



Report Title: Patient Centered Primary Care Home (PCPCH) Evaluation: Cost and Efficiency

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**Patient Centered Primary Care (PCPCH) Evaluation:
Cost and Efficiency**

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EXECUTIVE SUMMARY
PCPCH Evaluation
Quantitative Assessment of Cost & Efficiency

The following executive summary provides an overview of the study design and results of the PCPCH quantitative assessment of cost and efficiency. This arm of the initial PCPCH evaluation was designed to assess the effects of PCPCH designation on the service utilization patterns and expenditures among early adopters of the PCPCH model in Oregon.

STUDY DESIGN

This study used APAC claims to assess change in utilization and expenditure among individuals receiving primary care in the initial group of practices adopting the PCPCH model. Early adopters were defined as practices receiving PCPCH designation the last calendar quarter of 2011, totaling 137 individual practice sites. Study data spanned two one-year periods – October 2010 through September 2011 (pre-PCPCH designation) and January 2012 through December 2012 (post-PCPCH designation).

A “difference-in-difference” design was employed which compares the pre-post expenditure and utilization changes in PCPCH practices to those found in non-PCPCH primary care practices. The difference in these pre-post changes is the estimated net effect of PCPCH designation on patient utilization and expenditure. Study subjects only included individuals with 100% primary care attribution to the PCPCH or non-PCPCH group in both the pre- and post- study years. Propensity score matching was also used to develop a non-PCPCH comparison group equivalent in regard to age, gender, insurance type, prospective risk score category, and insurance type.

Difference-in-difference designs coupled with propensity score matching are considered state of the art methods for assessing program or policy effects under natural experimental conditions. A variety of potential limitations, as noted in the body of the main report, still remain.

STUDY RESULTS

One of the initial findings of this study is that the patient population attributed to the 137 early PCPCH practices was found to be much younger and much more likely to be Medicaid insured than the average primary care user in Oregon. Details of these demographic differences can be found in Table 1 of the full report. Given this result, it should be noted that the overall study findings represent this younger, Medicaid insured population and may not represent effects for the “average” Oregonian receiving primary care.

Figures 1 & 2 below provide graphical summaries of the main study findings on percentage changes in utilization (visits or procedures) and expenditures per person which can be found in Table 4 of the full report. The results presented in Figures 1 & 2 represent the difference in pre-post percentage change between the PCPCH and non-PCPCH practice groups. Negative percentages reflect a decrease (and positive percentages reflect an increase) in use or expense relative to the trend identified by the non-

PCPCH practices. An asterisk indicates findings that are statistically significant at 5% level. The statistically significant findings for utilization and expenditure per person can be summarized as follows:

Utilization:

- Preventive procedures increased by 5.0% relative to non-PCPCH practices.
- Specialty office visits dropped by 6.9% relative to non-PCPCH practices.
- Pharmacy claims dropped by 11.4% relative to non-PCPCH practices.

Expenditure:

- Primary care visit expenditures dropped by 3.2% relative to non-PCPCH practices.
- Specialty office visit expenditures dropped by 6.6% relative to non-PCPCH practices.

Differences in the expenditure and utilization per person results reflect changes in the mix of services (and thus unit price) within the service categories. The utilization per person findings are largely driven, and supported, by results for the probability of any service use within a service category. These findings, in Tables 3 & 4 of the main report, show a 3.2% relative increase in any receipt of preventive procedures for PCPCH practices, and reductions in any receipt of specialty office visits or pharmacy benefits of 6.8% and 5.1%, respectively.

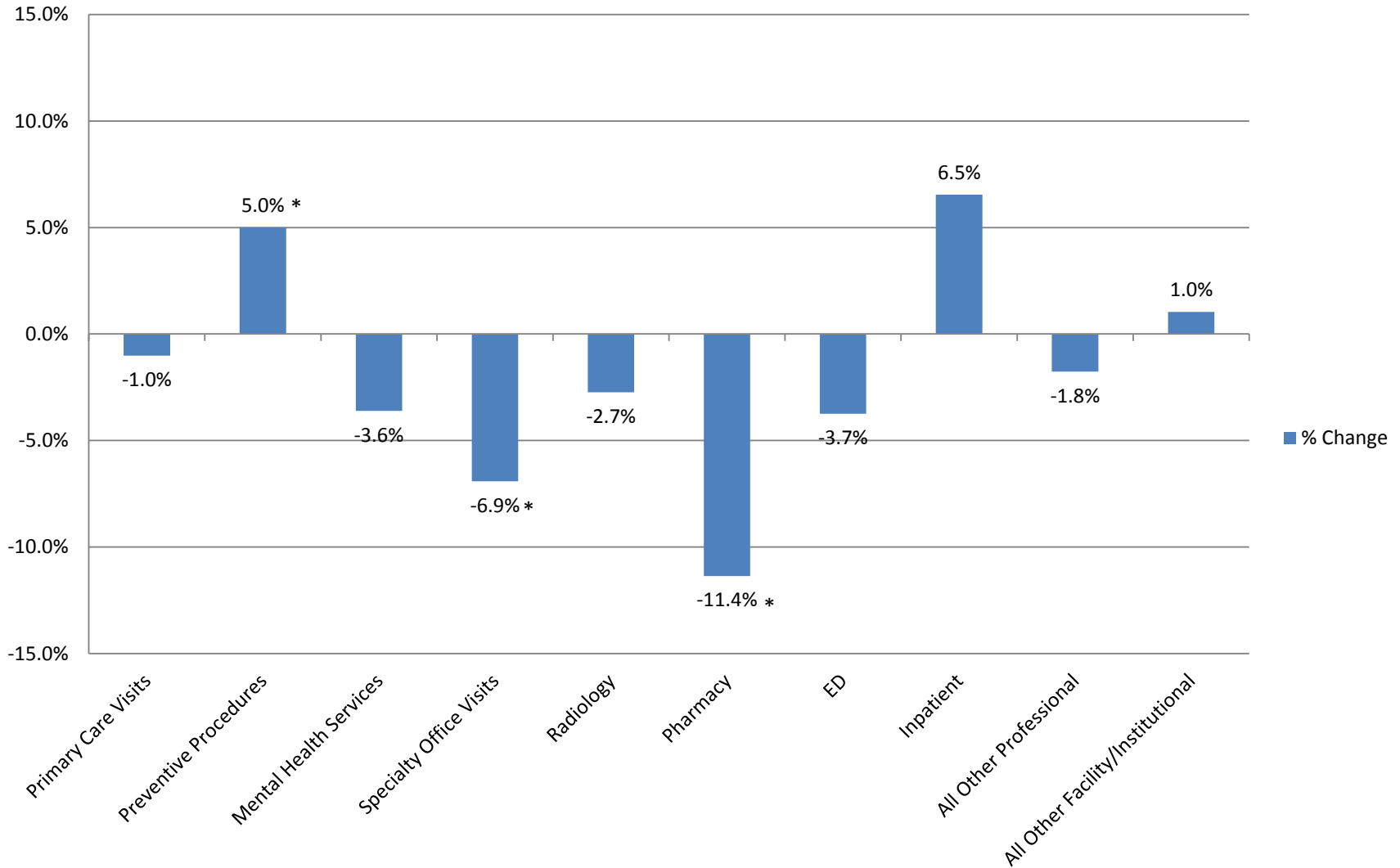
CONCLUSIONS

The intent of this study was to identify whether and to what extent service use patterns and expenditures changed for patients served in PCPCHs compared to non-PCPCH practices. The study indicates that preventive procedures were increased and specialty care visits decreased in PCPCH practices relative to non-PCPCH practices. These findings are consistent with the expectations that PCPCHs should emphasize primary care utilization over specialty care where feasible.

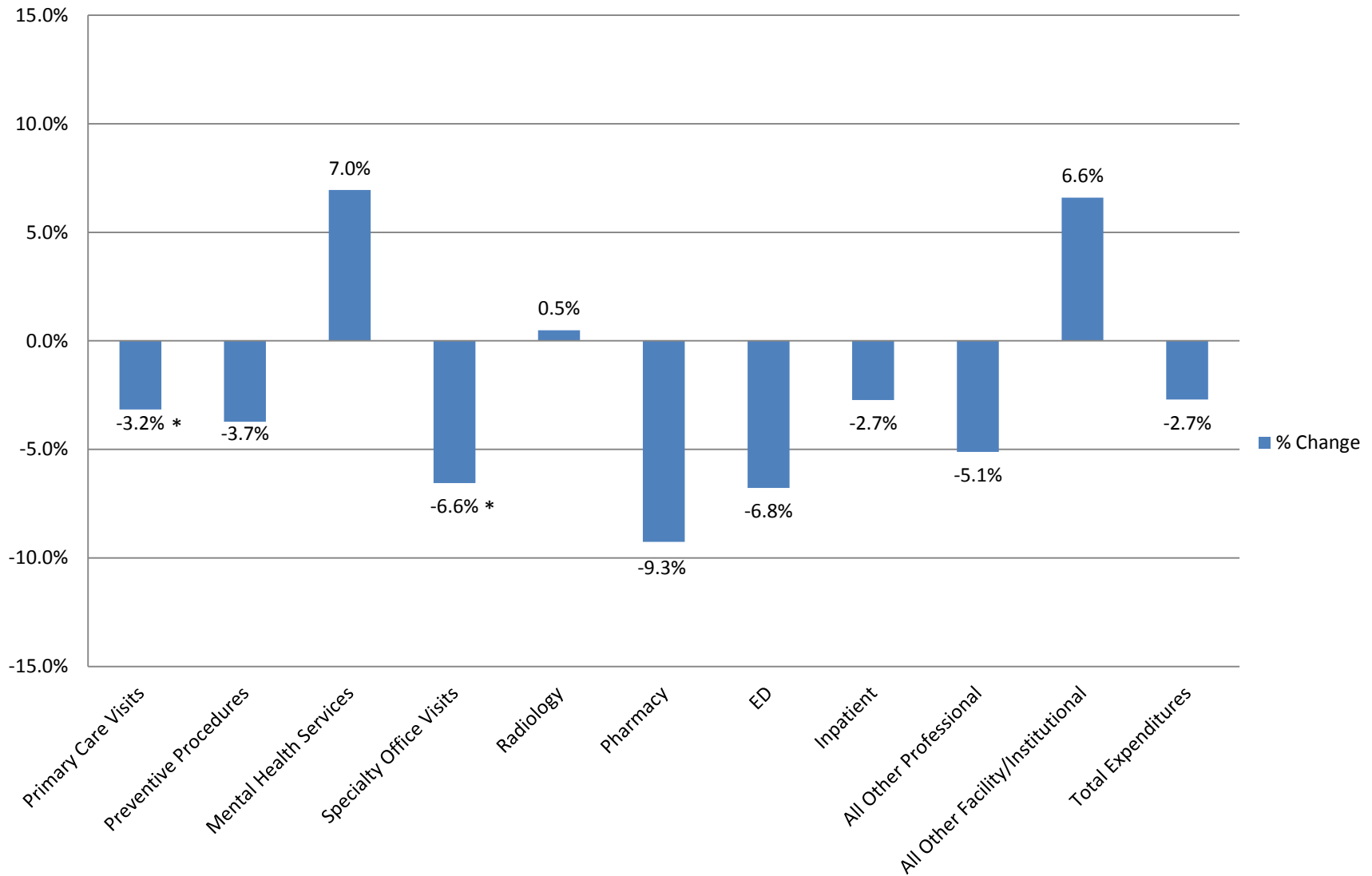
Pharmacy utilization also decreased, which is not clearly in-line with expectations for PCPCH practice. If the reduction in use reflected more prudent prescribing or quicker resolution of conditions, it may reflect positively on PCPCH practice patterns. If it reflects lower adherence to necessary prescriptions, it could reflect problems in receipt or follow through of care. Other important outcomes, such as reduced ED and inpatient use or reduced overall expenditures, while generally trending in the expected direction were not evident statistically.

Overall, the study results suggest some potentially positive impacts of PCPCH designation in increased preventive procedures and reduced specialty care visits. These results reflect service use that is closer to the locus of PCPCH care and thus would conform with general expectations for short term change. Other broader outcomes, such as overall expenditure reduction, if evident at all, may take more time to appear.

**Figure 1: PCPCH % Utilization Change vs. Non-PCPCH Primary Care Sites
(* = p<.05)**



**Figure 2: PCPCH % Expenditure Change vs. Non-PCPCH Primary Care Sites
(* = p<.05)**



PCPCH Evaluation

Quantitative Assessment of Cost & Efficiency

The following report provides the final study design details and results for the PCPCH quantitative assessment of cost and efficiency. This arm of the initial PCPCH evaluation was designed to assess the effects of PCPCH designation on the service utilization patterns and expenditures among early adopters of the PCPCH model in Oregon.

STUDY DESIGN

The intent of the PCPCH quantitative assessment of cost and efficiency is to assess the impact of PCPCH designated practices on service utilization and expenditures. The study design is a matched cohort comparison of service utilization and expenditures for individuals attributable to selected PCPCH practice sites one year prior and following PCPCH recognition in relation to individuals attributable to non-PCPCH primary care practices over the same time periods. This design employs “difference-in-difference” to assess the net of impact of PCPCHs by comparing pre-post expenditure and utilization changes in PCPCH sites to those found in non-PCPCH sites. The difference in these pre-post changes is the estimated net effect of PCPCH designation on patient utilization and expenditure.

DATA

Three main data sources were used in the study. The service utilization and expenditure data are derived from the APAC medical and pharmacy claims for calendar years 2010-2012. PCPCH sites were identified from a list of PCPCH designated providers from initial program implementation in October 2011 through CY 2012. This list includes a variety of practice identifying information including primary National Provider Identifiers (NPIs). PCPCH practice NPIs were checked against the CMS NEPPES registry to correct or augment NPI data for the PCPCH sites. The APAC provider file was used to crosswalk PCPCH NPIs with APAC billing ids and to identify non-PCPCH primary care providers through provider taxonomy codes in that file.

STUDY POPULATION

PCPCH Practice Cohort and Study Period

In order to assure that one year of pre- and post- PCPCH recognition data was available, PCPCH practice sites in this initial quantitative assessment were limited to those with recognition dates prior to January 1, 2012. This encompasses 137 of the 205 PCPCH practice sites analyzed in the other PCPCH evaluation arms. These sites have recognition dates that are either at the beginning of October 2011 or at the end of December 2011. Given the three month span of recognition dates, pre- and post-PCPCH study years were defined as October 1, 2010 through September 30, 2011 and calendar year 2012, respectively.

Identifying PCPCH and non-PCPCH Providers

National provider identification numbers (NPIs) have been identified for PCPCH practices in the study cohort, as well as PCPCH practice sites recognized during CY 2012. These NPIs are matched to records in the APAC provider file to identify the encrypted billing and attending provider ids for these practices

used in the APAC claims data. Claims for services provided as part of a practice or clinic at times use the individual practitioners NPI, as opposed to the organizational NPI (e.g. clinic). To capture and assign these claims, a provider crosswalk key in the APAC provider file will be used to identify any additional encrypted billing/attending ids that are associated with the initial PCPCH NPIs.

Based on matching of PCPCH billing or attending provider ids claims are assigned to one of three groups: 1) PCPCH cohort claims; 2) non-cohort PCPCH (recognized during CY 2012) claims, and; 3) claims for non-PCPCH providers. From each of these three claims groups, primary care claims are separately identified. A primary care claim is defined as a claim with provider taxonomy code reflecting a primary care practitioner and a place of service code reflecting an office or clinic visit.

Attribution of Individuals to PCPCH vs. non-PCPCH Primary Care Status

Individual primary care attribution in a study year is based on the number of primary care visits identified for each individual within the three provider groups noted above. Individuals are attributed to one of the three provider groups in a study year if at least a plurality of their primary care visits came from one group. Attribution into each group is identified at three levels: 1) 100% of primary care visits came from one group; 2) a majority of visits came from one group; or, 3) a plurality of visits came from one group. Individuals with equal numbers of visits across two or more groups (ties) are not attributed.

The attribution process begins by isolating all office or clinic based professional claims (based on place of service) with non-procedure based procedure codes (CPTs 99201 to 99499 or HCPCS G0402,G0438-439). These claims are identified as primary care visits if: 1) the attending provider is classified as a primary care practitioner based their provider taxonomy code; and, 2) the billing provider is a PCPCH or the billing provider is non-PCPCH and at least 50% of their office/clinic based non-procedure based claims are by primary care attending providers. For a small proportion of claims, the attending provider is listed as a practice or facility (e.g. clinic) and not an individual provider. These claims are coded as primary care visits if the facility meets the criteria in 2) above. Primary care visits are summed by individual and provider group within a study year. Attribution, as described above, is assigned based on these summary primary care visit amounts.

Developing the Final Analytic Data Set

To develop the final analytic study sample, all individuals with 100% attribution to PCPCH or non-PCPCH primary care in both the pre- and post- periods were identified first. Propensity score matching was then used to identify PCPCH and non-PCPCH cohorts equivalent on observed characteristics. Matching characteristics included age, gender, insurance type, prospective risk category, and zip code of residence. The matching process yielded PCPCH and non-PCPCH cohorts of 24,741 and 24,850, respectively. The final analytic dataset was constructed by matching the cohort individuals' APAC identifying code (Personkey) with claims data from the pre- and post- periods. These claims were coded and summed up to one record per study subject per study period, following the measurement criteria below.

USE AND EXPENDITURE MEASURES

Twelve utilization measures and one total expenditure measure were used in the study. All utilization measures were based on Milliman’s Health Cost Groups (HCGs) provided in the APAC data set. The twelve utilization measures included: primary care general office visits, primary care preventive office visits, total primary care visits (sum of general and preventive), preventive procedures, specialty office visits, behavioral health visits, radiology procedures, pharmacy claims, emergency department visits (without inpatient admission), inpatient stays, all other professional claims, and all other facility/institutional claims. Each utilization measure is estimated on a per study subject basis, or the average of visits, procedures or claims across study subjects regardless of whether they used the service or not. Total expenditures are the sum of insurance and individual (out of pocket) payments across all claims attributable to an individual.

STATISTICAL ANALYSIS

All study results were estimated using STATA 12. Estimates for the utilization measures were generated using the two-part model (TPM) procedure to accommodate zero values for some subjects across the specific utilization measures. Generalized linear model (GLM) regression was used to estimate total expenditures, as no subjects had zero expenditure. STATA’s margin command was used to report estimates for each cohort (PCPCH vs. non-PCPCH) and study time period with statistical significance of differences across these estimates generated through linear combinations of the base marginal

Table 1: PCPCH vs. Non-PCPCH Attributed Population Characteristics

Characteristics	PCPCH	Non-PCPCH
All Attributed Patients	152,641	873,287
100% Attributed Patients	136,732	845,914
% Total	89.6%	96.9%
Age (Mean)	23.5	40.0 *
Gender (% Female)	55.2%	55.8% *
Risk Category (Mean)	8.3	9.6 *
Insurance Type		
OHP (Medicaid)	74.6%	13.0% *
CHIP	8.9%	1.4%
Disabled	8.0%	1.5%
Dual Eligible	2.0%	0.7%
Low Income	45.6%	7.6%
Restricted Benefit	9.3%	1.6%
Dual Eligible Special Needs	0.9%	0.1%
Medicare	1.8%	11.3%
Private Insurance	15.2%	52.6%
Commercial Self-Insured	7.1%	22.2%
Other	1.3%	0.8%
* = p<.01		

estimates. Absolute and percentage change differences were estimated and evaluated for statistical significance to provide different measurement perspectives.

RESULTS

Table 1 above presents the total population of PCPCH and non-PCPCH attributed individuals in the pre-period. Nearly 90% of the PCPCH attributed individuals in the pre-period had 100% of their primary care visits from PCPCH sites, while almost 97% of non-PCPCH individuals were found to have 100% attribution. While this indicates that attribution by group (PCPCH vs. non-PCPCH) is distinct, it should be noted that individuals within a group may have multiple providers within the group. Thus, individual provider level attribution is likely to be much less distinct. The PCPCH population is notably much younger, slightly less female, with somewhat lower average prospective risk level, and much more oriented towards Medicaid insured individuals than the non-PCPCH population. This would suggest that the early adopters of the PCPCH model, which is the focus of this study, do not represent typical primary care practices in Oregon.

Table 2 below presents the characteristics for the study sample. Of individuals identified with 100% attribution in the pre-period, approximately 50% of the PCPCH subjects and 57% of the non-PCPCH

Characteristics	PCPCH	Non-PCPCH
All Attributed Patients	152,641	873,287
100% Attributed Patients	136,732	845,914
100% Attribution Pre/Post	67,785	479,573
% Total	49.6%	56.7%
Study Sample	24,741	24,850
% of Total Patients	18.1%	2.9%
Age (Mean)	27.5	27.3
Gender (% Female)	56.9%	57.3%
Risk Category (Mean)	9.4	9.4
Insurance Type		
OHP (Medicaid)	56.0%	56.0%
CHIP	3.8%	3.7%
Disabled	7.4%	7.4%
Dual Eligible	1.7%	1.7%
Low Income	35.3%	35.4%
Restricted Benefit	7.2%	7.2%
Dual Eligible Special Needs	0.5%	0.6%
Medicare	3.2%	3.4%
Private Insurance	25.0%	25.1%
Commercial Self-Insured	15.2%	14.9%
Other	0.6%	0.6%
* = p<.01		

subjects also had 100% attribution in the same group during the post-period. The matched study samples of 24,741 (PCPCH) and 24,850 (non-PCPCH) are derived from the 100% pre- and post-attributed population, representing approximately 18% and 3% of their respective total populations. A large factor in the reduction of the sample size relative to the population was from matching on zip code. After matching the study sample are statistically equivalent on the matching variables and reflect a sample similar to the PCPCH population but slightly older, more female, and higher risk, but somewhat less dominated by Medicaid insureds.

Table 3: Summary Net Effect of PCPCHs (Difference-in-Difference)

Service Type	Use	Visits (Proc.) / User	\$ / User	Visits (Proc.) /Person	\$ /Person
Primary Care Office Visits					
General Visits	-1.2% *	0.08	-\$5.38	0.04	-\$7.07
Preventive Visits	0.2%	-0.03	\$0.13	-0.01	\$0.38
Total	0.0%	0.03	-\$6.69	0.03	-\$6.69
Preventive Procedures	1.9% *	0.09	-\$13.84 *	0.11 *	-\$6.10
Mental Health Services	-0.2%	-0.21	\$194.35	-0.05	\$12.20
Specialty Office Visits	-2.6% *	0.00	-\$0.91	-0.08 *	-\$7.70 *
Radiology	-1.1%	-0.01	\$18.93	-0.04	\$3.01
Pharmacy	-3.0% *	-1.82 *	\$53.95	-2.06 *	-\$79.93
ED	-0.6%	-0.03	\$48.21	-0.02	-\$15.62
Inpatient	-0.1%	0.13	-\$630.29	0.01	-\$3.53
All Other Professional	-0.9%	-0.11	-\$47.18	-0.21	-\$46.95
All Other Facility/Institutional	-0.3%	0.23	\$157.68	0.04	\$42.11
Total Expenditures					-\$110.88

* = p<.05

Table 3 above presents the summary net effects of PCPCH designation on patterns of use and expenditure. These figures represent the estimated difference in the pre- to post- change between the PCPCH and non-PCPCH study samples or “difference-in-difference”. Three areas of service use and expense stand out in terms of statistical significance: primary care procedures, specialty care visits, and pharmacy claims. The likelihood of having a primary care procedure increased by 1.9 percentage points for the PCPCH subjects relative to the non-PCPCH subjects from the pre- to post- study periods, resulting in a relative increase of .11 primary care procedures per person. Expenditures per person for this service did not increase, as the expenditure per person receiving primary care procedures increased by \$13.84. The likelihood of having a specialty care visit dropped 2.6 percentage points, and without changes in the use or expense per user, per person use fell by .08 visits and expense by \$7.70. The likelihood of having

Table 4: Summary Net % Effect of PCPCHs (Difference-in-Difference)

Service Type	Use	Visits	\$	Visits	\$
		(Proc.) / User	/ User	(Proc.) /Person	/Person
Primary Care Office Visits					
General Visits	-1.4% *	1.1%	-2.5%	-0.3%	-3.8% *
Preventive Visits	0.3%	-1.4%	0.0%	-1.1%	0.3%
Total	0.0%	-1.0%	-3.2% *	-1.0%	-3.2% *
Preventive Procedures	3.2% *	2.4%	-6.8% *	5.0% *	-3.7%
Mental Health Services	-2.0%	-1.5%	8.9%	-3.6%	7.0%
Specialty Office Visits	-6.8% *	-0.1%	-0.3%	-6.9% *	-6.6% *
Radiology	-2.7%	-0.1%	3.2%	-2.7%	0.5%
Pharmacy	-5.1% *	-6.1% *	3.8%	-11.4% *	-9.3%
ED	-2.6%	-1.5%	4.7%	-3.7%	-6.8%
Inpatient	0.8%	10.1%	-12.2%	6.5%	-2.7%
All Other Professional	-1.1%	-0.7%	-4.1%	-1.8%	-5.1%
All Other Facility/Institutional	-0.8%	2.1%	9.3%	1.0%	6.6%
Total Expenditures					-2.7%

* = p<.05

a pharmacy claim dropped by 3 percentage points, the number of claims per pharmacy user dropped by 1.82, resulting in claims per person dropping by 2.06.

Table 4 above presents net effect (difference-in difference) results in terms of relative rates of change. These estimates are the difference in the percentage rates of change from pre- to post- between the PCPCH and non-PCPCH groups, effectively adjusting the absolute magnitude of change as reported in Table 3 to take into account the initial levels of service use or expenditure. The rates of change estimates provide context for assessing the absolute magnitude changes and can be compared across service types. It should be noted that since the method of (comparative) measurement is different there may be cases where rate of change estimates are statistically significant when absolute change estimates are not and vice versa.

The rate of change estimates in Table 4 largely follows the results from Table 3. Use of preventive procedures increases by 3.2%, while cost per user decreases by 6.8% and procedures per person increase by 5%. Specialty care visits drop by 6.8%, driving reductions in visits and expenditures per person of 6.9% and 6.6%, respectively. Pharmacy claims decrease by 5.1% and claims per user decreases by 6.1%, resulting in an 11.4% decrease in pharmacy claims per person. One difference in the rate of change results is within the primary care visit categories. Use of general primary care visits drops by 1.4% and expenditure per person by 3.8%. For total primary care visits there is no change in use, as all subjects have at least one primary care visit, but expenditures per user and expenditures per person both drop by 3.2%.

While the use of subject matching equates the PCPCH and non-PCPCH subjects on observable individual characteristics, it does not guarantee that initial levels of service use or expenditures are identical. Differences in initial services levels may reflect unobserved subject characteristics, but also differences in the practice patterns of practices that became PCPCHs compared to those that did not. Tables 5-9 in Appendix A provide the underlying results that are summarized in Tables 3 and 4 above. These include use and expenditure averages for PCPCH and non-PCPCH groups in the pre- and post- periods, and absolute and percentage differences across groups at each study period and over time within groups. Initial differences across groups and within groups change over time may be important elements in assessing overall meaning of the difference in difference results. Findings in these dimensions for expenditures and visits/procedures per person (Tables 8 and 9) are highlighted below.

In terms of change over time within groups, most of the service categories had declines in visits/procedures per person. These ranged from a few percent to over 25% for preventive visits. The very large declines in inpatient visits (39.5% PCPCH, 46.1% non-PCPCH) is attributable to birth events in the pre-period that do not re-occur in the post-period given that the study uses a cohort design that follows the same individuals over time. The remaining decreases over time may also be due to the cohort design if the selection criteria yielded individuals with higher health needs in the pre period, however, the available risk scores do not indicate such a change.

In terms of initial differences visits/procedures per person, the PCPCH group had 17.1% less primary care office visits, 7.0% higher preventive procedures, 18.0% higher specialty visits, 10.3% higher

pharmacy claims, and 6.4% higher ED visits. These were largely mirrored in expenditures per person with 17.7% lower expenditures for primary care office visits, 15.8% higher expenditures for preventive procedures, 19.5% higher expenditures for specialty visits, and 8.9% higher pharmacy expenditures. The only difference was for ED expenditures which were only 1.6% higher but not statistically significant.

LIMITATIONS

There are a number of potential limitations inherent in the study design that should be considered. First, by focusing on a fixed cohort of individuals over time that had to be receiving primary care in both study periods, the study design does not provide any information on individual or population access to primary care services. The strength of the design in this regard is in looking at primary care practice patterns, given some primary care use, and their relationship to other non-primary care service patterns. Second, by following the same individuals over time, the results may reflect practice patterns that existed in PCPCH sites before PCPCH designation and not changes due to PCPCH designation.

Two additional limitations come from the timing of the study. The patient population in the initial PCPCH sites was found to be significantly different than in the non-PCPCH sites. Thus, the results only reflect this younger, more Medicaid covered population. Last, the one year follow up period may be insufficient to fully capture the effects of any practice changes that occur due to PCPCH designation.

CONCLUSIONS

The intent of this study was to identify whether and to what extent service use patterns and expenditures changed for patients served in PCPCHs compared to non-PCPCH practices. The study indicates that preventive procedures were increased and specialty care visits decreased in PCPCH practices relative to non-PCPCH practices. These findings are consistent with the expectations that PCPCHs should emphasize primary care utilization over specialty care where feasible.

Pharmacy utilization also decreased, which is not clearly in-line with expectations for PCPCH practice. If the reduction in use reflected more prudent prescribing or quicker resolution of conditions, it may reflect positively on PCPCH practice patterns. If it reflects lower adherence to necessary prescriptions, it could reflect problems in receipt or follow through of care. Other important outcomes, such as reduced ED and inpatient use or reduced overall expenditures, while generally trending in the expected direction were not evident statistically.

Overall, the study results suggest some potentially positive impacts of PCPCH designation in increased preventive procedures and reduced specialty care visits. These results reflect service use that is closer to the locus of PCPCH care and thus would conform with general expectations for short term change. Other broader outcomes, such as overall expenditure reduction, if evident at all, may take more time to appear.

Appendix A:
Detailed Difference-in-Difference Results

Following are Tables 5-9 which provide the detailed estimates underlying tables 3 and 4 in the main text. Each table reflects results within one of the five measurement domains: probability of use, visits/procedures per user, expenditure per user, visits/procedures per person, and expenditure per person. Within each service type the pre- and post-period estimates for the PCPCH and non-PCPCH study samples are presented, along with absolute and percentage differences. The difference-in-differences, reported in Tables 3 and 4 are highlighted in bold.

Table 5: Probability of Use¹

Service Type		Pre	Post	Diff.	Diff. %
Primary Care Office Visits					
General Visits	PCPCH	0.87	0.84	-0.02 *	-2.9% *
	Non-PCPCH	0.89	0.87	-0.01 *	-1.4% *
	Diff.	-0.02 *	-0.03 *	-0.01 *	
	Diff. %	-2.0% *	-3.5% *		-1.4% *
Preventive Visits	PCPCH	0.48	0.46	-0.02 *	-5.1% *
	Non-PCPCH	0.48	0.46	-0.03 *	-5.4% *
	Diff.	0.00	0.00	0.00	
	Diff. %	-0.1%	0.3%		0.3%
Total	PCPCH	1.00	1.00	0.00	0.0%
	Non-PCPCH	1.00	1.00	0.00	0.0%
	Diff.	0.00	0.00	0.00	
	Diff. %	0.0%	0.0%		0.0%
Preventive Procedures	PCPCH	0.65	0.64	-0.01	-1.3%
	Non-PCPCH	0.62	0.60	-0.03 *	-4.4% *
	Diff.	0.02 *	0.04 *	0.02 *	
	Diff. %	3.9% *	7.3% *		3.2% *
Mental Health Services	PCPCH	0.079	0.081	0.001	1.6%
	Non-PCPCH	0.082	0.085	0.003	3.7%
	Diff.	-0.003	-0.005	-0.002	
	Diff. %	-3.4%	-5.3%		-2.0%
Specialty Office Visits	PCPCH	0.38	0.36	-0.03 *	-6.9% *
	Non-PCPCH	0.32	0.32	0.00	-0.1%
	Diff.	0.06 *	0.03 *	-0.03 *	
	Diff. %	18.7% *	10.7% *		-6.8% *
Radiology	PCPCH	0.40	0.38	-0.02 *	-5.2% *
	Non-PCPCH	0.40	0.39	-0.01 *	-2.5% *
	Diff.	0.00	-0.01 *	-0.01	
	Diff. %	-0.5%	-3.3% *		-2.7%
Pharmacy	PCPCH	0.66	0.68	0.03 *	4.0% *
	Non-PCPCH	0.63	0.68	0.06 *	9.1% *
	Diff.	0.03 *	0.00	-0.03 *	
	Diff. %	5.2% *	0.3%		-5.1% *
ED	PCPCH	0.22	0.19	-0.03 *	-12.7% *
	Non-PCPCH	0.22	0.20	-0.02 *	-10.1% *
	Diff.	0.00	0.00	-0.01	
	Diff. %	0.8%	-2.2%		-2.6%
Inpatient	PCPCH	0.08	0.05	-0.04 *	-43.5% *
	Non-PCPCH	0.08	0.05	-0.04 *	-44.4% *
	Diff.	0.00	0.00	0.00	
	Diff. %	4.2%	5.8%		0.8%
All Other Professional	PCPCH	0.77	0.75	-0.02 *	-3.2% *
	Non-PCPCH	0.77	0.75	-0.02 *	-2.1% *
	Diff.	0.01	0.00	-0.01	
	Diff. %	0.8%	-0.4%		-1.1%
All Other Facility/Institutional	PCPCH	0.41	0.37	-0.04 *	-10.3% *
	Non-PCPCH	0.41	0.37	-0.04 *	-9.6% *
	Diff.	0.00	0.00	0.00	
	Diff. %	0.3%	-0.6%		-0.8%

¹ Highlighted results are the "difference-in-difference" or net PCPCH effect.

* = p<.05

Table 6: Visits/Procedures Per User¹

Service Type		Pre	Post	Diff.	Diff. %
Primary Care Office Visits					
General Visits	PCPCH	3.3	3.1	-0.2 *	-5.6% *
	Non-PCPCH	3.8	3.6	-0.3 *	-6.7% *
	Diff.	-0.6 *	-0.5 *	0.08	
	Diff. %	-15.3% *	-14.3% *		1.1%
Preventive Visits	PCPCH	1.6	1.2	-0.4 *	-23.2% *
	Non-PCPCH	1.5	1.2	-0.3 *	-21.8% *
	Diff.	0.0	0.0	-0.03	
	Diff. %	1.4%	-0.5%		-1.4%
Total	PCPCH	3.6	3.1	-0.4 *	-12.3% *
	Non-PCPCH	4.2	3.7	-0.5 *	-11.3% *
	Diff.	-0.6 *	-0.5 *	0.03	
	Diff. %	-13.8% *	-14.7% *		-1.0%
Preventive Procedures	PCPCH	4.6	3.9	-0.6 *	-14.0%
	Non-PCPCH	4.4	3.7	-0.7 *	-16.4%
	Diff.	0.1 *	0.2 *	0.09	
	Diff. %	3.0%	5.9%		2.4%
Mental Health Services	PCPCH	17.5	17.8	0.3	1.8%
	Non-PCPCH	16.1	16.6	0.5	3.3%
	Diff.	1.5	1.2	-0.21	
	Diff. %	9.1%	7.5%		-1.5%
Specialty Office Visits	PCPCH	3.0	3.0	0.0	-0.7%
	Non-PCPCH	3.1	3.0	0.0	-0.6%
	Diff.	0.0	0.0	0.00	
	Diff. %	-0.6%	-0.7%		-0.1%
Radiology	PCPCH	4.1	4.0	-0.1	-2.6%
	Non-PCPCH	4.0	3.9	-0.1	-2.5%
	Diff.	0.0	0.0	-0.01	
	Diff. %	0.6%	0.5%		-0.1%
Pharmacy	PCPCH	29.4	27.1	-2.2 *	-7.6% *
	Non-PCPCH	28.0	27.6	-0.4	-1.5%
	Diff.	1.4 *	-0.4	-1.8 *	
	Diff. %	4.9% *	-1.6%		-6.1% *
ED	PCPCH	1.8	1.7	-0.1 *	-7.7% *
	Non-PCPCH	1.7	1.6	-0.1 *	-6.2% *
	Diff.	0.1 *	0.1 *	-0.03	
	Diff. %	5.6% *	3.9% *		-1.5%
Inpatient	PCPCH	1.23	1.31	0.09	7.0%
	Non-PCPCH	1.32	1.28	-0.04	-3.1%
	Diff.	-0.10 *	0.03	0.13	
	Diff. %	-7.4% *	2.3%		10.1%
All Other Professional	PCPCH	15.3	15.4	0.1	0.6%
	Non-PCPCH	15.7	15.9	0.2	1.3%
	Diff.	-0.5	-0.6	-0.1	
	Diff. %	-3.1%	-3.7%		-0.7%
All Other Facility/Institutional	PCPCH	10.7	11.3	0.6	5.2%
	Non-PCPCH	10.5	10.8	0.3	3.1%
	Diff.	0.2	0.5	0.2	
	Diff. %	2.2%	4.2%		2.1%

¹ Highlighted results are the "difference-in-difference" or net PCPCH effect.

* = p<.05

Table 7: Expenditures Per User¹

Service Type		Pre	Post	Diff.	Diff. %
Primary Care Office Visits					
General Visits	PCPCH	\$288	\$272	-\$16 *	-5.6% *
	Non-PCPCH	\$343	\$332	-\$11 *	-3.2% *
	Diff.	-\$55 *	-\$60 *	-\$5	
	Diff. %	-16.0% *	-18.2% *		-2.5%
Preventive Visits	PCPCH	\$178	\$157	-\$21 *	-11.7%
	Non-PCPCH	\$180	\$159	-\$21 *	-11.7%
	Diff.	-\$2	-\$2	\$0	
	Diff. %	-1.0%	-1.1%		0.0%
Total	PCPCH	\$336	\$301	-\$35 *	-10.4% *
	Non-PCPCH	\$391	\$363	-\$28 *	-7.2% *
	Diff.	-\$55 *	-\$62 *	-\$7	
	Diff. %	-14.0% *	-17.0% *		-3.2% *
Preventive Procedures	PCPCH	\$187	\$164	-\$23 *	-12.3% *
	Non-PCPCH	\$168	\$158	-\$9 *	-5.5% *
	Diff.	\$19 *	\$5	-\$14 *	
	Diff. %	11.5% *	3.4%		-6.8% *
Mental Health Services	PCPCH	\$2,198	\$2,280	\$82	3.7%
	Non-PCPCH	\$2,174	\$2,062	-\$112	-5.2%
	Diff.	\$24	\$219	\$194	
	Diff. %	1.1%	10.6%		8.9%
Specialty Office Visits	PCPCH	\$297	\$294	-\$3	-1.1%
	Non-PCPCH	\$299	\$297	-\$2	-0.7%
	Diff.	-\$2	-\$3	-\$1	
	Diff. %	-0.5%	-0.9%		-0.3%
Radiology	PCPCH	\$469	\$427	-\$42	-9.0%
	Non-PCPCH	\$503	\$442	-\$61 *	-12.1% *
	Diff.	-\$34	-\$15	\$19	
	Diff. %	-6.8%	-3.4%		3.2%
Pharmacy	PCPCH	\$1,461	\$1,539	\$79	5.4%
	Non-PCPCH	\$1,513	\$1,538	\$25	1.6%
	Diff.	-\$53	\$1	\$54	
	Diff. %	-3.5%	0.1%		3.8%
ED	PCPCH	\$1,005	\$986	-\$19	-1.9%
	Non-PCPCH	\$1,013	\$946	-\$67 *	-6.6%
	Diff.	-\$8	\$40	\$48	
	Diff. %	-0.8%	4.2%		4.7%
Inpatient	PCPCH	\$10,608	\$15,560	\$4,953 *	46.7% *
	Non-PCPCH	\$9,482	\$15,064	\$5,583 *	58.9% *
	Diff.	\$1,126	\$496	-\$630	
	Diff. %	11.9%	3.3%		-12.2%
All Other Professional	PCPCH	\$1,244	\$1,266	\$22	1.8%
	Non-PCPCH	\$1,179	\$1,248	\$69	5.9%
	Diff.	\$65	\$18	-\$47	
	Diff. %	5.5%	1.4%		-4.1%
All Other Facility/Institutional	PCPCH	\$1,635	\$1,868	\$233 *	14.2% *
	Non-PCPCH	\$1,537	\$1,612	\$75	4.9%
	Diff.	\$99	\$256 *	\$158	
	Diff. %	6.4%	15.9% *		9.3%

1 Highlighted results are the "difference-in-difference" or net PCPCH effect.

* = p<.05

Table 8: Visits/Procedures per Person¹

Service Type		Pre	Post	Diff.	Diff. %
Primary Care Office Visits					
General Visits	PCPCH	2.8	2.6	-0.2 *	-8.3% *
	Non-PCPCH	3.4	3.1	-0.3 *	-8.0% *
	Diff.	-0.6 *	-0.5 *	0.04	
	Diff. %	-17.1% *	-17.3% *		-0.3%
Preventive Visits	PCPCH	0.8	0.6	-0.2 *	-27.1% *
	Non-PCPCH	0.7	0.6	-0.2 *	-26.1% *
	Diff.	0.0	0.0	-0.01	
	Diff. %	1.3%	-0.2%		-1.1%
Total	PCPCH	3.6	3.1	-0.4 *	-12.3% *
	Non-PCPCH	4.2	3.7	-0.5 *	-11.3% *
	Diff.	-0.6 *	-0.5 *	0.03	
	Diff. %	-13.8% *	-14.7% *		-1.0%
Preventive Procedures	PCPCH	3.0	2.5	-0.4 *	-15.1% *
	Non-PCPCH	2.8	2.2	-0.6 *	-20.1% *
	Diff.	0.2 *	0.3 *	0.11 *	
	Diff. %	7.0%	13.7%		5.0% *
Mental Health Services	PCPCH	1.4	1.4	0.0	3.4%
	Non-PCPCH	1.3	1.4	0.1	7.1%
	Diff.	0.1	0.0	-0.05	
	Diff. %	5.4%	1.8%		-3.6%
Specialty Office Visits	PCPCH	1.2	1.1	-0.1 *	-7.5% *
	Non-PCPCH	1.0	1.0	0.0	-0.6%
	Diff.	0.2 *	0.1 *	-0.08 *	
	Diff. %	18.0% *	9.8% *		-6.9% *
Radiology	PCPCH	1.6	1.5	-0.1 *	-7.7% *
	Non-PCPCH	1.6	1.5	-0.1 *	-5.0% *
	Diff.	0.0	0.0	-0.04	
	Diff. %	0.1%	-2.8%		-2.7%
Pharmacy	PCPCH	19.31	18.56	-0.75	-3.9%
	Non-PCPCH	17.50	18.81	1.31 *	7.5% *
	Diff.	1.81 *	-0.25	-2.06 *	
	Diff. %	10.3% *	-1.3%		-11.4% *
ED	PCPCH	0.41	0.33	-0.08 *	-19.4% *
	Non-PCPCH	0.38	0.32	-0.06 *	-15.7% *
	Diff.	0.02 *	0.01	-0.02	
	Diff. %	6.4% *	1.7%		-3.7%
Inpatient	PCPCH	0.10	0.06	-0.04 *	-39.5%
	Non-PCPCH	0.11	0.06	-0.05 *	-46.1%
	Diff.	0.00	0.00	0.01	
	Diff. %	-3.5%	8.3%		6.5%
All Other Professional	PCPCH	11.77	11.46	-0.31	-2.6%
	Non-PCPCH	12.05	11.95	-0.10	-0.9%
	Diff.	-0.28	-0.48	-0.21	
	Diff. %	-2.3%	-4.1%		-1.8%
All Other Facility/Institutional	PCPCH	4.43	4.18	-0.25	-5.7%
	Non-PCPCH	4.32	4.03	-0.29	-6.7%
	Diff.	0.11	0.14	0.04	
	Diff. %	2.4%	3.6%		1.0%

¹ Highlighted results are the "difference-in-difference" or net PCPCH effect.

* = p<.05

Table 9: Expenditures Per Person ¹							
Service Type		Pre	Post	Diff.		Diff. %	
Primary Care Office Visits							
General Visits	PCPCH	\$250	\$229	-\$21 *		-8.4%	*
	Non-PCPCH	\$304	\$290	-\$14 *		-4.5%	*
	Diff.	-\$54 *	-\$61 *	-\$7			
	Diff. %	-17.7% *	-21.0% *			-3.8%	*
Preventive Visits	PCPCH	\$86	\$72	-\$14 *		-16.2%	*
	Non-PCPCH	\$87	\$73	-\$14 *		-16.5%	*
	Diff.	-\$1	-\$1	\$0			
	Diff. %	-1.1%	-0.8%			0.3%	
Total	PCPCH	\$336	\$301	-\$35 *		-10.4%	*
	Non-PCPCH	\$391	\$363	-\$28 *		-7.2%	*
	Diff.	-\$55 *	-\$62 *	-\$7			
	Diff. %	-14.0% *	-17.0% *			-3.2%	*
Preventive Procedures	PCPCH	\$121	\$105	-\$16 *		-13.4%	*
	Non-PCPCH	\$105	\$94	-\$10 *		-9.6%	*
	Diff.	\$16 *	\$10 *	-\$6			
	Diff. %	15.8% *	11.0% *			-3.7%	
Mental Health Services	PCPCH	\$174	\$184	\$9		5.3%	
	Non-PCPCH	\$179	\$176	-\$3		-1.6%	
	Diff.	-\$4	\$8	\$12			
	Diff. %	-2.4%	4.5%			7.0%	
Specialty Office Visits	PCPCH	\$114	\$106	-\$9 *		-7.6%	*
	Non-PCPCH	\$96	\$95	-\$1		-1.1%	
	Diff.	\$19 *	\$11 *	-\$8 *			
	Diff. %	19.5% *	11.6% *			-6.6%	*
Radiology	PCPCH	\$186	\$160	-\$26 *		-13.8%	*
	Non-PCPCH	\$201	\$172	-\$29 *		-14.3%	*
	Diff.	-\$15	-\$12	\$3			
	Diff. %	-7.3%	-6.8%			0.5%	
Pharmacy	PCPCH	\$993	\$1,047	\$54		5.5%	
	Non-PCPCH	\$911	\$1,045	\$134 *		14.7%	*
	Diff.	\$81 *	\$1	-\$80			
	Diff. %	8.9% *	0.1%			-9.3%	
ED	PCPCH	\$225	\$183	-\$42 *		-18.5%	*
	Non-PCPCH	\$221	\$195	-\$26 *		-11.7%	*
	Diff.	\$3	-\$12	-\$16			
	Diff. %	1.6%	-6.2%			-6.8%	
Inpatient	PCPCH	\$584	\$677	\$93		16.0%	
	Non-PCPCH	\$517	\$614	\$97		18.7%	
	Diff.	\$66	\$63	-\$4			
	Diff. %	12.8%	10.2%			-2.7%	
All Other Professional	PCPCH	\$959	\$945	-\$14		-1.5%	
	Non-PCPCH	\$902	\$935	\$33		3.7%	
	Diff.	\$57	\$10	-\$47			
	Diff. %	6.3%	1.0%			-5.1%	
All Other Facility/Institutional	PCPCH	\$672	\$681	\$10		1.5%	
	Non-PCPCH	\$629	\$597	-\$32		-5.1%	
	Diff.	\$42	\$84	\$42			
	Diff. %	6.7%	14.1%			6.6%	
Total Expenditures	PCPCH	\$4,360	\$4,386	\$26		0.6%	
	Non-PCPCH	\$4,148	\$4,285	\$137		3.3%	
	Diff.	\$212	\$101	-\$111			
	Diff. %	5.1%	2.3%			-2.7%	

1 Highlighted results are the "difference-in-difference" or net PCPCH effect.

* = p<.05