

**Supplemental Digital Content for**

**Bending the Cost Curve? Results from a Comprehensive Primary Care Payment Pilot**

**Appendix A. Primary Care Practitioner (PCP) Assignment Algorithms: Massachusetts Health Quality Project (MHQP) vs. Capital District Physicians' Health Plan (CDPHP)**

**Appendix B. Further Results from the Difference-in-Difference Analysis**

**Appendix C. Further Results from the Difference-in-Difference Analysis When Including Risk Scores in the Propensity Score Model**

**Appendix A. Primary Care Practitioner (PCP) Assignment Algorithms: Massachusetts Health Quality Project (MHQP) vs. Capital District Physicians' Health Plan (CDPHP)**

Massachusetts Health Quality Project's (MHQP) Primary Care Practitioner (PCP) Assignment Algorithm

Capital District Physicians' Health Plan's (CDPHP) Primary Care Practitioner (PCP) Assignment Algorithm

Table A-1: Ex Post Assignment of Patients to Primary Care Practitioners (PCP)

## **Massachusetts Health Quality Project's (MHQP) Primary Care Practioner (PCP)**

### **Assignment Algorithm**

We evaluate the patient assignment algorithm used by the Massachusetts Health Quality Project (MHQP), which groups primary-care-related Current Procedural Terminology (CPT) codes into two categories: well visit/physical exams and other Evaluation and Management (E&M) codes. The algorithm initially assigns a member only to a physician with a primary care specialty who has contracted with Capital District Physicians' Health Plan (CDPHP) to serve as their primary care practioner (PCP) only if the member had a well visit/physical exam in the last 18 months that was billed by this physician. If the member had a well visit/physical exam during this time frame with two or more such physicians, the member is assigned to the one with the most recent well visit/physical exam. Remaining members are assigned to the physician, with a non-primary care specialty and a contractual agreement to serve as a PCP, if the member had a well visit/physical exam in the last 18 months that was billed by this physician. If the member has a well visit/physical exam during this time frame with two or more specialists, the algorithm attributes the member's care to the specialist with the most recent well visit/physical exam. In our data there were some physicians whose specialty code could not be identified. In our modification of the MHQP algorithm we next repeat the above steps of the assignment methodology for these physicians. For the members with no well visit/physical exam the algorithm repeats the above steps but replaces well visit/physical exam codes with the remaining E&M codes.

After the initial steps, we allow members to be assigned to physicians who have not contracted with CDPHP to serve as a PCP using the same assignment strategy and codes as described previously. The members who remain unassigned are then attributed to the primary

care physician with whom the member had a visit in the last 18 months, even though none of the visits to that physician were either well visits or E&M codes. The algorithm next attributes remaining unassigned members to a well-defined group of specialists with whom the member had a visit in the last 18 months, even though none of the visits to that physician were either well visits or E&M codes. Finally, members who remain unassigned are attributed to other physicians or facilities they have visited, even if they did not have a well visit or E&M code visit. Only patients making no medical visits during the 18-month period remain unassigned to any provider.

Altogether, the MHQP algorithm assigned 296,457 patients in three years to 2,526 PCPs billing from 1,122 distinct practices located in the four-county study region. Note that the substantially larger number of PCPs and practices from the MHQP algorithm arises because physicians who have not contracted with CDPHP to serve as a PCP are ultimately allowed to be assigned as the patient's PCP, whereas the CDPHP assignment requires that a physician contract with the plan to be a PCP.

### **Capital District Physicians' Health Plan's (CDPHP) Primary Care Practitioner (PCP)**

#### **Assignment Algorithm**

To make base payments to participating PCMH practices and evaluate their performance, Capital District Physicians' Health Plan (CDPHP) developed an algorithm to assign patients to specific primary care practitioners (PCP). The algorithm even assigns those patients who are enrolled in plans (such as preferred provider organizations (PPO)) which do not require patients to choose their PCP. Using 24 months of evaluation and management (E&M) codes, the CDPHP algorithm only assigns members to a physician who has signed a contract with CDPHP that allows him to serve as a PCP; the specialty of the physician is not restricted to primary care. If

the member has at least one E&M code from any physician flagged as a PCP then the member is assigned to that practitioner. In the event that there are E&M codes from more than one practitioner the algorithm assigns the member to the practitioner from whom there are more codes in aggregate. Further, if the member has same number of E&M codes from more than one physician the member is assigned to the physician with whom he has more preventive codes. If there still exists a tie between two or more PCPs, patient assignment goes to the PCP visited most recently.

In the absence of any E&M codes in the last 24 months the member is assigned to the physician who is the member's 'chosen' PCP in the CDPHP records. If no such PCP exists, the algorithm assigns the member to the PCP who bills more dollars. If none of the above holds for a member the algorithm assigns him to the PCP with the most recent date-of-service given that the service is provided in an office setting and not in emergency department or urgent care setting. Altogether, the CDPHP algorithm assigned 265,313 patients in three years to 752 PCPs billing from 324 distinct practices located in the four county study region.

**Table A-1: Ex Post Assignment of Patients to Primary Care Practitioners (PCP)**

	Massachusetts Health Quality Project MHQP Primary Care Practitioner (PCP) Assignment Algorithm	Capital District Physicians' Health Plan (CDPHP) PCP Assignment Algorithm
Claims Used:	18 months	24 months
Codes Used Initially:	Well care visits	Evaluation and Management (E&M) codes including well care visits
Codes Used Subsequently:	Other E&M Other visits	Any other visit to an eligible provider
Assigned to:	Physicians with primary care specialty	Physicians with CDPHP PCP contract
Physician Specialty:	*Other physicians with CDPHP PCP contract	Not restricted to primary care specialty
Also:	All other physicians	Specialists only if CDPHP PCP contract
Tiebreaker #1	Most recent well care visit	Physician with more E&M codes
Tiebreaker #2	Most recent E&M visit	More preventive codes
Tiebreaker #3	Most office visits for any reason	Most recent PCP visited
Tiebreaker #4	Most recent office visit for any reason	Member's 'chosen' PCP
Tiebreaker #5		Most spending on non E&M
Tiebreaker #6		Most recent any other office visit
<i>Result:</i>	<i>2526 PCPs billing from 1122 practices</i>	<i>752 PCPs billing from 324 practices</i>
Notes: *as modified for this paper		

## **Appendix B. Further Results from the Difference-in-Difference Analysis**

Figure B-1. Age Distribution in 2008 Using Massachusetts Health Quality Project (MHQP)

Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit

Table B-1: Summary Statistics for Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit

Table B-2: Summary Statistics for Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed PCP Assignment, and Including Entry and Exit

Table B-3: Summary Statistics for Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit

Table B-4: Basic Difference-in-Difference Regressions Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment

Table B-5: Difference-in-Difference Regressions Using Individual Fixed Effects and Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment

Table B-6: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit

Table B-7: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed PCP Assignment, and Including Entry and Exit

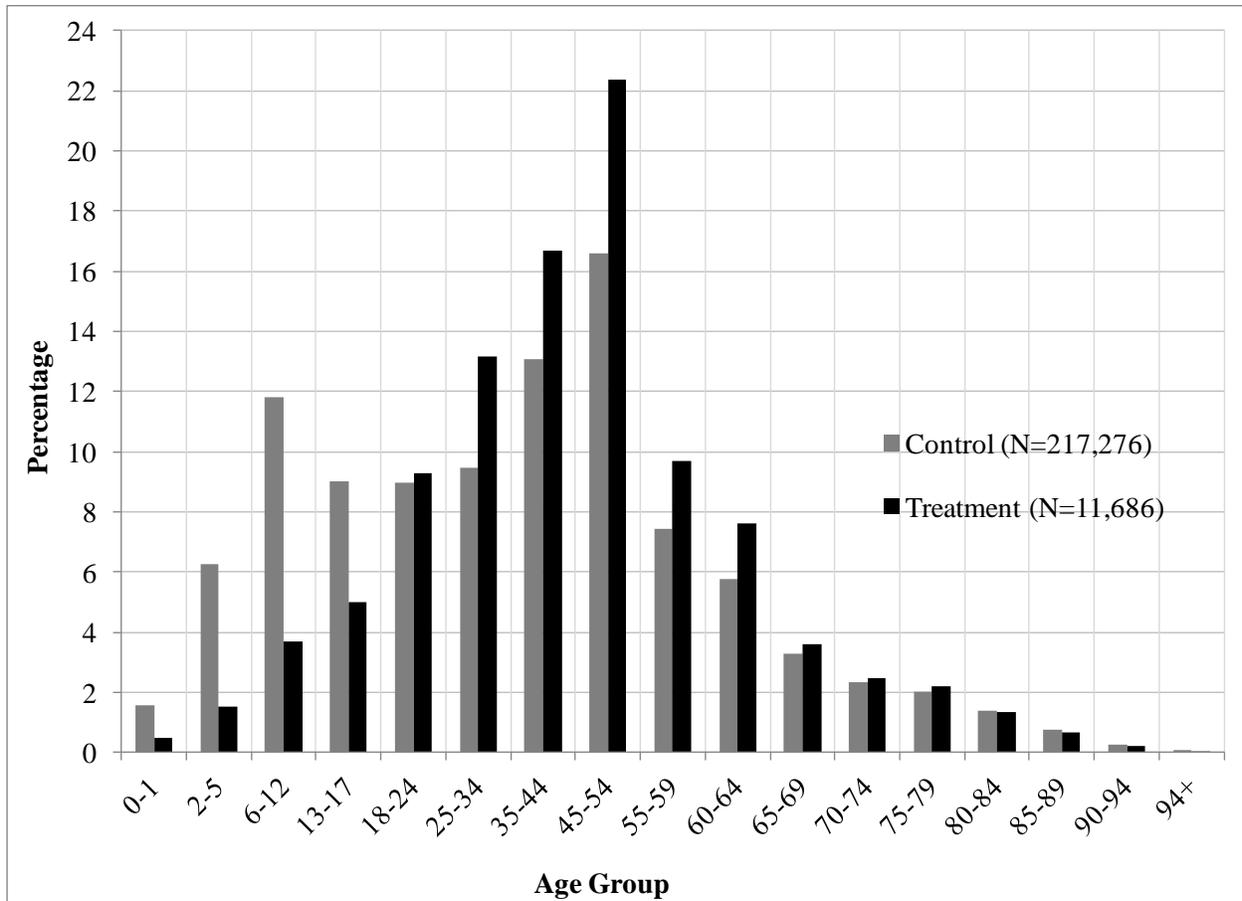
Table B-8: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit

Table B-9: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment, with Fixed 2008 PCP assignment, and Excluding Entry and Exit

Table B-10: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment, with Fixed PCP Assignment, and Including Entry and Exit

Table B-11: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit

**Figure B-1. Age Distribution in 2008 Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit**



**Table B-1: Summary Statistics for Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit**

	2008			2009			2010		
	Treatment	Control: unadjusted	Control: propensity weighted	Treatment	Control: unadjusted	Control: propensity weighted	Treatment	Control: unadjusted	Control: propensity weighted
	<i>Observations:</i>	7,405	129,373	129,373	7,405	129,373	129,373	7,405	129,373
<i>Payer Type</i>									
Medicare (%)	11	11	11	12	12	12	13	12	13
Medicaid (%)	4	10	4	4	10	4	4	10	4
Privately Insured (%)	85	79	85	84	78	84	83	78	83
<i>Plan Type</i>									
Health Maintenance Organization (HMO) (%)	83	83	83	78	79	78	71	75	71
Point Of Service (POS) (%)	5	5	5	2	2	2	2	2	2
Preferred Provider Organization (PPO) (%)	4	4	4	6	6	6	7	6	7
Exclusive Provider Organization (EPO) (%)	9	8	9	13	13	13	21	16	20
<i>Insurance Type</i>									
Administrative Services Only (ASO) (%)	13	13	13	13	13	13	12	13	12
<i>Gender</i>									
Female (%)	57	56	57	57	56	57	57	56	57
<i>Eligibility Months</i>									
Mean	12	12	12	12	12	12	12	12	12
Standard Deviation	46	39	46	47	40	47	48	41	48
Median	0	0	0	0	0	0	0	0	0
<i>Age as of Dec. 31</i>									
Mean	12	12	12	12	12	12	12	12	12
Standard Deviation	18	23	5	18	23	5	18	23	5
Median	48	43	50	49	44	51	50	45	51
<i>Lagged Prospective Risk Score</i>									
Mean	1.64	1.66	1.89	1.78	1.82	2.08	1.91	1.99	2.27
Standard Deviation	7.40	9.07	0.64	8.67	10.28	0.72	9.95	11.25	0.80
Median	1.05	0.90	1.12	1.11	0.98	1.22	1.17	1.06	1.31
<i>Total Medical Spending</i>									
Mean	2991	2821	3183	3228	3180	3610	3560	3524	4040
Standard Deviation	28867	36886	8785	32250	36025	8989	32972	41609	10397
Median	1072	864	1028	1088	955	1139	1134	992	1199
Note: Eligibility months is the number of enrolled months in a plan offered by Capital District Physicians' Health Plan (CDPHP). Physician assignment is based on Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) assignment algorithm.									

**Table B-2: Summary Statistics for Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed PCP Assignment, and Including Entry and Exit**

	2008			2009			2010		
	Treatment	Control: unadjusted	Control: propensity weighted	Treatment	Control: unadjusted	Control: propensity weighted	Treatment	Control: unadjusted	Control: propensity weighted
	<i>Observations:</i>	11,686	217,276	217,276	11,671	222,946	222,946	10,903	217,788
<i>Payer Type</i>									
Medicare (%)	8	8	8	9	8	9	11	9	11
Medicaid (%)	8	18	8	9	20	9	10	23	11
Privately Insured (%)	84	74	83	82	72	82	79	68	79
<i>Plan Type</i>									
Health Maintenance Organization (HMO) (%)	76	79	76	74	77	74	72	77	72
Point Of Service (POS) (%)	10	8	10	2	2	2	2	2	2
Preferred Provider Organization (PPO) (%)	4	4	4	11	9	11	6	6	6
Exclusive Provider Organization (EPO) (%)	10	10	10	13	12	13	20	15	20
<i>Insurance Type</i>									
Administrative Services Only (ASO) (%)	17	14	17	17	14	16	11	10	11
<i>Gender</i>									
Female (%)	55	55	55	56	55	56	56	55	56
<i>Eligibility Months</i>									
Mean	11	11	11	11	11	11	11	11	11
Standard Deviation	43	36	42	43	36	43	44	37	44
Median	2	2	0	2	2	0	2	2	0
<i>Age as of Dec. 31</i>									
Mean	12	12	12	12	12	12	12	12	12
Standard Deviation	19	22	5	19	22	5	19	23	5
Median	45	37	46	45	37	47	46	38	48
<i>Lagged Prospective Risk Score</i>									
Mean	1.54	1.56	1.81	1.63	1.63	1.91	1.76	1.76	2.09
Standard Deviation	7.74	9.51	0.71	8.80	10.05	0.74	9.46	10.51	0.77
Median	0.93	0.78	0.97	0.97	0.80	1.01	1.03	0.86	1.11
<i>Total Medical Spending</i>									
Mean	3022	2895	3356	3211	3161	3670	3421	3337	3932
Standard Deviation	32859	42777	10633	37090	40686	9925	35142	44027	10811
Median	926	744	895	978	837	1003	1026	864	1066
Note: Eligibility months is the number of enrolled months in a plan offered by Capital District Physicians' Health Plan (CDPHP). Physician assignment is based on Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) assignment algorithm.									

**Table B-3: Summary Statistics for Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit**

	2008			2009			2010		
		Control:	Control:		Control:	Control:		Control:	Control:
	Treatment	unadjusted	propensity weighted	Treatment	unadjusted	propensity weighted	Treatment	unadjusted	propensity weighted
<i>Observations:</i>	11,686	217,276	217,276	11,770	222,847	222,847	10,734	217,957	217,957
<i>Payer Type</i>									
Medicare (%)	8	8	8	9	8	9	10	9	10
Medicaid (%)	8	18	8	9	20	9	10	23	10
Privately Insured (%)	84	74	83	83	72	82	80	68	79
<i>Plan Type</i>									
Health Maintenance Organization (HMO) (%)	76	79	76	74	77	74	71	77	72
Point Of Service (POS) (%)	10	8	10	2	2	2	2	2	2
Preferred Provider Organization (PPO) (%)	4	4	4	11	9	11	7	6	7
Exclusive Provider Organization (EPO) (%)	10	10	10	13	12	13	20	15	20
<i>Insurance Type</i>									
Administrative Services Only (ASO) (%)	17	14	17	17	14	16	11	10	11
<i>Gender</i>									
Female (%)	55	55	55	56	55	56	56	55	56
<i>Eligibility Months</i>									
Mean	11	11	11	11	11	11	11	11	11
Standard Deviation	43	36	42	43	36	43	44	37	44
Median	2	2	0	2	2	0	2	2	0
<i>Age as of Dec. 31</i>									
Mean	12	12	12	12	12	12	12	12	12
Standard Deviation	19	22	5	19	22	5	19	23	5
Median	45	37	46	45	37	46	46	38	47
<i>Lagged Prospective Risk Score</i>									
Mean	1.54	1.56	1.81	1.62	1.63	1.90	1.72	1.76	2.06
Standard Deviation	7.74	9.51	0.71	9.01	10.04	0.74	9.30	10.51	0.76
Median	0.93	0.78	0.97	0.96	0.80	1.00	1.01	0.86	1.09
<i>Total Medical Spending</i>									
Mean	3022	2895	3356	3239	3160	3648	3408	3337	3883
Standard Deviation	32859	42777	10633	44238	40309	9874	33378	44088	10671
Median	926	744	895	978	837	997	1026	864	1049
Note: Eligibility months is the number of enrolled months in a plan offered by Capital District Physicians' Health Plan (CDPHP). Physician assignment is based on Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) assignment algorithm.									

**Table B-4: Basic Difference-in-Difference Regressions Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment**

	Fixed 2008 PCP Assignment, and Excluding Entry and Exit	Fixed PCP Assignment, and Allowing Entry and Exit	Changing Patient Assignment, and Including Entry and Exit
<i>Dependent Variable:</i>	Annualized Medical Spending		
	(1)	(2)	(3)
<i>Parameter:</i>	Coefficient p-value	Coefficient p-value	Coefficient p-value
Treatment X Year <sub>2009</sub>	-194 0.20	-130 0.33	-78 0.56
Treatment X Year <sub>2010</sub>	-294 0.06	-184 0.18	-144 0.28
No of Patient Years	410,334	692,270	692,270
R-Squared	0.0011	0.0006	0.0005
Dependent Mean	3,428	3,422	3,413
Notes: Each model is estimated without individual fixed effects. The control variables used are dummies for 2009, 2010, treatment, and their interaction. Omitted group is year=2008. All models are weighted by months of eligibility and propensity scores; standard errors are not clustered. Physician assignment is based on Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) assignment algorithm.			

**Table B-5: Difference-in-Difference Regression Using Individual Fixed Effects and Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment**

	Fixed 2008 PCP Assignment, and Excluding Entry and Exit	Fixed 2008 PCP Assignment, and Including Entry and Exit	Changing PCP Assignment, and Including Entry and Exit
<i>Dependent Variable:</i>	Annualized Medical Spending		
	(1)	(2)	(3)
<i>Parameter:</i>	Coefficient p-value	Coefficient p-value	Coefficient p-value
Treatment X Year <sub>2009</sub>	-198 0.20	-220 0.22	-186 0.31
Treatment X Year <sub>2010</sub>	-289 0.15	-332 0.13	-297 0.24
Medicare	345 0.68	369 0.68	555 0.54
Medicaid	-258 0.33	129 0.74	151 0.74
Health Maintenance Organization (HMO)	114 0.38	24 0.94	18 0.95
Preferred Provider Organization (PPO)	-1141 0.00	-954 0.00	-657 0.01
Point of Service (POS)	-1556 0.00	-1246 0.00	-950 0.01
Administrative Services Only (ASO)	1993 0.01	1436 0.00	926 0.01
Year <sub>2009</sub>	425 0.00	624 0.00	622 0.00
Year <sub>2010</sub>	865 0.00	1092 0.00	1081 0.00
Treatment			730 0.02
No. of Patient Years	410,334	692,270	692,270
No. of Clusters (Practices)	941	1,122	1,122
R-Squared	0.0020	0.0024	0.0025
Dependent Mean	3,428	3,422	3,413

Notes: All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. Omitted group is year=2008, private insurance, fee-for-service or exclusive provider organization, and non-ASO. Physician assignment is based on Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) assignment algorithm.

**Table B-6: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
I. Models of Total Medical Spending, All Payers											
1. All Controls	410,334	3,428	0.0020	-198	156	-5.8%	0.20	-289	199	-8.4%	0.15
2. Basic Difference-in-Difference	410,334	3,428	0.0018	-198	153	-5.8%	0.20	-298	202	-8.7%	0.14
II. By Physician Specialty											
3. Primary Care Specialties Only	380,320	3,495	0.0021	-184	156	-5.3%	0.24	-270	199	-7.7%	0.17
4. Non-Pediatric Primary Care Specialties	263,132	3,563	0.0023	-249	163	-7.0%	0.13	-353	212	-9.9%	0.10
III. By Payer											
5. Medicare Only	47,660	6,301	0.0041	-378	400	-6.0%	0.34	-244	391	-3.9%	0.53
6. Medicaid Only	40,074	1,785	0.0009	-95	226	-5.3%	0.68	72	310	4.1%	0.82
7. Privately Insured Only	322,600	3,104	0.0019	-178	141	-5.7%	0.21	-311	197	-10.0%	0.12
IV. By Place of Service											
8. Inpatient Care	410,334	912	0.0005	-66	65	-7.2%	0.31	-102	90	-11.1%	0.26
9. Emergency Care	410,334	2,391	0.0039	-124	96	-5.2%	0.19	-167	112	-7.0%	0.14
10. Outpatient Care, and Other Care	410,334	92	0.0002	-10	4	-11.0%	0.01	-9	6	-9.6%	0.12
V. By Type of Service†											
11. Evaluation & Management	410,334	704	0.0106	-24	8	-3.4%	0.00	-46	9	-6.5%	0.00
12. Procedures	410,334	841	0.0008	-63	40	-7.5%	0.12	-77	49	-9.1%	0.12
13. Imaging	410,334	376	0.0004	-19	11	-5.2%	0.07	-15	12	-4.0%	0.20
14. Tests	410,334	175	0.0008	-14	10	-8.2%	0.15	-29	13	-16.5%	0.02
15. Durable Medical Equipment	410,334	113	0.0001	-5	9	-4.0%	0.60	1	31	1.0%	0.97
16. Others	410,334	238	0.0012	-24	18	-10.2%	0.18	-4	37	-1.7%	0.91

Notes: Each row is from a different regression. All models weighted by months of eligibility and propensity scores; standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table B-7: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Fixed PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	692,270	3,422	0.0024	-220	180	-6.4%	0.22	-332	219	-9.7%	0.13
2. Basic Difference-in-Difference	692,270	3,422	0.0023	-218	174	-6.4%	0.21	-337	220	-9.8%	0.13
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	623,836	3,500	0.0026	-218	184	-6.2%	0.23	-320	226	-9.1%	0.16
4. Non-Pediatric Primary Care Specialties	424,451	3,574	0.0029	-297	196	-8.3%	0.13	-429	244	-12.0%	0.08
<b>III. By Payer</b>											
5. Medicare Only	58,961	7,510	0.0087	-852	438	-11.4%	0.05	-856	559	-11.4%	0.13
6. Medicaid Only	136,588	2,106	0.0009	-8	355	-0.4%	0.98	-31	308	-1.5%	0.92
7. Privately Insured Only	496,721	3,084	0.0020	-165	158	-5.4%	0.29	-289	209	-9.4%	0.17
<b>IV. By Place of Service</b>											
8. Inpatient Care	692,270	1,014	0.0008	-141	95	-13.9%	0.14	-166	118	-16.4%	0.16
9. Emergency Care	692,270	2,264	0.0037	-62	106	-2.7%	0.56	-134	109	-5.9%	0.22
10. Outpatient Care, and Other Care	692,270	103	0.0002	-14	4	-13.4%	0.00	-8	6	-7.7%	0.19
<b>V. By Type of Service†</b>											
11. Evaluation & Management	692,270	669	0.0096	-32	8	-4.7%	0.00	-51	8	-7.6%	0.00
12. Procedures	692,270	792	0.0008	-36	46	-4.5%	0.44	-66	52	-8.3%	0.20
13. Imaging	692,270	352	0.0005	-22	9	-6.1%	0.02	-16	14	-4.4%	0.27
14. Tests	692,270	164	0.0008	-11	13	-6.6%	0.39	-20	14	-12.1%	0.16
15. Durable Medical Equipment	692,270	104	0.0002	-3	9	-2.7%	0.76	5	24	5.0%	0.82
16. Others	692,270	245	0.0010	6	28	2.5%	0.83	-2	41	-0.8%	0.96
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	503,265	3,461	0.0025	-134	133	-3.9%	0.32	-308	199	-8.9%	0.12
18. Full 36 months eligibility (2008-2010)	410,334	3,412	0.0020	-189	157	-5.5%	0.23	-277	199	-8.1%	0.16
19. Less than 36 months eligibility (2008-2010)	281,936	3,442	0.0051	-334	374	-9.7%	0.37	-572	486	-16.6%	0.24
20. New Arrivers and Early Departers	189,005	3,287	0.0042	-632	529	-19.2%	0.23	-578	450	-17.6%	0.20

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table B-8: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	692,270	3,413	0.0025	-186	183	-5.4%	0.31	-297	254	-8.7%	0.24
2. Basic Difference-in-Difference	692,270	3,413	0.0024	-184	176	-5.4%	0.30	-299	255	-8.8%	0.24
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	623,836	3,469	0.0025	-206	186	-5.9%	0.27	-327	259	-9.4%	0.21
4. Non-Pediatric Primary Care Specialties	424,451	3,562	0.0030	-284	198	-8.0%	0.15	-408	278	-11.4%	0.14
<b>III. By Payer</b>											
5. Medicare Only	58,961	7,510	0.0084	-958	575	-12.8%	0.10	-716	593	-9.5%	0.23
6. Medicaid Only	136,588	2,118	0.0010	149	334	7.0%	0.66	54	274	2.6%	0.84
7. Privately Insured Only	496,721	3,076	0.0020	-130	154	-4.2%	0.40	-283	239	-9.2%	0.24
<b>IV. By Place of Service</b>											
8. Inpatient Care	692,270	1,009	0.0008	-135	83	-13.4%	0.10	-178	137	-17.7%	0.19
9. Emergency Care	692,270	2,262	0.0037	-36	115	-1.6%	0.76	-91	123	-4.0%	0.46
10. Outpatient Care, and Other Care	692,270	103	0.0001	-10	4	-10.0%	0.01	-7	6	-6.6%	0.30
<b>V. By Type of Service†</b>											
11. Evaluation & Management	692,270	668	0.0096	-25	7	-3.7%	0.00	-47	7	-7.0%	0.00
12. Procedures	692,270	793	0.0009	-15	47	-1.9%	0.75	-42	61	-5.3%	0.49
13. Imaging	692,270	349	0.0005	-16	10	-4.5%	0.13	-12	16	-3.3%	0.48
14. Tests	692,270	164	0.0008	-8	13	-5.0%	0.53	-23	15	-14.2%	0.12
15. Durable Medical Equipment	692,270	103	0.0002	-2	9	-1.7%	0.85	2	25	1.5%	0.95
16. Others	692,270	246	0.0010	13	31	5.3%	0.67	8	47	3.2%	0.87
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	503,265	3,436	0.0025	-107	132	-3.1%	0.42	-267	236	-7.8%	0.26
18. Full 36 months eligibility (2008-2010)	410,334	3,391	0.0020	-171	160	-5.0%	0.28	-233	226	-6.9%	0.30
19. Less than 36 months eligibility (2008-2010)	281,936	3,458	0.0053	-213	348	-6.1%	0.54	-490	472	-14.2%	0.30
20. New Arrivers and Early Departers	189,005	3,334	0.0048	-554	540	-16.6%	0.30	-600	477	-18.0%	0.21

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table B-9: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
I. Models of Total Medical Spending, All Payers											
1. All Controls	304,260	3,628	0.0026	-84	177	-2.3%	0.63	-165	237	-4.5%	0.49
2. Basic Difference-in-Difference	304,260	3,628	0.0023	-84	174	-2.3%	0.63	-172	237	-4.7%	0.47
II. By Physician Specialty											
3. Primary Care Specialties Only	294,562	3,568	0.0023	-102	178	-2.9%	0.57	-161	238	-4.5%	0.50
4. Non-Pediatric Primary Care Specialties	200,072	3,639	0.0026	-174	187	-4.8%	0.35	-224	251	-6.2%	0.37
III. By Payer											
5. Medicare Only	40,545	6,489	0.0047	-140	443	-2.2%	0.75	-146	339	-2.3%	0.67
6. Medicaid Only	29,011	1,990	0.0025	-234	175	-11.7%	0.18	48	348	2.4%	0.89
7. Privately Insured Only	234,704	3,237	0.0024	-66	181	-2.0%	0.72	-169	261	-5.2%	0.52
IV. By Place of Service											
8. Inpatient Care	304,260	924	0.0006	-22	75	-2.4%	0.77	-99	96	-10.7%	0.30
9. Emergency Care	304,260	2,576	0.0048	-60	114	-2.3%	0.60	-71	141	-2.8%	0.61
10. Outpatient Care, and Other Care	304,260	96	0.0004	-9	5	-9.6%	0.06	-2	6	-1.7%	0.79
V. By Type of Service†											
11. Evaluation & Management	304,260	767	0.0127	-10	13	-1.3%	0.42	-32	8	-4.1%	0.00
12. Procedures	304,260	891	0.0013	-12	48	-1.3%	0.80	-14	58	-1.6%	0.80
13. Imaging	304,260	405	0.0005	-11	15	-2.7%	0.46	2	19	0.4%	0.93
14. Tests	304,260	192	0.0007	-7	13	-3.8%	0.56	-20	16	-10.6%	0.21
15. Durable Medical Equipment	304,260	122	0.0001	-8	17	-6.8%	0.63	-5	34	-4.0%	0.88
16. Others	304,260	245	0.0016	-14	20	-5.9%	0.48	18	42	7.4%	0.67

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table B-10: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment, with Fixed PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	573,476	3,495	0.0028	-138	191	-4.0%	0.47	-231	273	-6.6%	0.40
2. Basic Difference-in-Difference	573,476	3,495	0.0026	-138	179	-4.0%	0.44	-234	266	-6.7%	0.38
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	549,373	3,415	0.0026	-136	193	-4.0%	0.48	-212	272	-6.2%	0.44
4. Non-Pediatric Primary Care Specialties	372,093	3,480	0.0029	-218	205	-6.3%	0.29	-311	291	-8.9%	0.29
<b>III. By Payer</b>											
5. Medicare Only	54,306	7,517	0.0086	-1107	431	-14.7%	0.01	-1063	551	-14.1%	0.05
6. Medicaid Only	107,408	2,222	0.0012	-147	239	-6.6%	0.54	-238	376	-10.7%	0.53
7. Privately Insured Only	411,762	3,129	0.0024	-15	199	-0.5%	0.94	-111	317	-3.6%	0.72
<b>IV. By Place of Service</b>											
8. Inpatient Care	573,476	989	0.0009	-111	89	-11.3%	0.21	-137	137	-13.8%	0.32
9. Emergency Care	573,476	2,367	0.0043	-14	113	-0.6%	0.90	-73	143	-3.1%	0.61
10. Outpatient Care, and Other Care	573,476	104	0.0002	-11	5	-10.4%	0.03	-2	6	-1.9%	0.76
<b>V. By Type of Service†</b>											
11. Evaluation & Management	573,476	707	0.0109	-16	10	-2.3%	0.11	-37	8	-5.2%	0.00
12. Procedures	573,476	815	0.0011	4	55	0.5%	0.94	-33	64	-4.1%	0.61
13. Imaging	573,476	369	0.0005	-13	12	-3.6%	0.28	-7	19	-1.9%	0.71
14. Tests	573,476	174	0.0009	-4	15	-2.5%	0.77	-17	18	-9.8%	0.35
15. Durable Medical Equipment	573,476	107	0.0002	-7	11	-6.7%	0.51	-4	27	-3.3%	0.90
16. Others	573,476	245	0.0013	9	23	3.8%	0.68	27	39	11.1%	0.48
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	359,064	3,661	0.0030	-33	168	-0.9%	0.85	-207	244	-5.7%	0.40
18. Full 36 months eligibility (2008-2010)	304,260	3,593	0.0025	-71	177	-2.0%	0.69	-144	237	-4.0%	0.54
19. Less than 36 months eligibility (2008-2010)	269,216	3,355	0.0042	-318	233	-9.5%	0.17	-504	427	-15.0%	0.24
20. New Arrivers and Early Departers	214,412	3,180	0.0033	-487	514	-15.3%	0.34	-355	647	-11.2%	0.58

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table B-11: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment, with Changing PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	573,476	3,436	0.0025	-285	171	-8.3%	0.10	-367	282	-10.7%	0.19
2. Basic Difference-in-Difference	573,476	3,436	0.0024	-285	161	-8.3%	0.08	-365	277	-10.6%	0.19
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	549,373	3,375	0.0024	-261	171	-7.7%	0.13	-294	278	-8.7%	0.29
4. Non-Pediatric Primary Care Specialties	372,093	3,465	0.0027	-324	181	-9.3%	0.07	-393	296	-11.3%	0.18
<b>III. By Payer</b>											
5. Medicare Only	54,306	7,362	0.0075	-1537	440	-20.9%	0.00	-1300	664	-17.7%	0.05
6. Medicaid Only	107,408	2,196	0.0010	-168	271	-7.7%	0.53	-582	320	-26.5%	0.07
7. Privately Insured Only	411,762	3,089	0.0021	-142	164	-4.6%	0.39	-225	334	-7.3%	0.50
<b>IV. By Place of Service</b>											
8. Inpatient Care	573,476	961	0.0008	-188	69	-19.5%	0.01	-228	132	-23.7%	0.08
9. Emergency Care	573,476	2,341	0.0040	-78	108	-3.3%	0.47	-115	157	-4.9%	0.46
10. Outpatient Care, and Other Care	573,476	103	0.0002	-10	5	-9.6%	0.05	-3	6	-3.2%	0.59
<b>V. By Type of Service†</b>											
11. Evaluation & Management	573,476	700	0.0107	-23	9	-3.3%	0.01	-46	8	-6.5%	0.00
12. Procedures	573,476	807	0.0011	-15	55	-1.8%	0.79	-37	74	-4.6%	0.61
13. Imaging	573,476	363	0.0004	-19	10	-5.1%	0.07	-11	21	-3.1%	0.60
14. Tests	573,476	172	0.0008	-9	13	-5.2%	0.48	-21	19	-12.0%	0.28
15. Durable Medical Equipment	573,476	104	0.0002	-17	9	-16.0%	0.08	-12	28	-11.8%	0.66
16. Others	573,476	242	0.0011	-11	19	-4.7%	0.56	10	40	4.0%	0.81
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	359,064	3,579	0.0026	-201	131	-5.6%	0.12	-366	250	-10.2%	0.14
18. Full 36 months eligibility (2008-2010)	304,260	3,536	0.0022	-215	149	-6.1%	0.15	-252	243	-7.1%	0.30
19. Less than 36 months eligibility (2008-2010)	269,216	3,294	0.0040	-470	247	-14.3%	0.06	-707	401	-21.5%	0.08
20. New Arrivers and Early Departers	214,412	3,165	0.0032	-542	535	-17.1%	0.31	-375	718	-11.8%	0.60

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

## **Appendix C. Further Results from the Difference-in-Difference Analysis using Prospective Risk Score for Propensity Weighting**

Table C-1: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit

Table C-2: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed PCP Assignment, and Including Entry and Exit

Table C-3: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Changing PCP Assignment, and Including Entry and Exit

Table C-4: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit

Table C-5: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed PCP Assignment, and Including Entry and Exit

Table C-6: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Changing PCP Assignment, and Including Entry and Exit

Table C-7: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting—Fixed at 2008—Using Lagged Prospective Risk Score, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit

**Table C-1: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	410,334	3,235	0.0026	-286	154	-8.8%	0.06	-318	198	-9.8%	0.11
2. Basic Difference-in-Difference	410,334	3,235	0.0023	-286	151	-8.8%	0.06	-327	201	-10.1%	0.10
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	380,320	3,304	0.0026	-274	155	-8.3%	0.08	-301	198	-9.1%	0.13
4. Non-Pediatric Primary Care Specialties	263,132	3,398	0.0028	-328	160	-9.7%	0.04	-384	211	-11.3%	0.07
<b>III. By Payer</b>											
5. Medicare Only	47,660	5,865	0.0057	-700	381	-11.9%	0.07	-533	382	-9.1%	0.16
6. Medicaid Only	40,074	1,645	0.0017	-223	190	-13.6%	0.24	10	298	0.6%	0.97
7. Privately Insured Only	322,600	2,943	0.0022	-233	138	-7.9%	0.09	-302	197	-10.3%	0.13
<b>IV. By Place of Service</b>											
8. Inpatient Care	410,334	838	0.0007	-135	60	-16.0%	0.03	-157	86	-18.8%	0.07
9. Emergency Care	410,334	89	0.0003	-11	4	-12.3%	0.00	-7	5	-7.5%	0.22
10. Outpatient Care, and Other Care	410,334	2,280	0.0044	-140	95	-6.2%	0.14	-144	113	-6.3%	0.20
<b>V. By Type of Service†</b>											
11. Evaluation & Management	410,334	687	0.0127	-32	7	-4.7%	0.00	-50	9	-7.3%	0.00
12. Procedures	410,334	800	0.0008	-72	40	-9.0%	0.07	-67	49	-8.4%	0.18
13. Imaging	410,334	364	0.0005	-25	11	-6.9%	0.02	-20	12	-5.6%	0.09
14. Tests	410,334	168	0.0008	-14	10	-8.6%	0.15	-27	12	-16.0%	0.03
15. Durable Medical Equipment	410,334	105	0.0002	-6	8	-5.7%	0.47	-1	32	-1.4%	0.96
16. Others	410,334	207	0.0015	-26	17	-12.5%	0.12	5	37	2.3%	0.90

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table C-2: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	692,270	3,211	0.0029	-239	178	-7.5%	0.18	-286	217	-8.9%	0.19
2. Basic Difference-in-Difference	692,270	3,211	0.0028	-238	172	-7.4%	0.17	-290	218	-9.0%	0.18
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	623,836	3,292	0.0030	-235	181	-7.1%	0.20	-271	224	-8.2%	0.23
4. Non-Pediatric Primary Care Specialties	424,451	3,395	0.0033	-303	193	-8.9%	0.12	-375	242	-11.0%	0.12
<b>III. By Payer</b>											
5. Medicare Only	58,961	6,923	0.0101	-911	422	-13.2%	0.03	-809	564	-11.7%	0.15
6. Medicaid Only	136,588	1,971	0.0013	-103	349	-5.2%	0.77	-65	302	-3.3%	0.83
7. Privately Insured Only	496,721	2,909	0.0024	-173	155	-6.0%	0.26	-235	206	-8.1%	0.25
<b>IV. By Place of Service</b>											
8. Inpatient Care	692,270	920	0.0011	-150	93	-16.3%	0.11	-145	114	-15.7%	0.20
9. Emergency Care	692,270	100	0.0002	-13	4	-13.4%	0.00	-5	6	-4.5%	0.43
10. Outpatient Care, and Other Care	692,270	2,156	0.0041	-74	105	-3.5%	0.48	-116	109	-5.4%	0.29
<b>V. By Type of Service†</b>											
11. Evaluation & Management	692,270	652	0.0113	-34	7	-5.2%	0.00	-49	8	-7.6%	0.00
12. Procedures	692,270	753	0.0008	-42	46	-5.6%	0.36	-59	52	-7.8%	0.26
13. Imaging	692,270	340	0.0006	-25	9	-7.5%	0.00	-19	14	-5.6%	0.17
14. Tests	692,270	158	0.0008	-10	13	-6.3%	0.43	-18	14	-11.3%	0.20
15. Durable Medical Equipment	692,270	98	0.0002	-4	9	-4.2%	0.65	3	24	3.2%	0.89
16. Others	692,270	212	0.0012	3	27	1.3%	0.92	4	41	2.0%	0.92
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	503,265	3,273	0.0030	-205	131	-6.3%	0.12	-262	198	-8.0%	0.19
18. Full 36 months eligibility (2008-2010)	410,334	3,245	0.0025	-266	155	-8.2%	0.09	-303	198	-9.3%	0.13
19. Less than 36 months eligibility (2008-2010)	281,936	3,140	0.0058	-153	367	-4.9%	0.68	-201	458	-6.4%	0.66
20. New Arrivers and Early Departers	189,005	3,003	0.0046	-417	528	-13.9%	0.43	-539	421	-17.9%	0.20

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table C-3: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Changing PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	692,270	3,200	0.0031	-211	181	-6.6%	0.24	-251	252	-7.9%	0.32
2. Basic Difference-in-Difference	692,270	3,200	0.0030	-209	174	-6.5%	0.23	-252	253	-7.9%	0.32
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	623,836	3,261	0.0031	-227	184	-7.0%	0.22	-278	257	-8.5%	0.28
4. Non-Pediatric Primary Care Specialties	424,451	3,387	0.0034	-294	194	-8.7%	0.13	-357	275	-10.6%	0.19
<b>III. By Payer</b>											
5. Medicare Only	58,961	6,911	0.0100	-1027	563	-14.9%	0.07	-674	593	-9.8%	0.26
6. Medicaid Only	136,588	1,983	0.0014	51	328	2.6%	0.88	20	267	1.0%	0.94
7. Privately Insured Only	496,721	2,898	0.0025	-143	150	-5.0%	0.34	-230	235	-7.9%	0.33
<b>IV. By Place of Service</b>											
8. Inpatient Care	692,270	913	0.0011	-149	78	-16.3%	0.05	-158	132	-17.3%	0.23
9. Emergency Care	692,270	99	0.0002	-10	4	-9.9%	0.01	-3	6	-3.3%	0.59
10. Outpatient Care, and Other Care	692,270	2,153	0.0043	-48	114	-2.2%	0.67	-73	123	-3.4%	0.55
<b>V. By Type of Service†</b>											
11. Evaluation & Management	692,270	651	0.0116	-28	7	-4.3%	0.00	-46	7	-7.1%	0.00
12. Procedures	692,270	755	0.0009	-22	47	-3.0%	0.63	-35	61	-4.7%	0.56
13. Imaging	692,270	338	0.0006	-20	10	-5.8%	0.06	-15	16	-4.5%	0.35
14. Tests	692,270	158	0.0009	-7	13	-4.7%	0.57	-21	15	-13.5%	0.16
15. Durable Medical Equipment	692,270	96	0.0002	-3	9	-3.2%	0.74	-1	25	-0.6%	0.98
16. Others	692,270	213	0.0012	10	29	4.9%	0.73	14	46	6.7%	0.76
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	503,265	3,244	0.0030	-181	130	-5.6%	0.16	-226	235	-7.0%	0.34
18. Full 36 months eligibility (2008-2010)	410,334	3,222	0.0025	-251	158	-7.8%	0.11	-263	225	-8.2%	0.24
19. Less than 36 months eligibility (2008-2010)	281,936	3,153	0.0063	-42	333	-1.3%	0.90	-109	424	-3.4%	0.80
20. New Arrivers and Early Departers	189,005	3,049	0.0055	-342	534	-11.2%	0.52	-518	436	-17.0%	0.24

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table C-4: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	304,260	3,422	0.0033	-197	175	-5.7%	0.26	-195	236	-5.7%	0.41
2. Basic Difference-in-Difference	304,260	3,422	0.0030	-197	172	-5.8%	0.25	-203	238	-5.9%	0.39
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	294,562	3,377	0.0030	-211	177	-6.3%	0.23	-194	238	-5.7%	0.42
4. Non-Pediatric Primary Care Specialties	200,072	3,474	0.0033	-284	184	-8.2%	0.12	-266	251	-7.6%	0.29
<b>III. By Payer</b>											
5. Medicare Only	40,545	6,009	0.0068	-531	427	-8.8%	0.21	-447	321	-7.4%	0.16
6. Medicaid Only	29,011	1,811	0.0034	-293	156	-16.2%	0.06	29	339	1.6%	0.93
7. Privately Insured Only	234,704	3,076	0.0030	-136	179	-4.4%	0.45	-156	260	-5.1%	0.55
<b>IV. By Place of Service</b>											
8. Inpatient Care	304,260	845	0.0010	-100	70	-11.9%	0.16	-161	93	-19.1%	0.08
9. Emergency Care	304,260	92	0.0005	-11	5	-12.1%	0.02	0	6	-0.1%	0.99
10. Outpatient Care, and Other Care	304,260	2,457	0.0054	-89	113	-3.6%	0.43	-41	140	-1.7%	0.77
<b>V. By Type of Service†</b>											
11. Evaluation & Management	304,260	747	0.0147	-21	12	-2.9%	0.09	-38	8	-5.1%	0.00
12. Procedures	304,260	852	0.0014	-27	47	-3.2%	0.56	-2	57	-0.2%	0.98
13. Imaging	304,260	391	0.0007	-19	15	-4.9%	0.20	-5	19	-1.2%	0.80
14. Tests	304,260	185	0.0008	-9	13	-4.9%	0.47	-20	16	-10.7%	0.23
15. Durable Medical Equipment	304,260	113	0.0002	-10	17	-9.2%	0.55	-8	34	-7.1%	0.81
16. Others	304,260	213	0.0020	-17	18	-8.0%	0.34	33	41	15.4%	0.42

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table C-5: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Fixed PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	573,476	3,261	0.0035	-164	189	-5.0%	0.39	-186	273	-5.7%	0.49
2. Basic Difference-in-Difference	573,476	3,261	0.0033	-163	177	-5.0%	0.36	-189	266	-5.8%	0.48
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	549,373	3,204	0.0032	-169	190	-5.3%	0.37	-177	272	-5.5%	0.51
4. Non-Pediatric Primary Care Specialties	372,093	3,298	0.0035	-256	201	-7.8%	0.20	-276	291	-8.4%	0.34
<b>III. By Payer</b>											
5. Medicare Only	54,306	6,819	0.0103	-1179	410	-17.3%	0.00	-1006	551	-14.8%	0.07
6. Medicaid Only	107,408	2,045	0.0017	-230	232	-11.3%	0.32	-270	376	-13.2%	0.46
7. Privately Insured Only	411,762	2,946	0.0029	-28	197	-1.0%	0.89	-62	317	-2.1%	0.84
<b>IV. By Place of Service</b>											
8. Inpatient Care	573,476	886	0.0012	-120	85	-13.6%	0.16	-120	137	-13.5%	0.37
9. Emergency Care	573,476	100	0.0004	-12	5	-11.7%	0.01	1	143	0.9%	0.87
10. Outpatient Care, and Other Care	573,476	2,245	0.0049	-30	112	-1.3%	0.79	-52	6	-2.3%	0.71
<b>V. By Type of Service†</b>											
11. Evaluation & Management	573,476	687	0.0128	-21	10	-3.0%	0.05	-38	8	-5.5%	0.00
12. Procedures	573,476	775	0.0012	-7	54	-0.9%	0.90	-25	64	-3.3%	0.69
13. Imaging	573,476	355	0.0006	-19	13	-5.4%	0.13	-12	19	-3.5%	0.51
14. Tests	573,476	167	0.0011	-4	15	-2.7%	0.76	-17	18	-10.0%	0.36
15. Durable Medical Equipment	573,476	99	0.0002	-9	11	-9.1%	0.40	-6	27	-6.5%	0.81
16. Others	573,476	208	0.0017	8	20	3.7%	0.69	37	39	17.6%	0.32
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	359,064	3,450	0.0037	-120	165	-3.5%	0.47	-156	244	-4.5%	0.52
18. Full 36 months eligibility (2008-2010)	304,260	3,404	0.0032	-168	175	-4.9%	0.34	-173	237	-5.1%	0.46
19. Less than 36 months eligibility (2008-2010)	269,216	3,058	0.0048	-155	215	-5.1%	0.47	-218	427	-7.1%	0.59
20. New Arrivers and Early Departers	214,412	2,905	0.0037	-321	506	-11.1%	0.53	-328	647	-11.3%	0.61

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table C-6: Treatment Effect Sensitivity Analysis Using Capital District Physicians' Health Plan (CDPHP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting Using Lagged Prospective Risk Score, with Changing PCP Assignment, and Including Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	573,476	3,188	0.0032	-322	171	-10.1%	0.05	-332	278	-10.4%	0.23
2. Basic Difference-in-Difference	573,476	3,188	0.0031	-321	161	-10.1%	0.04	-330	273	-10.4%	0.23
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	549,373	3,152	0.0030	-306	171	-9.7%	0.07	-271	275	-8.6%	0.32
4. Non-Pediatric Primary Care Specialties	372,093	3,275	0.0032	-373	181	-11.4%	0.03	-370	294	-11.3%	0.21
<b>III. By Payer</b>											
5. Medicare Only	54,306	6,610	0.0097	-1640	440	-24.8%	0.00	-1237	667	-18.7%	0.06
6. Medicaid Only	107,408	2,011	0.0017	-259	271	-12.9%	0.32	-623	310	-31.0%	0.04
7. Privately Insured Only	411,762	2,895	0.0027	-166	164	-5.7%	0.30	-189	330	-6.5%	0.57
<b>IV. By Place of Service</b>											
8. Inpatient Care	573,476	852	0.0010	-205	69	-24.1%	0.00	-220	124	-25.9%	0.08
9. Emergency Care	573,476	98	0.0004	-11	108	-11.2%	0.02	-1	5	-0.7%	0.91
10. Outpatient Care, and Other Care	573,476	2,212	0.0046	-97	5	-4.4%	0.37	-95	157	-4.3%	0.54
<b>V. By Type of Service†</b>											
11. Evaluation & Management	573,476	679	0.0129	-29	9	-4.2%	0.00	-48	7	-7.0%	0.00
12. Procedures	573,476	765	0.0012	-27	55	-3.6%	0.61	-31	73	-4.0%	0.67
13. Imaging	573,476	349	0.0006	-25	10	-7.2%	0.01	-18	21	-5.1%	0.41
14. Tests	573,476	165	0.0010	-9	13	-5.6%	0.47	-21	19	-12.5%	0.28
15. Durable Medical Equipment	573,476	96	0.0002	-19	9	-19.7%	0.04	-15	28	-16.0%	0.58
16. Others	573,476	203	0.0015	-14	19	-6.7%	0.44	19	39	9.6%	0.62
<b>VI. By Categories of Eligibility</b>											
17. Eligible for at least one month each year	359,064	3,352	0.0033	-305	131	-9.1%	0.02	-325	248	-9.7%	0.19
18. Full 36 months eligibility (2008-2010)	304,260	3,333	0.0028	-326	149	-9.8%	0.03	-291	241	-8.7%	0.23
19. Less than 36 months eligibility (2008-2010)	269,216	2,982	0.0046	-313	247	-10.5%	0.17	-432	360	-14.5%	0.23
20. New Arrivers and Early Departers	214,412	2,881	0.0037	-371	535	-12.9%	0.48	-358	711	-12.4%	0.61

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.

**Table C-7: Treatment Effect Sensitivity Analysis Using Massachusetts Health Quality Project (MHQP) Primary Care Practitioner (PCP) Assignment and Propensity Weighting—Fixed at 2008—Using Lagged Prospective Risk Score, with Fixed 2008 PCP Assignment, and Excluding Entry and Exit**

Model Name	No. of Patient Years	Dependent Mean	R-square	Year 1 Effects (2009)				Year 2 Effects (2010)			
				Coefficient	Standard Error	% effect 2009	p-values	Coefficient	Standard Error	% effect 2010	p-values
<b>I. Models of Total Medical Spending, All Payers</b>											
1. All Controls	410,334	3,283	0.0021	-192	156	-5.9%	0.22	-247	198	-7.5%	0.21
2. Basic Difference-in-Difference	410,334	3,283	0.0018	-193	152	-5.9%	0.20	-258	199	-7.9%	0.20
<b>II. By Physician Specialty</b>											
3. Primary Care Specialties Only	380,320	3,351	0.0022	-176	156	-5.3%	0.26	-227	197	-6.8%	0.25
4. Non-Pediatric Primary Care Specialties	263,132	3,439	0.0024	-240	162	-7.0%	0.14	-306	210	-8.9%	0.15
<b>III. By Payer</b>											
5. Medicare Only	47,660	5,956	0.0046	-474	385	-8.0%	0.22	-301	387	-5.1%	0.44
6. Medicaid Only	40,074	1,683	0.0014	-189	196	-11.2%	0.33	48	297	2.9%	0.87
7. Privately Insured Only	322,600	2,981	0.0019	-154	140	-5.2%	0.27	-256	194	-8.6%	0.19
<b>IV. By Place of Service</b>											
8. Inpatient Care	410,334	857	0.0005	-55	63	-6.4%	0.38	-81	87	-9.5%	0.35
9. Emergency Care	410,334	89	0.0003	-9	4	-10.5%	0.01	-6	5	-6.3%	0.30
10. Outpatient Care, and Other Care	410,334	2,307	0.0041	-130	96	-5.6%	0.17	-153	112	-6.6%	0.17
<b>V. By Type of Service†</b>											
11. Evaluation & Management	410,334	690	0.0108	-24	8	-3.5%	0.00	-43	9	-6.2%	0.00
12. Procedures	410,334	811	0.0007	-65	40	-8.1%	0.10	-69	49	-8.5%	0.16
13. Imaging	410,334	367	0.0004	-21	11	-5.6%	0.06	-16	12	-4.5%	0.17
14. Tests	410,334	170	0.0007	-14	10	-8.0%	0.17	-26	12	-15.2%	0.04
15. Durable Medical Equipment	410,334	107	0.0002	-6	8	-5.5%	0.49	-1	31	-0.5%	0.99
16. Others	410,334	216	0.0014	-26	17	-12.1%	0.13	-2	37	-1.0%	0.95

Notes: Each row is from a different regression. All models are weighted by months of eligibility and propensity scores. Standard errors are clustered for practice IDs. All models include individual fixed effects. In addition, models 5-7 include fixed effects for insurance type and plan type, while the remaining models include fixed effects for insurance type, plan type and payer type. †Clinical categories designated according to the Berenson-Eggers Type of Service (BETOS) classification, version 2012, applied to professional claims only.