained under Medicaid FFS in 2000. This corresponds to A - C in Figure 1.

Difference-in-differences: Changes between 1998 and 2000 in access and use for Medicaid beneficiaries in the MMC counties (A-B) are compared to changes over the same time period for beneficiaries in the counties that remained Medicaid FFS (C-D). In Figure 1, this is (A-B)-(C-D) or, equivalently, (A-C)-(B-D). A positive (negative) sign for this term indicates that access increased more (less) among beneficiaries in MMC counties than those in FFS counties.

In addition to obtaining impact estimates using the three alternate frameworks, we also explored the use of different combinations of treatment and comparison counties to determine whether the particular group of treatment or comparison counties used in the study affected the findings.

Data

Surveys of Medicaid Beneficiaries in 1998 and 2000

The study uses two rounds of a survey of Medicaid beneficiaries in rural Minnesota, conducted in 1998 and 2000. Minnesota was selected for study because of plans by the state to implement MMC in the rural areas of the state. Surveys of Medicaid beneficiaries in both MMC and Medicaid FFS counties were conducted in 1998 and 2000.

This study focuses on beneficiaries in 35 counties that were still operating Medicaid FFS at the time of the 1998 survey.³ At the time of the 2000 survey, 16 counties had implemented MMC (referred to as the MMC counties) while the remaining 19 counties continued to operate FFS Medicaid (referred to as the FFS counties). This study takes advantage of the differences in the timing of the implementation of MMC across the counties to obtain impact estimates using the alternative designs outlined above.

³ The 1998 survey also included interviews with Medicaid beneficiaries in the first six rural counties to implement MMC under the 1995 waiver. The data from the 1998 survey were used to estimate the impacts of MMC using a matched-population design. That analysis compared beneficiaries in the MMC counties to beneficiaries in the Medicaid FFS counties of 1998, as reported in Coughlin and Long (2000) for adults and Long and Coughlin (2001) for children.

Sample Selection

Sampling and survey fielding procedures were exactly the same for both rounds of the survey. For each round of the survey, a sample of Medicaid cases was drawn from Minnesota program enrollment files. The sample was limited to individuals eligible for Medicaid under Temporary Assistance for Needy Families (TANF) or poverty-related criteria. To ensure adequate samples of adults and children, cases were stratified into three groups: (1) cases with both adult and child enrollees, (2) cases with only adult enrollees, and (3) cases with only child enrollees. Cases were selected using probability-proportionate-to-size sample selection procedures. Within a selected case, one adult (if present) and one child (if present) were selected at random. The adult in the household who was most knowledgeable about the health care of the child served as the proxy respondent for the child. For 98 percent of children, that person was the child's parent or guardian.

Data Collection

All interviews were conducted by telephone using computer-assisted telephone interviewing techniques. Advance letters were sent to each sample household explaining the purpose of the survey and providing a toll-free telephone number that could be used to call in to complete the interview. For individuals for whom telephone contact information was not available from the enrollment files, location information was sought through a variety of sources, including the post office, directory assistance, neighbors, and credit bureau services. An overall response rate of 70 percent was achieved in both 1998 and 2000.⁴ The predominant cause of nonresponse in both rounds of the survey was an inability to locate sample members; when

⁴Our response rates compare favorably to those obtained in other social science surveys. In a recent review of surveys, Massey and others (1997) found that the median reported response rate was between 60 and 64 percent, with fewer than 20 percent of the surveys reporting response rates of 70 percent or higher.

located, nearly all sample members participated in the survey. Final sample sizes were 701 adults and 773 children in 1998 and 774 adults and 933 children in 2000.

All of the estimates provided in this study have been generated using sample weights and adjusting for the stratified design of the survey. Those weights account for differences in the selection probabilities of the cases interviewed and for demographic and socioeconomic differences between the survey respondents and nonrespondents. The latter adjustment was possible since we had information on both the respondents and nonrespondents from the Medicaid enrollment files.

Access and Use Measures

Under each of the three alternate evaluation designs, we consider how access and use of health care received under MMC compares to that received under traditional Medicaid FFS. Using the framework developed by Andersen and Aday (1978), we define two broad categories of access to care: potential access and realized access. Potential access measures characteristics of the health care system and the population, such as the presence of a usual source (location) of care, continuity of care, convenience of care and extent of unmet need.

Realized access is measured by the actual use of health care services. We examine a number of measures of utilization including visits to doctors and other health care providers, visits to specialists, visits to emergency rooms and hospital stays. The health care use measured here includes care paid for by Medicaid—either Medicaid FFS or MMC—and care paid for by other sources. To the extent that payments for some types of use have shifted from the Medicaid

program to other payers under MMC, our data will not detect this.⁵ Table 1 summarizes the outcome measures for the samples of adults and children.

The MMC and FFS Counties

Key to the analysis is the comparability of the MMC counties and the Medicaid FFS counties. The accuracy of the estimates obtained under the pre-post design depends on there being no changes other than the introduction of managed care in the MMC counties between 1998 and 2000. Similarly, accurate estimates under the matched-population design require that there be no differences between the MMC and FFS counties in 2000 other than MMC. Finally, accurate difference-in-differences estimates requires that the changes between 1998 and 2000 in the MMC counties be the same as the 1998 to 2000 changes in the FFS counties.

Table 2 compares the county groups along several dimensions, including basic population socioeconomic characteristics, the local health care market, and geographic location using county-level data from the Area Resource File and state sources. As shown in the table, the two groups of counties are very similar in both 1998 and 2000 in terms of socioeconomic characteristics and health system characteristics (e.g., doctors per 1,000 people, hospital beds per 1,000 people). An important difference between the two sets of counties is in their proximity to urban areas. The FFS counties are more likely to be adjacent to a metropolitan area and more densely populated than the MMC counties. We address this difference between the groups of counties in two ways in the analysis. First, we control for the distance between the sample member's place of residence and major health care providers in the analysis. Second, we explored alternative groupings of MMC and FFS counties, including groupings that excluded the

⁵ For example, case studies of Minnesota's managed care program have recorded complaints by the county public health departments and hospital emergency rooms that they are providing services to MMC beneficiaries that are not being reimbursed by the plan (Kendall et al. 2001).

Table 1: Summary of Outcome Measures		
Measures	Adults	Children
<u>Access</u>		
Has usual source of care (other than emergency room)	96.8%	98.0%
Usual provider is a doctor	74.5%	84.3%
Sees same provider at all or most visits	69.3%	78.2%
Provider calls to remind of appointment	36.8%	35.7%
Provider reminds when due for check-up	43.1%	43.3%
Provider provides transportation support	7.3%	6.9%
Travel time to doctor is more than 30 minutes	12.5%	19.0%
Able to talk to provider right away when need medical advice	88.8%	89.8%
Rate as good, very good or excellent:		
Convenience of location of care	91.3%	92.4%
Friendliness and courtesy of doctors	92.8%	95.1%
Amount of time spent with doctors	85.1%	90.7%
Explanation of medical procedures/tests	86.1%	91.1%
Ease of getting evening/weekend care	62.5%	65.3%
Ease of getting emergency care	81.5%	85.3%
Ease of getting prescription drugs	91.0%	93.2%
<u>Use</u>		
Had hospital stay in last year (excludes stay for delivery)	14.8%	8.0%
Had ER visit in last year (excluding falls and accidents)	29.1%	23.1%
Had visit to doctor/other provider in last year	75.0%	87.0%
Had doctor visit in last 3 months	56.1%	62.4%
Had preventative care visit in last 3 months	34.3%	39.6%
Had PAP smear in last year (women only)	78.9%	—
Had visit to specialist in last 3 months	18.4%	11.3%
Had dental visit in last year	68.1%	82.7%
<u>Unmet Need</u>		
Had any unmet need for health care in last year	58.1%	25.3%
Had unmet need for hospital care in last year	4.6%	1.1%
Had unmet need for doctor care in last year	34.6%	12.3%
Had unmet need for specialist care in last year	11.7%	4.8%
Had unmet need for mental health care in last year	5.7%	2.7%
Had unmet need for dental care in last year	40.8%	13.6%
Had unmet need for prescription drugs in last year	8.7%	3.1%
Sample size	1475	1706

Source: 1998 and 1999 surveys of Medicaid beneficiaries in Minnesota.

Table 2: Characteristics of the MMC and Medicaid FFS Counties in 1998 and 2000				
Characteristics	MMC Counties		Medicaid FFS Counties	
	2000	1998	2000	1998
<u>Socioeconomic Characteristics</u>				
Average per capita income (\$1,000s) ²	22.11	20.88	22.83	21.78
Average unemployment rate ²	3.49	3.81	3.57	3.85
Share of population under age 20 ¹	0.29	0.29	0.30	0.30
Share of population over age 64 ¹	0.19	0.20	0.18	0.19
Average monthly share of children on Medicaid ¹	0.17	0.19	0.16	0.19
<u>Health Care Environment</u>				
Average number of hospitals ²	1.63	1.69	1.42	1.42
Average number of hospital beds per 1000 people ²	8.56	8.65	7.37	7.84
Average number of doctors per 1000 people ²	0.79	0.78	0.90	0.83
<u>Geographic Location</u>				
Population density (persons/square mile) ²	24.88	25.14	34.00	33.64
Share of counties adjacent to a metro area ²	0.25	0.25	0.37	0.37
Number of counties	16	16	19	19

Sources: ¹Minnesota County Health Profiles accessed at <http://www.mnplan.state.mn.us/datanetweb>

²Area Resource File

most rural of the rural MMC counties. The basic findings are unchanged with alternative county groupings.

Methods

To estimate the impact of MMC on access and use we use multivariate models to control for differences in the characteristics of the Medicaid beneficiaries in the MMC and Medicaid FFS counties. For example, we control for measures of the individual's predisposition to use health care services, factors that enable or impede use, and the need for health care (Anderson and Aday, 1978). Predisposing factors include demographic and social characteristics (e.g., age, race, gender, education, marital status). Enabling/impeding characteristics include individual and family resources (e.g., income, employment, family size) and geographic access to health care providers. We measure the latter as the distance of the individual's residence from the nearest hospital with a trauma unit, the nearest teaching hospital, and the two largest safety net hospitals in Minnesota (Hennepin County Medical Center and Regions Hospital, both located in the Twin Cities). Finally, an individual's need for services is measured by health status, disability status, and pregnancy status.

Table 3 summarizes the characteristics of the surveyed Medicaid beneficiaries in the MMC and FFS counties in 1998 and 2000. The samples are very similar both at a point in time and between 1998 and 2000. Consistent with the differences in the proximity to urban areas between the two groups of counties, the primary difference between the samples in the MMC and FFS counties is distance from health care providers. Medicaid beneficiaries in the MMC counties are more distant from health care providers than beneficiaries in the FFS counties.

Since all of the outcomes considered in the study are binary variables we estimate logit regressions models. Full regression results that underlie the estimates reported here are available

Characteristic	Adults				Children			
	PMAP		Medicaid FFS		PMAP		Medicaid FFS	
	2000	1998	2000	1998	2000	1998	2000	1998
Age (years)	29.6	30.0	31.3	29.0	6.5	6.9	6.6	6.8
Female	83.8%	87.7%	79.2%	87.5%	48.9%	46.2%	51.8%	50.2%
White	89.7%	92.4%	86.0%	94.8%	90.0%	95.7%	86.7%	96.4%
High graduate or more	74.3%	78.8%	75.8%	81.6%	76.9%	80.9%	78.9%	83.9%
Married	37.3%	28.8%	34.8%	27.0%	52.2%	51.9%	45.7%	44.5%
Never married	35.5%	34.2%	38.2%	37.9%	23.1%	19.9%	29.1%	27.0%
Ever worked in past year	84.8%	80.1%	85.7%	88.3%	82.1%	81.5%	83.6%	81.8%
Proportion of last year on Medicaid	82.8%	85.1%	83.9%	82.1%	91.3%	90.4%	92.1%	91.7%
Proportion of last year uninsured	9.9%	9.5%	9.8%	11.6%	4.1%	5.3%	3.9%	3.7%
Family income between \$10,000 and \$20,000	39.6%	32.3%	37.4%	36.6%	34.9%	35.6%	35.8%	38.2%
Family income treater than \$20,000	29.6%	21.2%	23.1%	18.4%	41.5%	35.9%	34.5%	31.3%
Family size (number)	3.6	3.4	3.5	3.4	4.2	4.1	4.2	3.9
Sample case includes an adult and child	71.5%	80.7%	69.4%	79.5%	59.4%	55.6%	56.8%	54.5%
Reported health status is fair or poor	18.0%	18.7%	21.3%	14.5%	4.4%	7.7%	4.6%	10.0%
Has one or more selected health conditions ¹	30.8%	28.8%	34.0%	27.0%	10.9%	14.5%	13.1%	10.9%
Has low back pain	41.6%	37.3%	47.3%	42.1%	—	—	—	—
Has frequent headaches	35.0%	38.3%	39.2%	36.4%	5.0%	8.0%	6.5%	8.1%
Has mental health problems	15.7%	8.9%	18.4%	8.8%	—	—	—	—
Has impairment of health problem that limits daily activities	15.9%	18.0%	25.7%	12.5%	8.5%	10.0%	9.7%	12.1%
Has impairment that limits work or school activities	9.0%	7.9%	10.9%	4.7%	4.2%	5.7%	5.7%	6.4%
Worries about health more than others	13.4%	12.0%	12.2%	9.6%	10.9%	10.5%	10.7%	9.7%
Worries about health less than others	27.8%	20.6%	23.1%	24.7%	27.9%	21.1%	24.6%	25.6%
Smokes	52.4%	46.5%	54.5%	51.4%	—	—	—	—
Distance from nearest hospital trauma unit (miles)	50.5	55.7	34.9	36.9	50.1	54.7	34.7	37.5
Distance from nearest teaching hospitals (miles)	93.3	90.8	67.8	67.6	94.2	92.0	68.1	70.8
Distance from Twin Cities safety net hospitals (miles)	126.7	122.1	87.4	88.4	127.6	126.3	88.4	91.7
Sample size	389	316	385	385	458	351	475	422

Source: 1998 and 1999 surveys of Medicaid beneficiaries in Minnesota.

¹The health conditions for adults include pregnancy, diabetes, arthritis, heart disease, hypertension, tuberculosis, cancer and HIV/AIDS. The health conditions for children include ashtma, diabetes, heart disease, cancer and HIV/AIDS).

in an appendix. We explored the sensitivity of our results to alternative specifications of the model, including more parsimonious specifications, different combinations of MMC and Medicaid FFS counties, and limiting the sample to individuals who had been on Medicaid for the full 12 months preceding the survey.⁶ The alternative model specifications did not change the basic findings that are reported here.

To simplify the presentation, for each of three alternative quasi-experimental methods, we calculated predicted levels for each of the outcome measures first under MMC and then under FFS Medicaid. The predicted levels of the outcome measures under MMC were calculated from the regression models by assuming everyone in the sample was a MMC enrollee (regardless of their actual status). Similarly, the predicted levels under Medicaid FFS were calculated by assuming everyone in the sample was a FFS enrollee (regardless of their actual status). The difference between the two predicted levels is our estimate of the impact of enrollment in MMC on that measure. The predicted levels under MMC and FFS Medicaid and the difference between them are what we present in the text.

Results

Tables 4 and 5 summarize the findings for adults and children using the three different quasi-experimental approaches—pre-post difference, matched population difference and difference in differences. Table 4 focuses on measures of access to care and Table 5 on service use and unmet need measures. While we indicate differences that are significantly different from zero at the .10 level in the tables, the text focuses on those differences that are significant at at least the .05 level.

⁶ Many of the access and use questions asks about beneficiaries' health experiences during the past 12 months. Sixty-one percent of the adults and 80 percent of the children were on Medicaid for the full 12 months.

Measures	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
	Has a usual source of care (other than emergency room) ¹	-0.04 ***	0.02	0.01	0.01	0.01
For those with a usual source of care:						
Usual provider is a doctor	0.28 ***	0.00	0.01	0.15 ***	-0.04	0.00
Sees same provider at all or most visits	0.30 ***	-0.02	0.03	0.13 ***	0.01	-0.04
Provider calls to remind of appointment	0.16 ***	-0.12 **	-0.08	0.15 ***	-0.11 **	-0.03
Provider calls to remind when due for a check up	0.15 ***	-0.03	-0.03	0.03	-0.02	-0.06
Provider provides transportation assistance	0.08 ***	0.04	0.05	0.06 ***	-0.02	-0.02
Travel time to doctor is more than 30 minutes	-0.04	0.02	-0.02	0.07 **	0.10 ***	0.07
Able to talk to provider right away when need medical advice	-0.08 **	-0.08 **	-0.06	-0.12 ***	-0.13 ***	-0.09 *
Rate as good, very good or excellent:						
Convenience of location of care	0.01	-0.01	-0.02	-0.01	0.00	0.03
Friendliness and courtesy of doctors	0.05 *	0.00	0.05	0.00	0.01	0.05 **
Amount of time spent with doctors	0.05 *	0.01	0.10 **	-0.02	-0.01	0.02
Explanation of medical procedures/tests	-0.02	-0.01	0.00	-0.02	0.02	0.02
Ease of getting evening/weekend care	0.02	-0.13 ***	-0.09	0.00	-0.01	0.02
Ease of getting emergency care	0.02	0.02	-0.01	-0.04	0.04	0.05
Ease of getting prescription drugs	0.01	-0.04	0.01	-0.04 *	-0.03	-0.06 **
Sample size	705	774	1475	809	933	1706

Source: 1998 and 1999 surveys of Medicaid beneficiaries in Minnesota.

* (**) (***) Value is significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

¹Because all children with a impairment or health problem that limits their daily activities or their ability to attend school have a usual source of care, the estimates for this variable are based on a regression model that excludes those observations.

Table 5: Estimates of the Impacts of MMC on Use of Care and Unmet Need Using Alternate Non-experimental Study Designs						
Measures	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Use						
Had hospital stay in last year (excluding stay for delivery)	0.01	0.05	-0.05	0.01	0.02	0.00
Had ER visit in last year (excluding falls and accidents)	0.01	-0.08 **	-0.08	-0.07 *	-0.05	-0.09 **
Had visit to doctor/other provider in last year	0.12 ***	-0.02	-0.03	0.07 **	0.02	-0.03
Had visit to doctor in last 3 months	0.09 **	0.05	0.06	0.09 **	0.06	0.04
Had preventive care visit in last 3 months	0.06	0.07 *	0.04	0.06	-0.03	-0.07
Had PAP smear in last year (women only)	0.03	0.02	0.00	—	—	—
Had visit to specialist in last 3 months	0.05	0.07 **	0.02	0.00	0.01	-0.05
Had dental visit in last year	-0.01	0.05	0.01	0.00	-0.01	-0.08
Unmet Need						
Had any unmet need for health care in last year	-0.06	-0.06	-0.07	0.01	-0.02	0.01
Had unmet need for hospital care in last year	-0.03	-0.03 *	-0.02	-0.02	0.03 *	0.00
Had unmet need for doctor care in last year	-0.14 ***	-0.06	-0.05	0.00	-0.01	0.01
Had unmet need for specialist care in last year	0.03	0.02	0.01	0.03 **	-0.01	0.00
Had unmet need for mental health care in last year	-0.01	-0.02	-0.03	0.02	-0.02	0.00
Had unmet need for dental care in last year	-0.01	-0.05	-0.09 *	0.04	-0.02	0.03
Had unmet need for prescription drugs in last year	0.02	0.03	0.01	-0.01	-0.03 **	-0.02
Sample size	705	774	1475	809	933	1706

Source: 1998 and 1999 surveys of Medicaid beneficiaries in Minnesota

* (**) (***) Value is significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

Access to Care

Pre-post differences. Under the pre-post framework, which compares Medicaid beneficiaries under MMC in 2000 to FFS beneficiaries in 1998, we find significant changes in access to care with the introduction of managed care (Table 4). Most notably, adults are less likely to have a usual source of care under MMC than Medicaid FFS and, consistent with that, are less likely to report that they are able to talk to a provider right away when they need medical advice. However, among those adults who do have a usual source of care, we find a significant improvement in access to care under MMC. Relative to FFS, adults enrolled in managed who reported having with a usual source of care are more likely to have a doctor as their usual provider, more likely to see the same doctor at all or most visits, and more likely to receive support from their provider through phone calls, check-up reminders, and transportation assistance. They are also more likely than adults on Medicaid FFS to rate the friendliness and courtesy of their doctors as good, very good, or excellent.

Roughly similar patterns are found for children under MMC using the pre-post design. Like the adults, children enrolled in a MMC program are more likely to have a doctor as their usual source of care, to have greater continuity of care, and to receive more support from their providers than children still in Medicaid FFS. While children are no less likely to have a usual source of care under MMC than FFS, the parents of the children in MMC are less likely to report that they are able to talk to a provider right away for medical advice.

Matched-population differences. Unlike the pre-post differences, estimates derived from the matched-population framework—which compares beneficiaries in MMC counties to beneficiaries in FFS counties in 2000—indicate a more limited impact of MMC on access to care. Both adults and children under MMC are less likely to be called by their provider to

remind them of appointments and are less likely to be able to talk with a provider right away when they need advice than their counterparts under FFS. Children under MMC are also more likely to have to travel 30 minutes or more to get to the doctor, while adults under MMC are less likely to report that the ease of obtaining emergency care is good or better.

Difference-in-differences. Finally, in contrast to the impacts of MMC generated by the pre-post and matched-population designs, the difference-in-differences estimates suggest that MMC has only a very limited impact on access for either adults or children. The one difference we do find for adults suggests a positive experience under MMC relative to Medicaid FFS: Adults enrolled in MMC are more likely to rate the amount of time spent with their doctor as good, very good, or excellent. The two differences we find for children provide a mixed assessment of MMC: The parents of children enrolled in MMC are more likely to rate the friendliness and courtesy of their child's provider as good, very good, or excellent. At the same time, they are less likely to report that the ease of obtaining prescription drugs for their child is good, very good, or excellent.

Use of Care and Unmet Need

The results are more consistent across the alternate evaluation designs for the impacts of MMC on use of care and unmet need for care. Overall, compared to access impacts, we find many fewer differences in health care use and unmet need under the three alternate designs. Both the pre-post differences and the matched-population differences provide weak support for improved use of care under MMC. The pre-post differences show both adults and children as more likely to have a health care visit under MMC than FFS. MMC adults are also less likely to have unmet need for doctor care than FFS adults. The matched-population differences find MMC adults less likely than FFS adults to have an ER visit, while MMC children are less likely

to have unmet need for prescription drugs than FFS children. In contrast to the pre-post and matched-population estimates, we found no significant differences in use of care or unmet need for either adults or children using the difference-in-differences model.

Conclusions

We find that estimates of the impacts of MMC in rural Minnesota are sensitive to the study design employed. Pre-post comparisons suggest significant impacts of MMC on both adult and child beneficiaries' health care access and, to a lesser extent, use. The matched-population comparisons yielded many fewer impacts of MMC, but there was still a suggestion of some differences in access under MMC and FFS Medicaid. In contrast, the difference-in-differences estimates indicate virtually no difference between MMC and FFS Medicaid in access or use for either adults or children.

As discussed earlier, the reliability of each of the quasi-experimental designs is driven largely by the quality of the comparison group. The pre-post models assumes no differences over time in the treatment group other than MMC, whereas the matched population model assumes no differences at a point in time between the treatment and comparison groups other than MMC. The difference-in-differences model assumes no differences in changes over time in the treatment and comparison groups other than the introduction of MMC. In this analysis, the information on both the general characteristics of the MMC and FFS counties and the characteristics of the beneficiaries in those counties in 1998 and 2000 suggest that our comparison groups were fairly well matched on observable characteristics for all three of the alternate designs. Despite this, however, the differences in the estimates of the impacts of MMC we obtained indicate that unobserved differences—either unobserved differences over time or

across the groups of matched counties—accounted for the different estimates of the impact of MMC under the alternative methods.

We suspect that unobserved changes in factors, apart from the introduction of managed care over the 1998-2000 period, contaminated the pre-post estimates of the impacts of managed care. We base this hypothesis on the consistency of the findings from the matched population and difference-in-differences designs, and the stability of the results to alternative groups of treatment and control counties. As was shown in Figure 1, the difference-in-differences estimates can be thought of two ways: (1) as the difference between pre-post changes in access in the MMC counties and pre-post changes in access in the FFS counties [(A-B)-(C-D) from Figure 1] or, equivalently, (2) as the difference in matched population estimates for 2000 and matched population estimates for 1998 [(A-C)-(B-D) from Figure 1]. Using the first interpretation, our difference-in-differences results indicate that the pre-post changes in access in the MMC counties were nearly perfectly matched by equivalent pre-post changes in the Medicaid FFS counties, which by definition could not be due to managed care. Using the second interpretation, our difference-in-differences results indicate that the differences between the MMC counties and FFS counties in 2000 were equivalent to the differences between the two groups of counties in 1998, which were minimal.

While this line of reasoning does not “prove” that the FFS counties provide a good match for the MMC counties over time, the likelihood that a bad match would generate both very few differences in access to care between the treatment and comparison counties prior to managed care, and changes over time in access to care in the comparison counties that almost perfectly match the changes over time in access in the treatment counties is slim. Based on the results from this analysis we conclude that MMC has had little, if any, impact on access to care in rural

Figure 1: Summary of Alternative Evaluation Designs			
Medicaid Population	Time Period		Pre-Post Difference
	2000	1998	
Beneficiaries in MMC Counties¹	A	B	A-B
Beneficiaries in Medicaid FFS Counties²	C	D	C-D
Difference Between Matched Populations	A-C	B-D	Difference-in-Differences: (A-B)-(C-D) or (A-C)-(B-D)

¹MMC counties are the counties that shifted from Medicaid FFS to MMC between 1998 and 2000.

²Medicaid FFS counties are the counties that remained Medicaid FFS between 1998 and 2000.

Minnesota. That is, there is little evidence of increases in access to care as a result of improvements under MMC nor evidence of reductions in care because of cut backs in care under MMC.

In earlier studies of the impacts of MMC in rural Minnesota using a matched-population framework (Coughlin and Long 2000, Long and Coughlin 2001), the authors noted that the limited impact of MMC in rural Minnesota could reflect several aspects of the Minnesota health care market. First, since Minnesota started with a strong health infrastructure it was argued that there might have been limited opportunity for improvements under MMC. Second, because providers under rural MMC in Minnesota, as in rural areas in most states, were paid on a discounted FFS basis, it was argued that providers in the treatment counties had little incentive to change their practice patterns and, as a result, beneficiary service use patterns. Finally, it was hypothesized that the prevalence of managed care in the urban areas of Minnesota may have lead rural providers to adjust their practice patterns in anticipation of the arrival of managed care in rural areas.

The pre-post increases in access to care reported in this paper suggest that the first factor does not explain the lack of impact in the matched-comparison results from the earlier work and repeated here: Despite a strong health infrastructure in Minnesota in 1998, there were improvements in access to care in both the MMC and FFS counties between 1998 and 2000. The absence of a change in the how providers were paid under MMC relative to FFS could explain the finding of no differences between the MMC and FFS counties, but does not explain the improvements in access in both groups of counties over 1998-2000.

Both the pre-post differences in the MMC and FFS counties and the similarity of changes over time in the two groups of counties could potentially be explained by changes in provider

behavior in anticipation of managed care in the FFS counties. If providers in FFS counties adopted managed care strategies in advance of Medicaid managed care, the observed MMC-FFS differences would be reduced.

Since the results hold across different groupings of FFS and MMC counties, this explanation would require that provider behavior changes in anticipation of MMC occurred across the FFS counties and were equivalent to MMC-induced behavior changes in the MMC counties. It seems unlikely that the anticipation of MMC would generate a response across all the FFS counties nor that the anticipation of MMC would have the same impact as an actual MMC-induced behavior change. Similarly, the changes observed over 1998-2000 in both the FFS and MMC counties could reflect the impact of other changes in the health care system, independent of MMC. These changes included a rise in provider consolidation in rural areas of Minnesota that began before and continued over the time period of the study: rural physicians in both the MMC and FFS counties were increasingly aligned with larger practices and health systems (Kendall et al. 2001). Anecdotal evidence suggests that these affiliations provide new supports for former solo practice providers in rural areas including accounting and billing support, staff coverage during vacations/illnesses, and more direct links to specialists (through consultations, visiting clinics, or telemedicine).

Second, and perhaps more importantly, there were significant changes in the Medicare program that took place in the wake of the Balanced Budget Act of 1997. This included significant changes in reimbursement systems for hospitals, skilled nursing facilities, home health and other Medicare services, as well as the creation of the Medicare Rural Hospital Flexibility Program. The latter established critical access hospital (CAH) status as a way to allow rural communities to preserve access to care. Rural Minnesota communities have actively

pursued this option, developing rural health networks, establishing regional links across health services and investing in efforts to improve access to both primary care and emergency services. As of 2000, hospitals in 10 of the MMC counties and 11 of the FFS counties had either established or were considering CAH designations (Minnesota Department of Health, 1999). Beyond the CAH program, Minnesota also invested additional state funds to improve access to care at local hospitals and community health centers in rural areas of the state over the time period of the study.

The net result of these market forces appears to be an increase in the extent of collaboration and network development across the rural health care system in both the MMC and FFS counties in our study. In a survey in rural Minnesota in 2000, providers reported that they were increasingly likely to belong to more provider networks or alliances and to have expanded their connections with other providers over the prior year (Connor 2001). The pre-post improvements in access to care that we observe in both the MMC and FFS counties suggest that the system-wide changes in the rural health care network have improved some aspects of access to care for the Medicaid population, regardless of whether they reside in a MMC or Medicaid FFS county.

In summary, while evaluations of health policy initiatives often must rely on quasi-experimental methods, our results highlight the importance of using multiple evaluation techniques to assess the sensitivity and the robustness of the findings. Depending upon the design method, we found very different policy conclusions on the impacts of MMC. All quasi-experimental approaches are imperfect, but using multiple methods and multiple comparison groups can help ensure that that the information provided in support of policy decisions is as reliable as possible.

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Appendix: Full Regression Results Using Alternate Non-experimental Study Designs						
Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Has a usual source of care (other than emergency room)¹						
PMAP county	—	0.64	0.84	—	0.54	-0.03
Post period	-1.76 ***	—	-1.15 **	0.44	—	0.03
Post period and PMAP county	—	—	-0.39	—	—	0.23
Age (years)	-0.04	0.02	0.01	-0.03	-0.05	-0.07
Was pregnant last year or had selected health problem (adults only)	20.19	2.47 ***	2.28 ***	—	—	—
Female	0.72	-0.58	0.08	1.18 *	0.24	0.51
White	-0.01	-0.74	-0.93	1.47	0.90	0.53
High school graduate or more/Parent is high school graduate or more	0.55	-0.05	0.44	0.32	-0.24	0.92 *
Never married/Parent never married	-1.95 **	-0.20	-0.76	0.14	0.93	-0.19
Married/Parent is married	-0.48	-0.13	-0.11	-0.17	0.61	0.02
Ever worked/Parent ever worked	-0.74	0.03	0.41	-1.25	-1.09	-0.52
Low back pain (adults only)	-1.13 *	0.12	0.17	—	—	—
Frequent headaches	1.58 ***	0.65	0.74 **	-1.89 **	—	-0.55
Mental health problems (adults only)	-0.99	-0.27	-0.50	—	—	—
Number of months of MA/MNCare coverage	2.17 **	2.07 ***	2.13 ***	-0.45	0.23	1.76 **
Number of months uninsured	-0.83	-0.25	-0.15	-2.04	-0.37	1.76
Income between \$10,000 and \$20,000	0.49	0.16	0.39	0.32	1.65 *	1.28 *
Income greater than \$20,000	0.35	1.15 **	0.98 *	-0.18	1.67 **	1.17 **
Family size	-0.12	-0.18	-0.14	-0.28 *	-0.24	-0.27 *
Adult and child case	0.58	0.35	0.29	0.17	0.05	-0.09
Reported health status is fair or poor	-0.16	-0.75	-0.41	0.11	—	-0.16
Smokes (adults only)	1.74 ***	1.06 ***	1.02 ***	—	—	—
Has selected health condition	-19.41 ***	-1.71 **	-1.79 **	—	0.67	0.60
Has impairment or health problem that limits daily activities	1.19	0.96	1.28 *	-1.67	-0.07	1.23
Has impairment or health problem that limits work or school activities	-1.11	-0.50	-0.44	—	—	—
Worries about health more than others/Parent worries about health more than others	0.52	-0.24	-0.31	0.11	-0.57	0.11
Worries about health less than others/Parent worries about health less than others	-0.38	-0.22	-0.60	-0.98	0.26	-0.08
Distance from nearest teaching hospital (miles)	-0.02	-0.01	-0.01	-0.01	-0.02 *	-0.01 **
Distance from nearest hospital trauma unit (miles)	-0.03 *	-0.02 *	-0.02	0.02	0.04 **	0.03 ***
Distance from Twin Cities safety net hospitals (miles)	0.02 *	0.00	0.00	0.02 *	0.00	0.01
Unemployment rate in county	0.17	0.26	0.01	-0.21	-0.37	-0.43

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
For those with a usual source of care:						
Usual provider is a doctor						
PMAP county	—	0.01	-0.06	—	-0.64	-0.18
Post period	1.66 ***	—	1.49 ***	1.13 ***	—	1.46 ***
Post period and PMAP county	—	—	-0.01	—	—	-0.28
Age (years)	0.00	0.02	-0.01	-0.08 ***	-0.05 *	-0.07 ***
Was pregnant last year or had selected health problem (adults only)	0.19	0.66 *	0.30	—	—	—
Female	0.13	-1.23 *	0.03	-0.38	-0.70 **	-0.30 *
White	0.32	-1.11 *	-0.33	-0.49	-1.20 *	-0.83 **
High school graduate or more/Parent is high school graduate or more	0.02	0.08	-0.07	0.64 **	0.57	0.31
Never married/Parent never married	-0.07	0.10	-0.28	0.22	0.51	0.17
Married/Parent is married	0.61 *	0.55	0.20	-0.09	0.14	-0.14
Ever worked/Parent ever worked	0.06	0.53	0.11	-0.04	0.09	-0.32
Low back pain (adults only)	-0.42 *	-0.18	-0.17	—	—	—
Frequent headaches	0.28	-0.56 *	0.11	-0.02	-0.07	0.38
Mental health problems (adults only)	-0.49	-0.03	-0.15	—	—	—
Number of months of MA/MNCare coverage	-0.26	-0.35	0.19	1.41 **	1.46 *	0.53
Number of months uninsured	-0.96	-0.31	-0.08	2.37 **	2.89 *	0.21
Income between \$10,000 and \$20,000	0.20	0.22	0.06	0.09	-0.37	-0.11
Income greater than \$20,000	0.55 *	0.06	0.39 *	0.32	0.05	0.35
Family size	-0.10	0.03	-0.05	0.07	0.06	0.02
Adult and child case	-0.48 *	0.09	-0.37 *	0.13	-0.06	-0.04
Reported health status is fair or poor	-0.18	-0.59	-0.13	-0.24	-0.50	0.29
Smokes (adults only)	0.25	0.63 **	0.23	—	—	—
Has selected health condition	0.10	-0.21	-0.01	-0.15	0.58	0.30
Has impairment or health problem that limits daily activities	0.25	-0.08	0.08	0.94 **	0.50	0.34
Has impairment or health problem that limits work or school activities	0.62	0.42	0.78 **	-0.09	0.65	-0.33
Worries about health more than others/Parent worries about health more than others	-0.67 **	-0.51	-0.35	0.61	-0.41	0.50
Worries about health less than others/Parent worries about health less than others	-0.57 **	-0.45	-0.21	-0.12	-0.15	0.01
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	-0.01	0.00
Distance from nearest hospital trauma unit (miles)	-0.01	-0.01	-0.01 **	-0.01	-0.01	-0.01
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.01 **	0.00
Unemployment rate in county	0.16	0.28	0.05	-0.12	0.02	0.04

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
For those with a usual source of care: Sees same provider at all or most visits						
PMAP county	—	-0.13	-0.09	—	0.06	0.25
Post period	1.65 ***	—	1.43 ***	0.90 ***	—	1.10 ***
Post period and PMAP county	—	—	0.14	—	—	-0.13
Age (years)	0.00	0.00	-0.01	-0.09 ***	-0.05 **	-0.08 ***
Was pregnant last year or had selected health problem (adults only)	0.32	0.67 *	0.31 *	—	—	—
Female	0.54 *	0.28	0.71 ***	-0.19	0.03	0.10
White	0.37	1.03 ***	0.58 **	0.22	0.53 *	0.40
High school graduate or more/Parent is high school graduate or more	0.56 **	0.21	0.32 *	0.64 **	0.41	0.47 **
Never married/Parent never married	-0.21	-0.11	-0.25	-0.75 **	-0.57	-0.50 **
Married/Parent is married	0.56 *	0.12	0.20	-0.66 **	0.01	-0.19
Ever worked/Parent ever worked	0.20	0.19	0.09	0.09	-0.16	-0.20
Low back pain (adults only)	-0.09	-0.24	0.01	—	—	—
Frequent headaches	0.20	0.10	0.13	-0.89 **	0.22	0.23
Mental health problems (adults only)	0.46	0.33	0.09	—	—	—
Number of months of MA/MNCare coverage	0.31	0.31	0.18	0.66	0.33	0.21
Number of months uninsured	-0.24	2.69 **	0.28	1.59	-0.16	-0.14
Income between \$10,000 and \$20,000	0.09	0.44	0.08	0.14	0.29	0.01
Income greater than \$20,000	-0.13	0.18	0.17	0.51	0.50	0.39 *
Family size	-0.11	-0.14	-0.10 *	-0.09	-0.20 ***	-0.13 **
Adult and child case	-0.04	-0.12	-0.33 *	-0.04	-0.06	-0.03
Reported health status is fair or poor	0.16	0.05	0.12	-0.35	-0.75	0.05
Smokes (adults only)	-0.10	-0.17	0.05	—	—	—
Has selected health condition	-0.27	-0.36	-0.12	0.38	-0.22	0.10
Has impairment or health problem that limits daily activities	0.01	0.11	0.28	0.97 *	0.30	0.38
Has impairment or health problem that limits work or school activities	0.21	0.25	0.27	-0.14	0.70	0.03
Worries about health more than others/Parent worries about health more than others	-0.57 *	-0.69 *	-0.45 **	0.00	0.41	0.32
Worries about health less than others/Parent worries about health less than others	-0.16	0.31	-0.09	-0.30	-0.01	-0.05
Distance from nearest teaching hospital (miles)	0.00	0.01 *	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.00	0.00	0.00	-0.01	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.01	0.00
Unemployment rate in county	0.08	0.06	0.03	-0.10	0.05	0.01

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
For those with a usual source of care:						
Provider calls to remind of appointment						
PMAP county	—	-0.54 **	-0.10	—	-0.51 **	-0.08
Post period	0.81 ***	—	1.16 ***	0.74 ***	—	0.90 ***
Post period and PMAP county	—	—	-0.33	—	—	-0.13
Age (years)	0.00	-0.01	-0.02 **	-0.02	-0.01	-0.02 *
Was pregnant last year or had selected health problem (adults only)	0.31	0.48 *	0.18	—	—	—
Female	-0.68 **	-1.06 ***	-0.44 **	0.09	0.06	0.12
White	-0.57 *	-0.36	-0.42 *	-0.83 **	-1.11 ***	-0.90 ***
High school graduate or more/Parent is high school graduate or more	-0.39	0.04	-0.20	-0.57 **	-0.52 **	-0.44 ***
Never married/Parent never married	0.01	-0.43	-0.28	0.11	0.24	0.21
Married/Parent is married	-0.31	-0.38	-0.10	-0.35	0.15	-0.02
Ever worked/Parent ever worked	0.15	0.48 *	0.13	0.56 **	0.78 ***	0.50 ***
Low back pain (adults only)	-0.66 ***	-0.28	-0.26 *	—	—	—
Frequent headaches	0.45 *	-0.12	0.13	-0.37	-0.23	-0.06
Mental health problems (adults only)	-0.24	-0.36	-0.35 *	—	—	—
Number of months of MA/MNCare coverage	1.12 *	-0.02	0.65	0.54	-0.89	-0.22
Number of months uninsured	-0.18	-0.38	0.06	1.28	0.12	0.10
Income between \$10,000 and \$20,000	0.21	-0.19	-0.12	-0.10	-0.02	0.04
Income greater than \$20,000	0.29	0.00	-0.01	-0.10	-0.30	0.03
Family size	-0.03	-0.08	-0.10 **	0.04	-0.10 *	-0.09 *
Adult and child case	-0.17	0.08	-0.14	0.16	0.12	0.10
Reported health status is fair or poor	0.04	-0.20	0.02	-0.09	0.61	0.25
Smokes (adults only)	0.13	0.33	0.22	—	—	—
Has selected health condition	-0.22	-0.35	-0.10	-0.11	-0.06	-0.05
Has impairment or health problem that limits daily activities	-0.32	-0.41	-0.22	0.38	0.20	0.31
Has impairment or health problem that limits work or school activities	0.25	0.52	0.39	-0.44	0.35	-0.03
Worries about health more than others/Parent worries about health more than others	0.12	0.74 ***	0.20	0.00	-0.17	0.02
Worries about health less than others/Parent worries about health less than others	-0.01	0.22	-0.02	0.07	0.06	0.01
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	-0.02 ***	-0.01	0.00	0.00	0.01	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00 *	0.00	0.00	0.00
Unemployment rate in county	0.20	-0.09	0.01	0.17	0.18	0.23 ***

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
For those with a usual source of care: Provider calls to remind when due for a check up						
PMAP county	—	-0.14	0.08	—	-0.07	0.25
Post period	0.64 ***	—	0.77 ***	0.15	—	0.42 **
Post period and PMAP county	—	—	-0.15	—	—	-0.27
Age (years)	-0.01	0.00	-0.01	-0.06 ***	-0.05 ***	-0.05 ***
Was pregnant last year or had selected health problem (adults only)	0.31	0.36	0.21	—	—	—
Female	0.09	0.10	0.24	-0.03	-0.21	0.00
White	-0.03	-0.34	-0.25	-0.62 *	-0.38	-0.43 *
High school graduate or more/Parent is high school graduate or more	0.26	-0.01	0.00	0.08	-0.18	-0.17
Never married/Parent never married	0.15	0.19	0.04	0.07	0.36	0.24
Married/Parent is married	-0.29	-0.08	-0.17	-0.25	0.20	0.00
Ever worked/Parent ever worked	-0.05	0.06	-0.08	0.36	0.34	0.05
Low back pain (adults only)	-0.25	-0.09	-0.02	—	—	—
Frequent headaches	0.33	-0.04	0.03	-0.13	-0.14	-0.43
Mental health problems (adults only)	0.09	-0.39 *	-0.16	—	—	—
Number of months of MA/MNCare coverage	1.47 **	0.07	0.98 ***	-0.19	-0.35	-0.25
Number of months uninsured	0.73	-0.08	0.77 *	-0.04	-0.26	-0.69
Income between \$10,000 and \$20,000	0.16	0.28	0.04	-0.42 *	-0.05	-0.18
Income greater than \$20,000	0.35	0.17	0.08	-0.35	-0.38	-0.16
Family size	0.11	-0.09	0.03	-0.02	-0.07	-0.06
Adult and child case	-0.23	0.15	-0.33 **	0.25	0.25	0.13
Reported health status is fair or poor	-0.09	-0.47 *	-0.18	0.11	0.89 **	0.16
Smokes (adults only)	0.13	0.12	0.15	—	—	—
Has selected health condition	-0.28	-0.07	-0.09	0.59 **	-0.05	0.15
Has impairment or health problem that limits daily activities	0.14	-0.06	0.01	-0.04	0.20	0.13
Has impairment or health problem that limits work or school activities	0.57	1.02 ***	0.70 ***	0.39	0.10	0.07
Worries about health more than others/Parent worries about health more than others	-0.33	-0.11	-0.10	0.11	0.22	0.21
Worries about health less than others/Parent worries about health less than others	-0.13	-0.06	-0.18	-0.07	0.28	0.05
Distance from nearest teaching hospital (miles)	0.00	0.01 **	0.00	0.00 **	-0.01 **	0.00 ***
Distance from nearest hospital trauma unit (miles)	-0.01	0.00	0.00	-0.01	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	0.21 *	0.02	0.08	-0.02	-0.02	0.04

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
For those with a usual source of care: Provider provides transportation assistance						
PMAP county	—	0.55	-0.09	—	-0.26	-0.60
Post period	1.04 ***	—	0.00	1.31 ***	—	0.72 **
Post period and PMAP county	—	—	0.65	—	—	0.05
Age (years)	0.01	0.01	-0.03	-0.05	-0.04	-0.05
Was pregnant last year or had selected health problem (adults only)	0.49	0.09	0.33	—	—	—
Female	0.19	0.32	0.08	-0.51	-0.19	-0.24
White	-0.43	-0.24	-0.61	0.17	-0.61	-0.64
High school graduate or more/Parent is high school graduate or more	-0.54	0.43	-0.08	-0.33	0.15	-0.28
Never married/Parent never married	-0.16	0.12	-0.15	-0.06	0.38	0.03
Married/Parent is married	-0.11	-0.06	0.03	0.23	-0.01	-0.14
Ever worked/Parent ever worked	-0.36	0.07	-0.14	-0.39	-0.48	-0.43
Low back pain (adults only)	0.40	0.25	0.50 *	—	—	—
Frequent headaches	0.18	-0.08	-0.26	0.32	-0.63	-0.14
Mental health problems (adults only)	0.29	0.62	0.58	—	—	—
Number of months of MA/MNCare coverage	-0.37	0.20	0.36	1.91	1.16	1.43
Number of months uninsured	-1.54	-0.16	-0.07	1.56	0.15	-0.85
Income between \$10,000 and \$20,000	-0.07	0.22	0.13	-0.89	0.86 *	0.32
Income greater than \$20,000	0.42	-0.24	0.27	-0.83	0.56	0.28
Family size	-0.28 *	0.10	-0.06	-0.11	-0.10	-0.12
Adult and child case	0.57	1.02 **	0.32	0.55	0.32	0.17
Reported health status is fair or poor	-0.70	0.14	-0.08	-1.55	0.31	-0.50
Smokes (adults only)	0.31	-0.34	0.09	—	—	—
Has selected health condition	-0.66	-0.58	-0.34	1.39 ***	-0.57	0.37
Has impairment or health problem that limits daily activities	-0.24	-0.17	-0.19	-0.66	0.18	-0.23
Has impairment or health problem that limits work or school activities	0.09	-0.33	0.01	0.04	-0.33	0.36
Worries about health more than others/Parent worries about health more than others	-0.05	0.75 *	0.26	-0.48	0.09	-0.40
Worries about health less than others/Parent worries about health less than others	-1.81 **	-0.57	-0.22	-0.57	0.02	0.07
Distance from nearest teaching hospital (miles)	-0.01	0.00	0.00	-0.01	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	-0.01	0.00	0.01	0.01	0.02 *
Distance from Twin Cities safety net hospitals (miles)	-0.01	0.01	0.00	0.00	0.00	0.00
Unemployment rate in county	0.19	-0.10	-0.02	0.11	0.03	-0.01

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Travel time to doctor is more than 30 minutes						
PMP county	—	0.20	0.28	—	0.71 ***	0.27
Post period	-0.37	—	-0.41	0.42 **	—	-0.08
Post period and PMP county	—	—	-0.07	—	—	0.45
Age (years)	0.01	0.00	0.01	-0.01	-0.02	-0.01
Was pregnant last year or had selected health problem (adults only)	0.24	-0.32	-0.12	—	—	—
Female	0.54	0.20	0.19	-0.03	-0.06	-0.16
White	1.47 *	0.23	0.21	0.70	0.78 **	0.58 *
High school graduate or more/Parent is high school graduate or more	0.76 **	0.42	0.42 *	0.59 **	0.34	0.46 **
Never married/Parent never married	0.30	0.20	0.22	0.41	0.28	0.38 *
Married/Parent is married	0.49	-0.15	0.03	0.57 **	0.30	0.57 ***
Ever worked/Parent ever worked	-0.13	-0.01	0.02	-0.40	-0.10	-0.16
Low back pain (adults only)	-0.43	-0.35	-0.16	—	—	—
Frequent headaches	0.54 **	0.35	0.31	0.33	-0.19	0.06
Mental health problems (adults only)	-0.10	0.43	0.10	—	—	—
Number of months of MA/MNCare coverage	-1.13 *	-1.06	-0.92 *	-0.05	0.12	-0.57
Number of months uninsured	-1.35 *	-1.87 **	-0.91	0.31	0.18	-0.68
Income between \$10,000 and \$20,000	0.28	-0.07	0.10	0.17	-0.64 **	-0.24
Income greater than \$20,000	-0.24	-0.20	0.12	-0.10	-0.41	-0.19
Family size	-0.07	0.11	0.04	0.01	0.07	0.01
Adult and child case	-0.46	-0.05	-0.25	0.15	0.17	0.16
Reported health status is fair or poor	0.19	0.35	0.02	0.21	-0.03	0.27
Smokes (adults only)	0.38	0.41	0.26	—	—	—
Has selected health condition	0.12	0.63 *	0.27	0.10	0.25	0.07
Has impairment or health problem that limits daily activities	0.37	0.28	0.40	0.00	0.28	0.18
Has impairment or health problem that limits work or school activities	0.00	-0.25	0.25	1.02 ***	0.69	0.72 **
Worries about health more than others/Parent worries about health more than others	0.03	0.57	0.29	-0.09	-0.16	-0.13
Worries about health less than others/Parent worries about health less than others	-0.23	0.26	0.20	0.09	0.15	0.21
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.00	0.01	0.00	-0.02 **	-0.01	-0.01 *
Distance from Twin Cities safety net hospitals (miles)	0.00	-0.01	0.00	0.00	0.01 ***	0.00 *
Unemployment rate in county	0.31 **	-0.26 *	0.06	0.24 *	-0.04	0.16 *

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Able to talk to provider right away when need medical advice						
PMAP county	—	-0.71 **	-0.36	—	-1.19 ***	-0.31
Post period	-0.82 **	—	-0.38	-1.24 ***	—	-0.52 *
Post period and PMAP county	—	—	-0.43	—	—	-0.70 *
Age (years)	-0.03	0.00	-0.01	0.04	0.03	0.02
Was pregnant last year or had selected health problem (adults only)	-0.29	0.56 *	0.25	—	—	—
Female	0.10	0.14	0.10	-0.01	-0.22	-0.09
White	0.76 *	0.05	0.58 *	0.63	0.20	0.23
High school graduate or more/Parent is high school graduate or more	0.05	0.04	0.04	0.22	0.12	-0.06
Never married/Parent never married	-0.74 *	-0.27	-0.25	0.19	0.47	0.24
Married/Parent is married	-0.41	0.07	-0.20	0.19	0.40	0.29
Ever worked/Parent ever worked	-0.15	0.03	-0.12	-0.09	0.14	0.09
Low back pain (adults only)	0.09	-0.24	-0.04	—	—	—
Frequent headaches	-0.72 **	-0.55 *	-0.61 ***	-1.67 ***	-0.57	-1.03 ***
Mental health problems (adults only)	-0.24	-0.02	-0.04	—	—	—
Number of months of MA/MNCare coverage	0.91	0.05	0.40	1.03	1.27 *	1.56 ***
Number of months uninsured	0.40	-0.35	0.19	0.21	-0.18	0.59
Income between \$10,000 and \$20,000	0.45	0.02	0.22	0.18	0.00	0.06
Income greater than \$20,000	0.45	-0.17	0.03	0.14	0.32	0.32
Family size	-0.05	-0.08	0.00	0.20 **	0.05	0.07
Adult and child case	-0.28	-0.06	-0.22	0.58 *	0.48 *	0.71 ***
Reported health status is fair or poor	-0.50	-0.50	-0.27	-0.80	-0.34	-0.60
Smokes (adults only)	0.06	-0.31	-0.20	—	—	—
Has selected health condition	0.64 *	-0.40	0.00	-0.30	-0.60 *	-0.36
Has impairment or health problem that limits daily activities	-0.54	-0.21	-0.38	0.16	-0.09	-0.30
Has impairment or health problem that limits work or school activities	0.30	0.61	0.45	0.48	-0.61	-0.43
Worries about health more than others/Parent worries about health more than others	0.56	-0.11	-0.03	0.21	0.29	0.17
Worries about health less than others/Parent worries about health less than others	0.71 *	0.64 *	0.79 ***	0.79 **	0.51 *	0.58 **
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.00	0.00	0.00	-0.01	0.00	-0.01 *
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.01	0.01 **	0.01 *
Unemployment rate in county	0.37 **	0.15	0.24	0.04	-0.10	0.10

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Rate as good, very good or excellent:						
Convenience of location of care						
PMAP county	—	-0.11	0.15	—	-0.02	-0.32
Post period	0.10	—	0.20	-0.11	—	-0.55 *
Post period and PMAP county	—	—	-0.21	—	—	0.53
Age (years)	0.01	0.05 **	0.02	0.03	0.01	0.01
Was pregnant last year or had selected health problem (adults only)	0.30	0.01	0.15	—	—	—
Female	-0.61	0.23	0.37	0.08	0.17	0.28
White	-0.21	0.03	0.22	0.37	-0.37	-0.23
High school graduate or more/Parent is high school graduate or more	0.13	-0.04	-0.12	-0.21	-0.49	0.05
Never married/Parent never married	-0.60	-0.09	-0.62 *	-0.25	0.05	-0.20
Married/Parent is married	-0.82	-0.42	-0.64 *	-0.29	-0.25	-0.43
Ever worked/Parent ever worked	0.37	0.17	0.26	0.70 *	0.03	0.24
Low back pain (adults only)	-0.06	-0.64 *	-0.21	—	—	—
Frequent headaches	0.55	0.35	0.05	-0.64	-0.85 *	-0.45
Mental health problems (adults only)	-0.37	-0.68 *	-0.62 **	—	—	—
Number of months of MA/MN Care coverage	1.36 *	1.02	0.77	1.03	0.95	1.15 **
Number of months uninsured	1.85	1.47	1.15	1.99	3.41 *	2.41 **
Income between \$10,000 and \$20,000	-0.02	-0.07	0.09	-0.41	0.41	0.31
Income greater than \$20,000	0.03	0.26	-0.12	-0.32	0.57	0.15
Family size	-0.03	-0.16	-0.10	0.13	-0.07	-0.03
Adult and child case	-0.85 *	-0.07	-0.28	0.16	0.14	-0.23
Reported health status is fair or poor	-1.04 **	0.02	-0.53	-0.54	-0.84	-0.94 ***
Smokes (adults only)	0.19	0.24	0.23	—	—	—
Has selected health condition	-0.09	-0.16	-0.01	-0.19	-0.46	-0.01
Has impairment or health problem that limits daily activities	-0.02	-0.52	-0.23	-0.30	0.14	0.03
Has impairment or health problem that limits work or school activities	-0.40	0.11	-0.01	-0.20	-0.48	-0.80 **
Worries about health more than others/Parent worries about health more than others	-0.40	-0.81 **	-0.61 **	0.36	-0.48	-0.25
Worries about health less than others/Parent worries about health less than others	0.41	0.09	0.32	0.45	-0.05	0.31
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.00	-0.01	-0.01	-0.01	-0.01
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	0.23	0.16	0.10	-0.26	0.19	0.02

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Rate as good, very good or excellent: Friendliness and courtesy of doctors						
PMAP county	—	0.02	-0.56	—	0.31	-0.82 *
Post period	0.81 *	—	-0.02	-0.04	—	-0.87 **
Post period and PMAP county	—	—	0.74	—	—	1.25 **
Age (years)	0.00	-0.02	0.00	0.08	0.01	0.02
Was pregnant last year or had selected health problem (adults only)	-0.35	1.11	0.17	—	—	—
Female	1.06 **	0.60	0.72 **	0.54	-0.63	-0.19
White	0.57	1.13 **	0.68 *	2.20 ***	1.11 **	0.76 *
High school graduate or more/Parent is high school graduate or more	0.11	-0.33	-0.01	-0.34	-0.27	0.06
Never married/Parent never married	-0.20	-0.15	-0.16	0.01	0.34	-0.53
Married/Parent is married	0.57	0.49	0.23	-0.23	0.83	-0.01
Ever worked/Parent ever worked	-0.26	-0.31	-0.23	-0.35	-0.74	-0.81 *
Low back pain (adults only)	0.12	-0.20	-0.08	—	—	—
Frequent headaches	-0.73	-0.82 *	-0.42	-1.76 **	-0.12	-0.56
Mental health problems (adults only)	-0.81 **	-0.40	-0.79 **	—	—	—
Number of months of MA/MNCare coverage	1.78 **	-1.31	1.33 **	-0.04	0.83	0.81
Number of months uninsured	0.64	-2.47 *	-0.02	0.79	-1.80	-0.28
Income between \$10,000 and \$20,000	0.16	0.54	0.01	-0.68	0.33	0.09
Income greater than \$20,000	0.11	0.39	0.34	-0.23	0.40	0.28
Family size	0.10	0.02	0.04	0.06	0.13	0.01
Adult and child case	-0.66	-0.25	-0.58 *	0.22	0.32	0.24
Reported health status is fair or poor	-0.59	-1.21 **	-0.69 **	-1.20 *	0.43	-1.01 **
Smokes (adults only)	-0.21	-0.54	-0.51 *	—	—	—
Has selected health condition	0.24	-1.17 *	-0.24	-0.65	-1.16 **	-0.60
Has impairment or health problem that limits daily activities	0.09	0.99	0.20	0.98	0.31	0.26
Has impairment or health problem that limits work or school activities	-0.23	0.00	0.07	0.00	0.21	-0.17
Worries about health more than others/Parent worries about health more than others	0.09	-0.52	-0.60 *	-0.23	-0.35	-0.35
Worries about health less than others/Parent worries about health less than others	-0.23	0.51	-0.18	0.68	0.07	0.31
Distance from nearest teaching hospital (miles)	-0.01	0.00	-0.01	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	-0.01	0.00	-0.04 *	0.02	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.01	0.00	0.02 ***	0.00	0.00
Unemployment rate in county	0.11	-0.20	-0.10	-1.18 ***	-0.56 ***	-0.34 **

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Rate as good, very good or excellent: Amount of time spent with doctors						
PMP county	—	0.08	-0.65 **	—	-0.12	0.00
Post period	0.47 *	—	-0.43	-0.25	—	-0.33
Post period and PMP county	—	—	0.86 **	—	—	0.20
Age (years)	-0.01	0.00	0.01	-0.02	-0.03	-0.01
Was pregnant last year or had selected health problem (adults only)	-0.03	0.31	0.15	—	—	—
Female	-0.27	0.24	0.13	0.20	-0.02	0.07
White	0.11	0.09	0.15	0.47	0.33	0.20
High school graduate or more/Parent is high school graduate or more	0.38	-0.38	-0.10	-0.28	-0.20	-0.06
Never married/Parent never married	-0.78 **	-0.67 **	-0.48 **	-0.04	0.35	-0.11
Married/Parent is married	-0.23	-0.07	-0.22	0.10	0.22	0.05
Ever worked/Parent ever worked	0.19	-0.26	-0.07	-0.87	-0.62	-0.54
Low back pain (adults only)	-0.25	-0.53 **	-0.36 *	—	—	—
Frequent headaches	-0.59 *	-0.43	-0.26	-0.53	-0.30	-0.35
Mental health problems (adults only)	-0.14	-0.60 **	-0.58 **	—	—	—
Number of months of MA/MNCare coverage	1.10	-0.50	-0.28	1.19	-0.07	0.04
Number of months uninsured	0.06	-1.62 *	-0.95	0.32	-0.99	-0.76
Income between \$10,000 and \$20,000	0.02	0.13	-0.14	-0.65	0.16	0.03
Income greater than \$20,000	1.08 ***	0.54	0.51 *	-0.20	0.93 **	0.62 *
Family size	-0.06	-0.15	-0.05	0.16	0.14	0.10
Adult and child case	0.47	0.62 **	0.36 *	0.64 *	0.23	0.45 *
Reported health status is fair or poor	-0.61 *	-0.70 **	-0.72 ***	-0.57	-0.50	-0.57 *
Smokes (adults only)	-0.34	-0.62 **	-0.31 *	—	—	—
Has selected health condition	-0.43	-0.48	-0.34	0.42	-0.22	-0.06
Has impairment or health problem that limits daily activities	-0.22	0.82 **	0.27	-0.82 *	0.39	-0.33
Has impairment or health problem that limits work or school activities	0.62	0.19	0.30	0.18	1.02	0.27
Worries about health more than others/Parent worries about health more than others	0.89 **	-0.35	-0.03	-0.46	0.24	-0.10
Worries about health less than others/Parent worries about health less than others	0.70 *	0.52 *	0.33	1.01 **	0.00	0.32
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	-0.01	-0.01	0.00	0.00	0.01	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.01 **	0.01 **	0.00	0.00	0.00
Unemployment rate in county	0.21	-0.20	0.02	-0.12	-0.05	0.08

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Rate as good, very good or excellent:						
Explanation of medical procedures/tests						
PMAP county	—	-0.11	-0.04	—	0.30	0.21
Post period	-0.18	—	-0.22	-0.26	—	-0.39
Post period and PMAP county	—	—	-0.01	—	—	0.23
Age (years)	-0.04 **	-0.01	-0.01	0.03	-0.01	0.00
Was pregnant last year or had selected health problem (adults only)	-0.02	0.38	0.34	—	—	—
Female	-0.25	0.05	0.12	-0.22	-0.61 *	-0.38 *
White	1.07 ***	0.30	0.31	0.80	-0.02	0.15
High school graduate or more/Parent is high school graduate or more	0.14	0.01	-0.15	-0.05	-0.13	-0.03
Never married/Parent never married	-0.92 **	-0.29	-0.41	0.17	0.06	-0.38
Married/Parent is married	-0.67 *	-0.04	-0.09	-0.14	-0.28	-0.42
Ever worked/Parent ever worked	-0.21	-0.23	-0.07	0.01	-0.02	-0.28
Low back pain (adults only)	-0.17	-0.65 **	-0.23	—	—	—
Frequent headaches	-0.36	-0.23	-0.25	-0.41	-0.65	-0.25
Mental health problems (adults only)	-0.40	-0.28	-0.39	—	—	—
Number of months of MA/MNCare coverage	1.13 *	-1.00	0.36	1.22	0.63	1.25 **
Number of months uninsured	0.89	-1.95 **	-0.49	-0.45	-0.50	0.09
Income between \$10,000 and \$20,000	0.40	0.06	0.10	0.47	0.21	0.15
Income greater than \$20,000	0.88 **	-0.02	0.09	0.25	0.45	0.39
Family size	-0.10	-0.15 *	-0.11 *	0.01	0.04	0.00
Adult and child case	0.26	0.46	0.23	-0.01	-0.06	0.04
Reported health status is fair or poor	-0.59	-0.80 **	-0.59 **	-1.26 **	-0.49	-0.62 *
Smokes (adults only)	-0.33	-0.43 *	-0.52 ***	—	—	—
Has selected health condition	-0.06	-0.61 *	-0.45 *	0.78	-0.24	0.17
Has impairment or health problem that limits daily activities	0.55	-0.25	-0.13	-0.38	-0.04	-0.70 **
Has impairment or health problem that limits work or school activities	-0.55	0.53	0.16	-0.56	0.35	-0.29
Worries about health more than others/Parent worries about health more than others	0.85 *	0.09	-0.04	0.48	-0.14	-0.33
Worries about health less than others/Parent worries about health less than others	0.80 *	0.62 *	0.45 *	0.26	0.06	0.02
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	-0.01 *	-0.02 **	-0.01 *	-0.01	0.00	-0.01
Distance from Twin Cities safety net hospitals (miles)	0.00	0.01	0.00	-0.01	0.00	0.00
Unemployment rate in county	0.16	-0.04	0.03	-0.09	0.06	0.09

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Rate as good, very good or excellent: Ease of getting evening/weekend care						
PMAP county	—	-0.63 ***	0.01	—	-0.04	0.05
Post period	0.07	—	0.51 ***	-0.02	—	-0.07
Post period and PMAP county	—	—	-0.43	—	—	0.08
Age (years)	0.03 **	0.01	0.01	0.01	0.01	0.00
Was pregnant last year or had selected health problem (adults only)	0.33	0.09	0.21	—	—	—
Female	-0.16	0.11	0.21	0.14	-0.12	-0.12
White	0.16	0.02	-0.12	-0.30	-0.28	-0.16
High school graduate or more/Parent is high school graduate or more	0.16	-0.17	0.07	-0.02	-0.30	-0.12
Never married/Parent never married	-0.06	-0.06	-0.03	0.08	-0.04	0.05
Married/Parent is married	0.36	0.17	0.13	0.22	-0.19	0.05
Ever worked/Parent ever worked	0.03	0.22	0.13	0.20	0.49 **	0.22
Low back pain (adults only)	-0.25	-0.12	-0.12	—	—	—
Frequent headaches	-0.40 *	-0.34	-0.39 ***	-0.50	-0.35	-0.01
Mental health problems (adults only)	-0.21	-0.58 **	-0.53 **	—	—	—
Number of months of MA/MNCare coverage	0.04	0.29	0.65 *	0.28	0.38	-0.15
Number of months uninsured	-0.13	0.26	0.42	0.94	0.70	0.13
Income between \$10,000 and \$20,000	-0.24	0.07	-0.13	-0.63 **	0.01	-0.18
Income greater than \$20,000	0.05	0.19	0.02	-0.77 **	0.41	0.01
Family size	-0.03	-0.10	-0.01	0.02	-0.02	0.00
Adult and child case	-0.44 *	-0.23	-0.21	-0.19	0.19	0.20
Reported health status is fair or poor	-0.71 **	-0.39	-0.40 **	-0.47	-0.29	-0.53 **
Smokes (adults only)	0.19	-0.45 **	-0.15	—	—	—
Has selected health condition	-0.02	-0.41 *	-0.29	0.16	-0.20	-0.20
Has impairment or health problem that limits daily activities	0.27	-0.04	-0.09	0.00	-0.09	-0.07
Has impairment or health problem that limits work or school activities	-0.06	0.28	0.17	-0.13	-0.81 *	-0.37
Worries about health more than others/Parent worries about health more than others	0.25	0.25	0.19	-0.13	-0.06	-0.13
Worries about health less than others/Parent worries about health less than others	0.24	-0.04	0.14	0.70 ***	0.32	0.49 ***
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.01	0.00	0.00	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	0.14	0.04	0.04	0.01	0.06	-0.02

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Rate as good, very good or excellent: Ease of getting emergency care						
PMAP county	—	0.14	0.17	—	0.35	-0.08
Post period	0.14	—	0.14	-0.37	—	-0.56 **
Post period and PMAP county	—	—	-0.10	—	—	0.43
Age (years)	0.00	0.00	0.01	0.05 *	0.07 ***	0.05 ***
Was pregnant last year or had selected health problem (adults only)	-0.23	0.12	0.17	—	—	—
Female	-0.70	-0.10	0.16	-0.15	0.13	0.14
White	0.64	0.28	0.33	-0.91	0.08	0.12
High school graduate or more/Parent is high school graduate or more	0.14	-0.29	-0.05	-0.37	-0.49	-0.24
Never married/Parent never married	-0.63	-0.47	-0.30	0.25	0.05	0.00
Married/Parent is married	-0.77 *	-0.13	-0.10	0.42	-0.16	0.20
Ever worked/Parent ever worked	0.19	0.60 *	0.26	-0.42	0.26	-0.01
Low back pain (adults only)	-0.12	-0.18	0.05	—	—	—
Frequent headaches	-0.27	-0.26	-0.37 *	-0.99 **	-0.57	-0.60 *
Mental health problems (adults only)	-1.02 ***	-0.32	-0.31	—	—	—
Number of months of MA/MNCare coverage	0.65	0.27	0.98 **	-0.67	-1.05	-1.11
Number of months uninsured	-0.91	-0.06	0.01	-1.04	-1.72	-1.68 *
Income between \$10,000 and \$20,000	0.04	-0.04	0.06	0.13	-0.02	-0.02
Income greater than \$20,000	0.38	0.18	0.11	0.32	0.37	0.29
Family size	0.02	-0.09	-0.08	-0.12	0.01	-0.03
Adult and child case	-0.56 *	-0.29	-0.42 *	0.20	-0.18	0.23
Reported health status is fair or poor	-0.16	-0.44	-0.35	-0.63	0.08	-0.43
Smokes (adults only)	-0.33	-0.33	-0.34 *	—	—	—
Has selected health condition	-0.15	-0.43	-0.42 *	-0.05	-0.60 *	-0.33
Has impairment or health problem that limits daily activities	0.75 *	0.17	0.25	0.01	0.24	-0.16
Has impairment or health problem that limits work or school activities	-0.71	-0.18	-0.60 *	-0.19	-0.23	0.07
Worries about health more than others/Parent worries about health more than others	0.37	-0.04	0.12	-0.12	-0.40	-0.41
Worries about health less than others/Parent worries about health less than others	0.82 **	0.45	0.63 ***	0.66 *	0.64 **	0.62 ***
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.00	0.00	0.00	0.01	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	0.12	0.18	0.22 *	-0.32	-0.05	-0.01

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Rate as good, very good or excellent: Ease of getting prescription drugs						
PMAP county	—	-0.48	-0.50	—	-0.47	0.64
Post period	0.11	—	-0.05	-0.85 *	—	0.34
Post period and PMAP county	—	—	0.13	—	—	-1.00 **
Age (years)	-0.04 **	-0.04 *	-0.03 *	0.00	-0.02	-0.02
Was pregnant last year or had selected health problem (adults only)	-0.20	0.51	0.03	—	—	—
Female	-0.23	-0.27	-0.02	0.09	0.07	0.02
White	0.47	1.01 **	0.72 **	0.48	0.22	0.15
High school graduate or more/Parent is high school graduate or more	0.38	-0.12	0.11	0.13	-0.52	-0.08
Never married/Parent never married	-0.84 **	-0.86 *	-0.59 *	0.54	0.20	0.04
Married/Parent is married	-0.76 **	-0.79 *	-0.71 **	0.17	0.23	0.11
Ever worked/Parent ever worked	-0.51	0.62	-0.08	-0.19	0.47	0.11
Low back pain (adults only)	-0.01	-0.60 *	-0.05	—	—	—
Frequent headaches	-0.24	-0.02	-0.07	-0.58	-0.20	0.00
Mental health problems (adults only)	-0.78 **	-0.40	-0.52 *	—	—	—
Number of months of MA/MNCare coverage	1.38 *	-0.02	0.64	-1.44	-1.29	-0.72
Number of months uninsured	1.58	0.03	0.80	-1.62	-2.58 *	-1.37
Income between \$10,000 and \$20,000	0.13	-0.35	0.23	0.15	-0.44	-0.35
Income greater than \$20,000	0.41	-0.54	0.18	0.35	-0.42	-0.13
Family size	0.08	0.01	0.03	0.01	0.09	0.02
Adult and child case	-0.39	-0.10	-0.43	0.18	-0.26	0.21
Reported health status is fair or poor	-0.02	-0.14	-0.24	-0.85	-0.85	-0.78 **
Smokes (adults only)	-0.23	-1.16 ***	-0.55 **	—	—	—
Has selected health condition	-0.19	-0.67 *	-0.15	0.29	-0.33	-0.37
Has impairment or health problem that limits daily activities	-0.49	-0.08	-0.22	-0.58	-0.20	0.10
Has impairment or health problem that limits work or school activities	0.22	1.20 **	0.67 *	-0.86	-1.08 **	-0.82 *
Worries about health more than others/Parent worries about health more than others	0.43	-0.35	-0.09	0.28	-0.15	-0.42
Worries about health less than others/Parent worries about health less than others	0.42	0.50	0.23	0.42	0.24	0.14
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.01 ***	0.00
Distance from nearest hospital trauma unit (miles)	-0.01	-0.01	-0.01	0.00	-0.01	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.01	0.00	0.00	0.00	0.00
Unemployment rate in county	-0.10	-0.13	-0.05	-0.21	0.05	0.10

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had hospital stay in last year (excluding stay for delivery)						
PMAP county	—	0.38	0.55 **	—	0.26	0.00
Post period	0.06	—	0.50 **	0.20	—	-0.05
Post period and PMAP county	—	—	-0.46	—	—	0.06
Age (years)	-0.02	-0.01	-0.01	-0.05	-0.09 *	-0.10 ***
Was pregnant last year or had selected health problem (adults only)	0.98 ***	0.55 *	0.89 ***	—	—	—
Female	0.40	0.03	0.15	-0.32	-0.24	-0.35 *
White	0.64	0.55	0.55 *	0.13	-0.56	-0.67 *
High school graduate or more/Parent is high school graduate or more	-0.01	0.37	0.03	-0.23	-0.13	-0.01
Never married/Parent never married	-0.18	-0.01	-0.06	0.34	-0.77 *	-0.24
Married/Parent is married	0.36	0.01	0.05	0.23	-0.71 *	0.11
Ever worked/Parent ever worked	-0.01	-0.35	-0.23	-0.47	-0.29	-0.43 *
Low back pain (adults only)	-0.57 **	0.02	-0.17	—	—	—
Frequent headaches	0.52 *	0.21	0.26	-0.34	-0.24	0.11
Mental health problems (adults only)	0.04	-0.18	0.03	—	—	—
Number of months of MA/MNCare coverage	-0.45	-0.28	-0.11	-0.53	2.28	0.69
Number of months uninsured	0.24	-0.46	-0.33	0.85	1.53	1.48
Income between \$10,000 and \$20,000	0.38	0.24	0.17	0.80 **	1.02 **	0.72 **
Income greater than \$20,000	0.19	0.09	-0.01	0.76 *	1.09 **	0.70 **
Family size	0.03	-0.01	0.03	-0.41 **	-0.25 **	-0.30 ***
Adult and child case	-0.46 *	-0.20	-0.30	-0.34	-0.20	0.05
Reported health status is fair or poor	0.45	0.53 *	0.36 *	1.16 **	0.08	1.03 ***
Smokes (adults only)	0.01	-0.30	-0.04	—	—	—
Has selected health condition	-0.23	-0.15	-0.26	0.77 **	0.64	0.36
Has impairment or health problem that limits daily activities	0.83 ***	0.24	0.52 **	1.14 ***	1.28 ***	0.94 ***
Has impairment or health problem that limits work or school activities	0.05	0.54	0.24	0.61	1.08 *	0.79 *
Worries about health more than others/Parent worries about health more than others	0.08	-0.28	-0.04	-0.38	-0.31	-0.31
Worries about health less than others/Parent worries about health less than others	0.38	0.34	0.41 **	0.36	0.10	0.41 *
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.00	0.01	0.03 ***	0.02 **	0.01 *
Distance from Twin Cities safety net hospitals (miles)	0.00	-0.01	0.00	0.00	0.00	0.01 *
Unemployment rate in county	0.19	0.04	0.09	-0.25	-0.20	-0.27 *

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had ER visit in last year (excluding falls and accidents)						
PMP county	—	-0.42 **	-0.03	—	-0.32	0.29
Post period	0.08	—	0.55 ***	-0.45 *	—	0.22
Post period and PMP county	—	—	-0.39	—	—	-0.57 **
Age (years)	-0.02	-0.02 *	-0.02 **	-0.15 ***	-0.14 ***	-0.14 ***
Was pregnant last year or had selected health problem (adults only)	0.56 **	0.30	0.46 ***	—	—	—
Female	0.34	0.47 *	0.34 *	-0.10	-0.07	0.05
White	-0.50	-0.58 **	-0.29	-0.78 *	-0.02	-0.06
High school graduate or more/Parent is high school graduate or more	0.00	0.49 **	0.19	-0.03	-0.11	0.09
Never married/Parent never married	0.24	0.16	0.29	0.72 **	0.11	0.12
Married/Parent is married	0.44	0.13	0.22	-0.24	-0.29	-0.17
Ever worked/Parent ever worked	0.43	-0.05	0.03	0.11	-0.40	-0.10
Low back pain (adults only)	-0.17	0.23	0.14	—	—	—
Frequent headaches	0.55 **	0.40 *	0.47 ***	1.04 **	0.37	0.58 *
Mental health problems (adults only)	0.40	0.01	0.10	—	—	—
Number of months of MA/MNCare coverage	-0.25	0.66	0.27	-0.16	-0.07	-0.01
Number of months uninsured	-0.66	0.54	0.14	0.66	1.06	0.70
Income between \$10,000 and \$20,000	0.06	0.24	0.00	-0.02	-0.31	-0.11
Income greater than \$20,000	0.35	0.04	-0.07	0.53 *	-0.04	0.11
Family size	-0.07	0.10 *	0.06	-0.15 **	-0.08	-0.11 **
Adult and child case	-0.43 *	-0.18	-0.21	-0.15	0.04	0.03
Reported health status is fair or poor	0.11	0.56 **	0.32 *	0.88 **	0.80 *	0.82 ***
Smokes (adults only)	0.50 **	0.49 ***	0.27 **	—	—	—
Has selected health condition	-0.20	-0.02	0.00	1.07 ***	0.83 ***	0.61 ***
Has impairment or health problem that limits daily activities	0.74 **	0.38	0.55 ***	0.64 *	0.88 ***	0.72 ***
Has impairment or health problem that limits work or school activities	-0.05	0.12	0.09	1.32 **	1.13 *	0.83 **
Worries about health more than others/Parent worries about health more than others	0.16	0.26	0.28	0.23	-0.23	0.19
Worries about health less than others/Parent worries about health less than others	0.39 *	0.30	0.38 **	0.07	0.01	-0.07
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.01	0.00	0.00	0.01	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	-0.04	0.12	0.04	-0.12	-0.17	-0.14

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had visit to doctor/other provider in last year						
PMAP county	—	-0.15	-0.03	—	0.25	0.25
Post period	0.69 ***	—	0.75 ***	0.68 **	—	0.91 ***
Post period and PMAP county	—	—	-0.20	—	—	-0.23
Age (years)	-0.01	-0.02 *	-0.02 **	-0.10 ***	-0.10 ***	-0.11 ***
Was pregnant last year or had selected health problem (adults only)	0.31	0.36	0.14	—	—	—
Female	0.76 **	0.80 ***	0.72 ***	0.03	0.26	0.12
White	0.46	0.25	0.29	-0.23	-0.21	-0.33
High school graduate or more/Parent is high school graduate or more	0.43 *	0.55 **	0.32 *	0.60 **	0.47	0.44 **
Never married/Parent never married	-0.41	0.18	-0.26	-0.22	0.56	-0.05
Married/Parent is married	-0.01	0.17	-0.04	-0.16	-0.13	-0.38
Ever worked/Parent ever worked	0.17	-0.31	-0.14	0.21	-0.07	-0.17
Low back pain (adults only)	-0.38	-0.19	-0.13	—	—	—
Frequent headaches	0.74 ***	0.29	0.41 **	0.03	0.84	0.71 *
Mental health problems (adults only)	0.92 **	1.09 **	0.72 ***	—	—	—
Number of months of MA/MNCare coverage	-0.17	-0.20	0.08	-0.27	-1.06	-0.70
Number of months uninsured	-0.84	-0.89	-0.50	-0.55	-1.84	-1.82 **
Income between \$10,000 and \$20,000	0.45 *	0.39	0.19	0.53	0.68 *	0.26
Income greater than \$20,000	0.82 ***	0.33	0.41 **	0.70 **	0.49	0.51 **
Family size	-0.08	0.01	-0.03	-0.05	0.01	-0.03
Adult and child case	-0.43	-0.20	-0.51 ***	-0.06	-0.30	-0.18
Reported health status is fair or poor	0.44	0.49	0.40 *	0.13	1.29	0.99 **
Smokes (adults only)	0.38 *	0.53 **	0.28 *	—	—	—
Has selected health condition	-0.20	0.12	0.20	0.08	0.74	0.42
Has impairment or health problem that limits daily activities	0.28	0.54	0.19	2.16 **	0.74	0.56
Has impairment or health problem that limits work or school activities	1.32 **	0.61	0.93 **	1.49 *	0.36	-0.08
Worries about health more than others/Parent worries about health more than others	-0.66 **	-0.26	-0.30	0.25	-0.31	0.22
Worries about health less than others/Parent worries about health less than others	-0.52 **	-0.09	-0.15	-0.59 **	-0.43	-0.12
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	-0.01	0.00
Distance from nearest hospital trauma unit (miles)	-0.01	0.00	0.00	0.00	-0.01	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	0.08	-0.08	-0.07	0.02	0.14	0.06

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had visit to doctor in last 3 months						
PMAP county	—	0.25	-0.10	—	0.32	0.10
Post period	0.45 **	—	0.16	0.44 **	—	0.28 *
Post period and PMAP county	—	—	0.27	—	—	0.21
Age (years)	0.00	0.00	-0.01	-0.09 ***	-0.09 ***	-0.09 ***
Was pregnant last year or had selected health problem (adults only)	0.66 ***	0.31	0.38 **	—	—	—
Female	0.67 **	0.75 ***	0.82 ***	-0.24	-0.23	-0.22 *
White	0.48	-0.07	0.08	-0.18	0.02	-0.07
High school graduate or more/Parent is high school graduate or more	0.35	0.58 ***	0.30 **	0.43 *	0.20	0.37 **
Never married/Parent never married	-0.13	0.14	-0.08	-0.03	-0.20	-0.19
Married/Parent is married	0.07	0.21	0.07	-0.23	-0.45 **	-0.38 **
Ever worked/Parent ever worked	0.34	0.02	0.05	0.04	0.09	0.01
Low back pain (adults only)	-0.30	-0.23	-0.13	—	—	—
Frequent headaches	0.84 ***	0.58 ***	0.36 ***	-0.35	-0.10	-0.02
Mental health problems (adults only)	0.83 **	0.53 **	0.39 *	—	—	—
Number of months of MA/MNCare coverage	-0.51	0.06	-0.12	0.70	0.21	0.22
Number of months uninsured	-0.75	-0.82	-0.37	0.34	-0.79	-0.74
Income between \$10,000 and \$20,000	0.41 *	0.17	0.07	0.22	0.14	0.06
Income greater than \$20,000	0.72 ***	0.18	0.27	0.43 *	0.39	0.40 **
Family size	-0.11	-0.11 *	-0.08 *	-0.06	-0.07	-0.07 *
Adult and child case	-0.48 **	-0.21	-0.47 ***	-0.04	0.12	-0.05
Reported health status is fair or poor	0.53 *	0.25	0.26	0.99 *	1.19 *	1.09 ***
Smokes (adults only)	0.10	0.09	0.04	—	—	—
Has selected health condition	-0.21	0.13	0.19	-0.09	0.23	0.02
Has impairment or health problem that limits daily activities	0.25	0.33	0.30	1.24 ***	1.37 ***	0.96 ***
Has impairment or health problem that limits work or school activities	1.12 ***	0.80 **	0.82 ***	1.49 **	0.36	0.55
Worries about health more than others/Parent worries about health more than others	-0.71 **	-0.20	-0.36 *	0.07	-0.53 **	-0.09
Worries about health less than others/Parent worries about health less than others	-0.25	-0.27	-0.22	-0.42 **	-0.14	-0.22
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.00	-0.01	0.00	0.00	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	0.00	-0.03	-0.05	-0.08	-0.07	-0.02

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had preventive care visit in last 3 months						
PMAP county	—	0.36 *	0.06	—	-0.15	0.20
Post period	0.29	—	0.03	0.28	—	0.58 ***
Post period and PMAP county	—	—	0.22	—	—	-0.32
Age (years)	-0.01	-0.01	-0.02 *	-0.10 ***	-0.07 ***	-0.10 ***
Was pregnant last year or had selected health problem (adults only)	0.67 ***	0.40 *	0.58 ***	—	—	—
Female	1.11 ***	1.20 ***	1.16 ***	-0.18	-0.19	-0.10
White	-0.12	-0.16	-0.23	-0.15	0.23	0.02
High school graduate or more/Parent is high school graduate or more	0.39 *	0.51 **	0.36 **	0.38 *	0.25	0.29 *
Never married/Parent never married	-0.02	0.02	0.03	0.53 **	0.23	0.20
Married/Parent is married	0.12	-0.13	0.08	0.46 **	0.32	0.19
Ever worked/Parent ever worked	-0.12	0.14	-0.16	-0.01	0.02	-0.15
Low back pain (adults only)	-0.34	-0.20	-0.26 *	—	—	—
Frequent headaches	0.33	0.19	0.02	0.04	0.03	0.04
Mental health problems (adults only)	0.27	0.60 ***	0.53 ***	—	—	—
Number of months of MA/MNCare coverage	-0.29	-0.03	-0.05	0.34	-0.26	0.39
Number of months uninsured	-0.99	-0.68	-0.25	-0.45	-1.41	-0.65
Income between \$10,000 and \$20,000	0.55 **	0.05	0.10	-0.03	0.18	-0.06
Income greater than \$20,000	0.78 ***	0.20	0.44 **	0.00	0.30	0.31 *
Family size	-0.14 *	-0.07	-0.10 *	-0.07	-0.10 *	-0.11 **
Adult and child case	-0.75 ***	-0.66 ***	-0.74 ***	-0.02	-0.15	-0.25 *
Reported health status is fair or poor	0.14	-0.35	-0.19	-0.37	-0.33	-0.37
Smokes (adults only)	-0.10	-0.20	-0.06	—	—	—
Has selected health condition	-0.26	0.11	0.01	0.31	0.48 *	0.21
Has impairment or health problem that limits daily activities	0.32	0.22	0.31	0.41	0.84 ***	0.66 ***
Has impairment or health problem that limits work or school activities	0.80 **	0.77 **	0.66 **	0.64	0.06	0.36
Worries about health more than others/Parent worries about health more than others	-0.68 **	-0.07	-0.35 *	0.13	-0.58 **	-0.18
Worries about health less than others/Parent worries about health less than others	-0.16	-0.18	-0.25	-0.12	-0.19	-0.17
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.00	0.00	0.00	0.01	0.01 **	0.01
Distance from Twin Cities safety net hospitals (miles)	-0.01 **	-0.01 ***	-0.01 **	0.00	0.00	0.00
Unemployment rate in county	0.11	0.00	0.01	0.03	-0.01	0.07

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had PAP smear in last year (women only)						
PMP county	—	0.14	0.13	—	—	—
Post period	0.21	—	0.25	—	—	—
Post period and PMP county	—	—	-0.01	—	—	—
Age (years)	-0.02	0.00	-0.02 **	—	—	—
Was pregnant last year or had selected health problem (adults only)	0.71 **	0.46	0.86 ***	—	—	—
Female	0.43	0.45	0.27	—	—	—
White	-0.05	-0.23	-0.14	—	—	—
High school graduate or more/Parent is high school graduate or more	0.05	0.10	0.11	—	—	—
Never married/Parent never married	0.22	-0.10	0.09	—	—	—
Married/Parent is married	0.04	-0.11	0.26	—	—	—
Ever worked/Parent ever worked	0.48	0.00	0.00	—	—	—
Low back pain (adults only)	-0.12	-0.66 ***	-0.09	—	—	—
Frequent headaches	-0.14	0.22	-0.17	—	—	—
Mental health problems (adults only)	0.85 **	0.29	0.48 *	—	—	—
Number of months of MA/MNCare coverage	-0.10	0.11	-0.01	—	—	—
Number of months uninsured	0.09	0.72	0.07	—	—	—
Income between \$10,000 and \$20,000	0.18	0.18	-0.09	—	—	—
Income greater than \$20,000	0.55	0.17	0.09	—	—	—
Family size	0.06	0.04	0.02	—	—	—
Adult and child case	0.02	-0.79 **	-0.50 **	—	—	—
Reported health status is fair or poor	-0.51	-0.52	-0.35	—	—	—
Smokes (adults only)	-0.20	0.05	0.02	—	—	—
Has selected health condition	-0.61 *	-0.20	-0.43 *	—	—	—
Has impairment or health problem that limits daily activities	0.21	0.95 **	0.13	—	—	—
Has impairment or health problem that limits work or school activities	0.00	-0.34	-0.23	—	—	—
Worries about health more than others/Parent worries about health more than others	-0.54	-0.39	-0.05	—	—	—
Worries about health less than others/Parent worries about health less than others	0.09	-0.26	-0.14	—	—	—
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	—	—	—
Distance from nearest hospital trauma unit (miles)	0.02 *	0.00	0.00	—	—	—
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	—	—	—
Unemployment rate in county	-0.09	0.23	0.10	—	—	—

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had visit to specialist in last 3 months						
PMAP county	—	0.47 **	0.21	—	0.10	0.58
Post period	0.39	—	0.27	0.00	—	0.37 *
Post period and PMAP county	—	—	0.11	—	—	-0.54
Age (years)	0.01	0.02	0.01	0.01	0.02	-0.01
Was pregnant last year or had selected health problem (adults only)	0.31	0.32	0.17	—	—	—
Female	0.22	0.11	0.24	-0.33	-0.27	-0.28
White	0.45	0.33	0.47	1.39 ***	0.42 **	0.56 ***
High school graduate or more/Parent is high school graduate or more	0.43	0.85 ***	0.54 **	-0.16 **	0.20	0.30
Never married/Parent never married	0.33	0.29	0.10	-0.10	0.28	0.07
Married/Parent is married	0.14	0.34	0.20	0.32	0.05	0.04
Ever worked/Parent ever worked	-0.11	-0.01	-0.09	0.10	-0.19	-0.17
Low back pain (adults only)	0.13	0.09	0.09	—	—	—
Frequent headaches	0.38	0.20	0.22	0.34	0.18 *	0.32
Mental health problems (adults only)	0.50	0.75 ***	0.51 **	—	—	—
Number of months of MA/MNCare coverage	-0.67	0.18	-0.09	0.52	0.13 **	0.24
Number of months uninsured	-0.18	-0.54	-0.47	0.78	-0.04 ***	0.01 *
Income between \$10,000 and \$20,000	0.37	0.04	0.13	0.03	0.13	-0.04
Income greater than \$20,000	0.42	0.11	0.12	0.13	0.05	0.17
Family size	-0.02	-0.09	-0.05	-0.16	-0.01	-0.07
Adult and child case	-0.03	-0.16	-0.21	-0.37	-0.39 ***	-0.48
Reported health status is fair or poor	0.53 *	0.43	0.33 *	0.42	0.25	0.33
Smokes (adults only)	-0.37 *	-0.15	-0.09	—	—	—
Has selected health condition	-0.50 *	-0.42	-0.14	0.64	0.24	0.17
Has impairment or health problem that limits daily activities	0.79 **	0.61 **	0.56 ***	1.05 *	1.40	1.32
Has impairment or health problem that limits work or school activities	1.05 ***	1.28 ***	1.10 ***	1.30	-0.08	0.63
Worries about health more than others/Parent worries about health more than others	-0.22	0.30	0.13	0.29	-0.79 *	0.00
Worries about health less than others/Parent worries about health less than others	-0.21	0.25	0.04	-0.03	0.16 *	0.10
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.00	0.00	0.00	0.01	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	-0.01	0.00	0.00
Unemployment rate in county	0.08	0.09	0.03	0.18	0.13	0.13

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had dental visit in last year						
PMP county	—	0.26	0.16	—	-0.10	0.46
Post period	-0.06	—	-0.07	0.02	—	0.44
Post period and PMP county	—	—	0.04	—	—	-0.58
Age (years)	0.02	0.01	0.01	-0.02	-0.02	-0.02
Was pregnant last year or had selected health problem (adults only)	0.00	0.06	-0.21	—	—	—
Female	0.21	-0.07	0.11	0.08	-0.19	0.03
White	0.00	-0.44	-0.26	1.49	0.97	0.87
High school graduate or more/Parent is high school graduate or more	0.21	0.12	0.28 *	0.83	0.29	0.21
Never married/Parent never married	-0.09	-0.08	-0.01	-0.32	0.39	0.15
Married/Parent is married	0.14	0.32	0.04	-0.41	0.19	-0.25
Ever worked/Parent ever worked	-0.14	-0.59 **	-0.15	0.28	-0.02	0.10
Low back pain (adults only)	0.08	-0.07	-0.14	—	—	—
Frequent headaches	0.13	0.04	0.06	-0.09	-0.86	0.06
Mental health problems (adults only)	-0.15	0.19	-0.02	—	—	—
Number of months of MA/MNCare coverage	0.27	-0.55	-0.15	0.01	-2.34	-0.28
Number of months uninsured	-0.01	-0.03	-0.33	-0.87	-4.29	-1.48
Income between \$10,000 and \$20,000	0.15	-0.02	0.04	0.41	0.30	0.30
Income greater than \$20,000	0.41	-0.01	0.09	0.24	0.16	0.27
Family size	-0.19 ***	-0.06	-0.02	0.08	0.04	0.09
Adult and child case	-0.57 **	-0.06	-0.25	-0.30	-0.91	-0.30
Reported health status is fair or poor	0.30	0.13	0.06	0.00	-0.50	-0.12
Smokes (adults only)	0.35 *	0.04	0.22 *	—	—	—
Has selected health condition	-0.41	0.20	0.12	-0.36	-0.14	0.17
Has impairment or health problem that limits daily activities	-0.23	0.04	0.10	1.28	0.29	-0.08
Has impairment or health problem that limits work or school activities	-0.38	-0.53	0.01	0.10	0.56	0.49
Worries about health more than others/Parent worries about health more than others	0.01	0.05	0.17	-0.50	0.95	0.14
Worries about health less than others/Parent worries about health less than others	-0.31	0.07	-0.09	-0.02	0.57	0.23
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	-0.01	0.00	0.00	0.00	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	-0.07	0.05	0.00	-0.05	-0.04	0.03

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had any unmet need for health care in last year						
PMAP county	—	-0.30	0.19	—	-0.10	0.02
Post period	-0.25	—	0.05	0.04	—	0.00
Post period and PMAP county	—	—	-0.30	—	—	0.04
Age (years)	0.01	-0.01	0.00	0.03	0.05 ***	0.03 *
Was pregnant last year or had selected health problem (adults only)	-0.14	-0.10	0.00	—	—	—
Female	0.22	0.28	0.11	-0.33 *	-0.05	-0.03
White	-0.29	0.03	-0.14	-0.56	-0.25	-0.55 **
High school graduate or more/Parent is high school graduate or more	0.27	0.06	0.25 *	0.16	0.23	0.27
Never married/Parent never married	-0.24	0.11	-0.02	-0.30	-0.21	-0.19
Married/Parent is married	-0.01	-0.01	-0.10	-0.43	-0.06	-0.32 *
Ever worked/Parent ever worked	0.11	-0.03	0.20	-0.47 *	-0.27	-0.22
Low back pain (adults only)	0.24	0.77 ***	0.47 ***	—	—	—
Frequent headaches	0.35 *	0.25	0.25 *	0.05	0.42	0.16
Mental health problems (adults only)	1.11 ***	1.00 ***	0.92 ***	—	—	—
Number of months of MA/MNCare coverage	-0.14	0.37	0.05	-0.72	-0.88	-0.11
Number of months uninsured	0.09	2.20 ***	0.67	0.59	1.50 *	1.30 **
Income between \$10,000 and \$20,000	-0.29	-0.06	-0.28 **	-0.15	-0.08	-0.18
Income greater than \$20,000	-0.05	0.03	-0.15	-0.04	-0.31	-0.33 *
Family size	0.17 **	0.23 ***	0.17 ***	0.08	0.08	0.09 **
Adult and child case	-0.20	0.12	0.00	-0.42 *	-0.44 **	-0.48 ***
Reported health status is fair or poor	0.02	0.45 *	0.24	0.56	0.50	0.38
Smokes (adults only)	0.30	0.08	0.30 **	—	—	—
Has selected health condition	0.43 *	0.30	0.19	-0.44	0.22	-0.08
Has impairment or health problem that limits daily activities	0.75 **	0.53 **	0.30	1.16 ***	0.57 *	0.90 ***
Has impairment or health problem that limits work or school activities	-0.03	0.07	0.43	-0.06	-0.13	-0.01
Worries about health more than others/Parent worries about health more than others	-0.31	0.39	0.20	0.08	0.30	0.03
Worries about health less than others/Parent worries about health less than others	-0.28	0.03	-0.09	-0.19	-0.27	-0.47 ***
Distance from nearest teaching hospital (miles)	0.00	-0.01 **	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.00	0.01 *	0.00	0.00	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	-0.03	0.05	0.05	0.05	0.05	0.05

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had unmet need for hospital care in last year²						
PMAP county	—	-0.89 *	-0.01	—	0.29	0.31
Post period	-0.88	—	-0.10	-0.63	—	-0.72
Post period and PMAP county	—	—	-0.74	—	—	0.58
Age (years)	-0.02	-0.02	-0.02	-0.04	-0.18 **	-0.01
Was pregnant last year or had selected health problem (adults only)	0.66	-0.88	0.30	—	—	—
Female	-0.92	-0.08	-0.51	0.67	2.67	0.65
White	-0.99	-1.18 **	-1.30 ***	-1.59	-0.79	-0.85
High school graduate or more/Parent is high school graduate or more	0.00	0.85	0.31	—	—	—
Never married/Parent never married	-0.87	0.15	-0.21	-0.79	0.42	-0.45
Married/Parent is married	-0.36	-0.25	-0.42	-0.59	-0.59	-0.46
Ever worked/Parent ever worked	0.97	-0.61	-0.08	—	—	—
Low back pain (adults only)	0.30	1.47 ***	0.49	—	—	—
Frequent headaches	0.10	0.82 *	0.45	0.99	2.50	0.10
Mental health problems (adults only)	1.43 **	0.18	0.82 **	—	—	—
Number of months of MA/MN Care coverage	-1.16	-0.04	-0.22	0.02	-2.95	-1.84 *
Number of months uninsured	0.24	2.14	0.98	0.83	1.11	-1.64
Income between \$10,000 and \$20,000	1.02 *	0.52	0.62 *	0.27	-0.70	-1.07
Income greater than \$20,000	0.31	0.43	0.32	-0.74	-2.75 *	-1.86 **
Family size	-0.20	0.00	-0.11	0.32	0.40	0.22
Adult and child case	0.27	0.06	0.42	-0.69	-2.03	-1.42 **
Reported health status is fair or poor	0.39	0.85 *	0.50	1.91 *	1.31	0.99
Smokes (adults only)	0.45	-0.15	0.22	—	—	—
Has selected health condition	-0.59	1.16 *	0.05	—	—	—
Has impairment or health problem that limits daily activities	0.34	-0.07	0.27	-0.10	0.35	0.54
Has impairment or health problem that limits work or school activities	1.67 *	0.99	1.33 **	—	—	—
Worries about health more than others/Parent worries about health more than others	-0.70	0.33	-0.20	—	—	—
Worries about health less than others/Parent worries about health less than others	0.72	0.73	0.65 **	-0.42	0.43	-0.16
Distance from nearest teaching hospital (miles)	0.00	-0.01	0.00	0.01	0.02	0.01
Distance from nearest hospital trauma unit (miles)	-0.01	0.01	0.00	0.00	0.03	0.01
Distance from Twin Cities safety net hospitals (miles)	-0.01	0.00	0.00	0.00	0.00	-0.01
Unemployment rate in county	-0.10	-0.02	-0.06	-0.04	0.83	0.48

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had unmet need for doctor care in last year						
PMP county	—	-0.34	0.21	—	-0.07	0.04
Post period	-0.71 ***	—	-0.43 **	-0.02	—	-0.04
Post period and PMP county	—	—	-0.23	—	—	0.07
Age (years)	0.01	-0.01	-0.01	-0.02	-0.01	-0.02
Was pregnant last year or had selected health problem (adults only)	0.06	0.08	0.00	—	—	—
Female	0.17	0.09	0.04	-0.43 *	-0.03	-0.08
White	0.21	0.62 **	0.22	-0.32	-0.21	-0.36
High school graduate or more/Parent is high school graduate or more	0.38 *	0.17	0.27 *	-0.02	0.02	0.02
Never married/Parent never married	-0.22	-0.22	-0.03	-0.47	-0.19	0.00
Married/Parent is married	-0.15	-0.33	-0.17	-0.33	-0.05	-0.19
Ever worked/Parent ever worked	0.07	-0.14	0.12	-0.87 ***	-0.67 **	-0.51 **
Low back pain (adults only)	-0.12	0.41 **	0.18	—	—	—
Frequent headaches	0.65 ***	0.22	0.47 ***	0.66	0.37	0.42
Mental health problems (adults only)	0.94 ***	0.30	0.60 ***	—	—	—
Number of months of MA/MNCare coverage	-0.61	-0.08	-0.05	-1.21	-2.10 ***	-0.77
Number of months uninsured	0.16	1.48 **	0.59	-0.04	-0.15	0.43
Income between \$10,000 and \$20,000	-0.31	-0.38 *	-0.34 **	-0.40	-0.40	-0.29
Income greater than \$20,000	-0.49 *	0.01	-0.22	-0.20	-0.84 **	-0.46 *
Family size	0.13 *	0.10	0.09 *	-0.02	0.05	0.03
Adult and child case	0.09	0.21	0.09	-0.57 *	-1.14 ***	-1.00 ***
Reported health status is fair or poor	0.23	1.14 ***	0.58 ***	0.60	1.55 ***	0.64 **
Smokes (adults only)	0.42 **	0.30	0.41 ***	—	—	—
Has selected health condition	0.40	0.09	0.23	-0.38	-0.41	-0.10
Has impairment or health problem that limits daily activities	0.27	0.11	0.27	1.01 ***	0.79 **	0.74 ***
Has impairment or health problem that limits work or school activities	-0.12	0.52	0.39	0.27	0.29	-0.02
Worries about health more than others/Parent worries about health more than others	-0.47	0.26	0.05	-0.27	0.09	-0.17
Worries about health less than others/Parent worries about health less than others	-0.43 *	-0.22	-0.24	-0.11	-0.27	-0.64 ***
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	-0.01	0.01	0.00	-0.01	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.01	0.00	0.00
Unemployment rate in county	-0.01	-0.01	0.07	-0.03	0.08	0.04

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had unmet need for specialist care in last year						
PMAP county	—	0.16	0.12	—	-0.11	-0.20
Post period	0.29	—	0.03	0.82 **	—	0.62 *
Post period and PMAP county	—	—	0.10	—	—	0.08
Age (years)	0.02	0.03	0.02	-0.02	0.05	0.01
Was pregnant last year or had selected health problem (adults only)	0.01	-0.22	-0.15	—	—	—
Female	0.16	0.45	0.15	-0.40	0.60 *	0.14
White	-1.07 ***	-0.77 **	-0.79 ***	-0.94	-1.10 **	-0.84 **
High school graduate or more/Parent is high school graduate or more	0.21	0.32	0.40 *	0.16	0.63	0.70 *
Never married/Parent never married	-0.09	0.02	0.08	-0.25	0.56	0.32
Married/Parent is married	0.42	0.25	0.05	-0.32	0.42	-0.14
Ever worked/Parent ever worked	-0.31	-0.18	-0.03	0.25	0.62	0.64
Low back pain (adults only)	0.06	0.60 **	0.50 **	—	—	—
Frequent headaches	0.49 *	0.58 **	0.50 ***	0.40	-0.42	-0.13
Mental health problems (adults only)	0.62 *	0.33	0.62 ***	—	—	—
Number of months of MA/MNCare coverage	-0.63	0.58	0.07	0.15	-1.23	-0.20
Number of months uninsured	0.46	1.85 *	0.85	1.88	0.84	0.95
Income between \$10,000 and \$20,000	0.08	0.28	0.09	0.09	0.63	0.42
Income greater than \$20,000	-0.41	0.56	0.07	0.16	0.22	0.26
Family size	-0.16	-0.10	-0.04	-0.07	0.01	0.02
Adult and child case	0.53	0.44	0.29	-0.30	-0.58	-0.38
Reported health status is fair or poor	0.64 **	0.87 ***	0.71 ***	1.41 ***	0.13	1.02 ***
Smokes (adults only)	0.04	-0.16	-0.07	—	—	—
Has selected health condition	-0.33	0.24	0.03	-1.02 *	0.19	-0.40
Has impairment or health problem that limits daily activities	0.90 **	0.34	0.37	1.77 ***	1.53 ***	1.63 ***
Has impairment or health problem that limits work or school activities	0.09	0.08	0.20	-0.06	0.97 *	0.90 **
Worries about health more than others/Parent worries about health more than others	-0.77	0.43	0.40	-0.04	-0.33	-0.28
Worries about health less than others/Parent worries about health less than others	-0.03	0.33	0.15	-0.63	-0.32	-0.51
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.00	0.00	0.00	0.03 *	0.03 **	0.03 ***
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	-0.04	0.00	-0.01	0.10	-0.02	0.02

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had unmet need for mental health care in last year						
PMAP county	—	-0.38	0.56	—	0.60	0.61
Post period	-0.25	—	0.66	0.67	—	0.61
Post period and PMAP county	—	—	-0.79	—	—	-0.16
Age (years)	0.06 **	0.03	0.03	0.12 **	0.12 ***	0.09 ***
Was pregnant last year or had selected health problem (adults only)	-0.77	-0.05	-0.23	—	—	—
Female	0.41	0.24	0.32	-0.77	0.48	-0.10
White	0.66	0.77	0.63	-0.21	-0.19	-0.60
High school graduate or more/Parent is high school graduate or more	1.43 ***	0.49	1.02 **	0.84	0.53	0.77
Never married/Parent never married	0.52	-0.02	0.13	0.50	0.56	0.18
Married/Parent is married	-0.04	0.27	-0.02	-0.88	-0.45	-1.12 *
Ever worked/Parent ever worked	-0.04	-0.10	-0.05	-0.47	-0.61	-0.17
Low back pain (adults only)	0.57	0.91 **	0.46	—	—	—
Frequent headaches	0.80 *	0.25	0.57 *	-1.76	0.62	-0.38
Mental health problems (adults only)	2.95 ***	2.33 ***	2.54 ***	—	—	—
Number of months of MA/MNCare coverage	-0.51	0.80	-0.42	-1.10	-1.24	0.24
Number of months uninsured	-0.45	0.48	-0.35	-1.84	0.62	0.96
Income between \$10,000 and \$20,000	0.02	0.01	-0.18	0.48	-0.64	-0.24
Income greater than \$20,000	-1.35	-0.82	-0.74 *	-0.10	-1.75 **	-0.81
Family size	0.34 **	0.05	0.17 **	-0.08	0.06	0.05
Adult and child case	-0.19	0.88 *	0.61	-0.15	-0.86 *	-0.51
Reported health status is fair or poor	0.55	0.01	0.08	0.74	-1.07	0.85
Smokes (adults only)	-0.29	-0.20	-0.25	—	—	—
Has selected health condition	0.91	0.30	0.37	-0.96	0.43	-0.32
Has impairment or health problem that limits daily activities	0.29	-0.18	0.12	0.97	0.07	0.55
Has impairment or health problem that limits work or school activities	-1.39 **	-0.60	-0.56	2.54 ***	0.97	1.58 ***
Worries about health more than others/Parent worries about health more than others	0.31	0.48	0.50	0.11	0.26	-0.08
Worries about health less than others/Parent worries about health less than others	-0.20	-0.23	-0.19	-0.72	-0.70	-0.75
Distance from nearest teaching hospital (miles)	0.00	0.00	0.00	-0.01 *	-0.01	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.02	0.01	0.08 ***	0.01	0.02
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	-0.01	-0.01	-0.01 *
Unemployment rate in county	-0.36	-0.39 *	-0.33 *	-0.11	0.33	0.19

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had unmet need for dental care in last year						
PMAP county	—	-0.24	0.31 *	—	-0.14	-0.26
Post period	-0.04	—	0.41 **	0.38	—	0.10
Post period and PMAP county	—	—	-0.42 *	—	—	0.27
Age (years)	0.00	-0.01	0.00	0.08 ***	0.10 ***	0.09 ***
Was pregnant last year or had selected health problem (adults only)	-0.03	0.00	0.21	—	—	—
Female	0.40	0.55 **	0.26	0.00	0.02	0.02
White	-0.45	-0.17	-0.22	-0.40	-0.26	-0.56 *
High school graduate or more/Parent is high school graduate or more	0.09	0.26	0.33 **	0.40	0.46	0.44 *
Never married/Parent never married	-0.17	0.19	-0.14	-0.61	0.00	-0.29
Married/Parent is married	0.33	0.13	-0.05	-0.56	-0.11	-0.40 *
Ever worked/Parent ever worked	0.10	-0.24	0.01	-0.36	-0.17	-0.32
Low back pain (adults only)	0.15	0.50 ***	0.33 **	—	—	—
Frequent headaches	0.10	0.11	0.02	0.05	0.43	0.06
Mental health problems (adults only)	0.60 **	0.69 ***	0.62 ***	—	—	—
Number of months of MA/MN/Care coverage	-0.48	1.04 *	0.30	-0.43	0.34	0.17
Number of months uninsured	-0.24	2.75 ***	1.16 ***	0.75	2.87 ***	1.93 ***
Income between \$10,000 and \$20,000	-0.25	0.06	-0.21	-0.05	0.11	-0.21
Income greater than \$20,000	0.02	0.08	-0.07	-0.26	0.02	-0.36
Family size	0.13 *	0.21 ***	0.14 ***	0.17 **	0.09	0.11 **
Adult and child case	0.00	0.13	0.03	-0.28	-0.11	-0.21
Reported health status is fair or poor	-0.19	-0.02	-0.05	0.47	0.32	-0.03
Smokes (adults only)	0.28	0.24	0.23 *	—	—	—
Has selected health condition	0.38	0.13	0.00	-0.34	0.37	0.05
Has impairment or health problem that limits daily activities	0.76 **	0.79 ***	0.43 **	0.37	0.15	0.61 **
Has impairment or health problem that limits work or school activities	-0.10	-0.69 **	-0.29	-0.38	-0.80 *	-0.44
Worries about health more than others/Parent worries about health more than others	-0.30	-0.06	0.08	0.52	0.64 *	0.28
Worries about health less than others/Parent worries about health less than others	-0.26	0.02	-0.06	-0.21	-0.45	-0.38 *
Distance from nearest teaching hospital (miles)	-0.01 ***	-0.01 **	0.00 **	0.00	0.00	0.00
Distance from nearest hospital trauma unit (miles)	0.01	0.01 **	0.00	0.00	0.00	-0.01
Distance from Twin Cities safety net hospitals (miles)	0.00	0.00	0.00	0.00	0.00	0.00
Unemployment rate in county	0.05	0.13	0.13	0.10	0.13	0.12

Outcome and Explanatory Variable	Adults			Children		
	Pre-post	Matched Population	Difference in Differences	Pre-post	Matched Population	Difference in Differences
Had unmet need for prescription drugs in last year						
PMAP county	—	0.32	0.15	—	-1.22 **	-0.19
Post period	0.32	—	0.17	-0.34	—	0.29
Post period and PMAP county	—	—	0.15	—	—	-0.77
Age (years)	0.01	0.00	0.01	-0.14 ***	-0.04	-0.04
Was pregnant last year or had selected health problem (adults only)	0.37	0.13	0.21	—	—	—
Female	3.09 ***	0.04	0.36	-0.37	0.35	0.03
White	-1.15 **	-0.75 **	-0.72 **	-1.02	0.13	0.20
High school graduate or more/Parent is high school graduate or more	0.20	0.15	0.08	0.06	-0.84	-0.42
Never married/Parent never married	-0.61	-0.27	-0.18	-0.02	0.33	0.29
Married/Parent is married	0.10	-0.18	-0.12	-0.13	-0.70	-0.69
Ever worked/Parent ever worked	-0.22	-0.31	-0.34	-0.46	-0.88	-0.47
Low back pain (adults only)	0.67 *	0.75 **	0.35	—	—	—
Frequent headaches	0.36	0.34	0.64 ***	1.52 *	1.73 **	0.42
Mental health problems (adults only)	0.94 **	0.70 **	0.57 **	—	—	—
Number of months of MA/MN Care coverage	-1.96 ***	-0.35	-0.14	2.29	-2.20 **	-2.03 **
Number of months uninsured	0.15	1.43	1.48 **	2.49	1.97	-0.86
Income between \$10,000 and \$20,000	-0.34	-0.05	-0.07	0.79	0.66	0.40
Income greater than \$20,000	-0.62	0.40	0.18	0.50	0.43	0.12
Family size	0.05	-0.08	0.02	-0.05	-0.20	-0.11
Adult and child case	0.30	0.43	0.45	0.15	-0.85 *	-0.69 **
Reported health status is fair or poor	-0.30	0.27	-0.07	0.07	1.11 *	0.68 *
Smokes (adults only)	0.78 **	0.19	0.34	—	—	—
Has selected health condition	0.42	0.09	0.20	0.60	0.17	0.12
Has impairment or health problem that limits daily activities	0.79 *	0.53	0.67 **	1.03	1.84 ***	1.24 ***
Has impairment or health problem that limits work or school activities	0.65	0.57	0.41	1.50 *	-0.64	1.02 **
Worries about health more than others/Parent worries about health more than others	-0.98 **	-0.04	-0.36	-1.74	-0.44	-0.26
Worries about health less than others/Parent worries about health less than others	-0.07	-0.17	-0.25	-0.70	-0.57	-1.10 **
Distance from nearest teaching hospital (miles)	0.00	-0.01	0.00	0.01	0.01	0.00
Distance from nearest hospital trauma unit (miles)	0.00	0.01	0.00	-0.01	0.00	0.00
Distance from Twin Cities safety net hospitals (miles)	-0.01	0.00	0.00	0.00	-0.01	0.00
Unemployment rate in county	0.20	0.19	0.15	0.64	0.23	0.21

Source: 1998 and 1999 surveys of Medicaid beneficiaries in Minnesota.

* (**) (***) Value is significantly different from zero at the .10 (.05) (.01) level, two-tailed test.

¹Because all children with a impairment or health problem that limits their daily activities or their ability to attend school have a usual source of care, the estimates for this variable are based on a regression model that excludes those observations.

²The regression model for unmet need for hospital care for children excludes certain variables because of perfect prediction.