

Table 1: Descriptive Statistics (Nominal / Ordinal Variables)

Variable	$P_{No}$	$P_{Full}$	$P_{Part}$
<b>Year of Visit</b>			
2008	0.5421	0.2749	0.1830
2009	0.4859	0.3252	0.1889
2010	0.4846	0.3881	0.1273
$\chi^2_4 = 44.95$			
<b>Ownership Type</b>			
Physician or physician group	0.5395	0.2989	0.1616
Health Maintenance Organization (HMO)	0.0647	0.8051	0.1302
Community health center	0.4293	0.3522	0.2185
Medical/academic health center	0.4714	0.3627	0.1659
Other hospital	0.4305	0.3526	0.2169
Other health care corporation	0.3434	0.4759	0.1807
Other	0.3436	0.4414	0.2150
$\chi^2_{12} = 146.29$			
<b>Metropolitan Statistical Area</b>			
MSA	0.5064	0.3293	0.1644
Non-MSA	0.4823	0.3308	0.1869
$\chi^2_2 = 1.43$			
<b>Managed Care Contracts</b>			
None	0.6234	0.2092	0.1674
Less than 3	0.4939	0.3419	0.1642
3-10	0.5318	0.2994	0.1688
Greater than 10	0.4537	0.3808	0.1655
$\chi^2_6 = 56.82$			
<b>Physician specialties</b>			
General/family practice	0.4238	0.4317	0.1445
Internal medicine	0.4761	0.3776	0.1464
Pediatrics	0.5243	0.3107	0.1650
General surgery	0.5905	0.2494	0.1601
Obstetrics and gynecology	0.5065	0.3218	0.1718
Orthopedic surgery	0.4356	0.3709	0.1935
Cardiovascular diseases	0.4246	0.3037	0.2717
Dermatology	0.6625	0.2297	0.1079
Urology	0.4559	0.3757	0.1684
Psychiatry	0.7140	0.1424	0.1436
Neurology	0.5539	0.2771	0.1690
Ophthalmology	0.6344	0.1504	0.2152
Otolaryngology	0.5055	0.3483	0.1462
Other specialties	0.5122	0.3148	0.1730

Table 1: Descriptive Statistics (Nominal / Ordinal Variables)

Variable	$P_{No}$	$P_{Full}$	$P_{Part}$
Oncology	0.3444	0.3836	0.2721
$\chi^2_{28} = 132.67$			
<b>Region</b>			
Northeast	0.5091	0.3080	0.1829
Midwest	0.5204	0.3227	0.1568
South	0.5232	0.3110	0.1658
West	0.4560	0.3814	0.1626
$\chi^2_6 = 16.41$			
<b>Solo</b>			
Yes	0.4386	0.3910	0.1704
No	0.6367	0.2041	0.1592
$\chi^2_2 = 147.56$			
Total	0.5039	0.3294	0.1667
Obs.	3,619		
Population Size	953,908		

Table 2: Descriptive Statistics (Nominal / Ordinal Variables)

	$P_{No}$	$P_{Full}$	$P_{Part}$
<b>Year of Visit</b>			
2008	0.5421	0.2749	0.1830
2009	0.4859	0.3252	0.1889
2010	0.4846	0.3881	0.1273
<b>Ownership Type</b>			
Physician or physician group	0.5395	0.2989	0.1616
Health Maintenance Organization (HMO)	0.0647	0.8051	0.1302
Community health center	0.4293	0.3522	0.2185
Medical/academic health center	0.4714	0.3627	0.1659
Other hospital	0.4305	0.3526	0.2169
Other health care corporation	0.3434	0.4759	0.1807
Other	0.3436	0.4414	0.2150
<b>Metropolitan Statistical Area</b>			
MSA	0.5064	0.3293	0.1644
Non-MSA	0.4823	0.3308	0.1869
<b>Managed Care Contracts</b>			
None	0.6234	0.2092	0.1674
Less than 3	0.4939	0.3419	0.1642
3-10	0.5318	0.2994	0.1688
Greater than 10	0.4537	0.3808	0.1655
<b>Physician specialties</b>			
General/family practice	0.4238	0.4317	0.1445
Internal medicine	0.4761	0.3776	0.1464
Pediatrics	0.5243	0.3107	0.1650
General surgery	0.5905	0.2494	0.1601
Obstetrics and gynecology	0.5065	0.3218	0.1718
Orthopedic surgery	0.4356	0.3709	0.1935
Cardiovascular diseases	0.4246	0.3037	0.2717
Dermatology	0.6625	0.2297	0.1079
Urology	0.4559	0.3757	0.1684
Psychiatry	0.7140	0.1424	0.1436
Neurology	0.5539	0.2771	0.1690
Ophthalmology	0.6344	0.1504	0.2152
Otolaryngology	0.5055	0.3483	0.1462
Other specialties	0.5122	0.3148	0.1730
Oncology	0.3444	0.3836	0.2721
<b>Region</b>			
Northeast	0.5091	0.3080	0.1829
Midwest	0.5204	0.3227	0.1568
South	0.5232	0.3110	0.1658
West	0.456	0.3814	0.1626
<b>Solo</b>			
Yes	0.4386	0.391	0.1704
No	0.6367	0.2041	0.1592
<b>Total</b>			
	0.5039	0.3294	0.1667

Table 3: Descriptive Statistics by Treatment Groups (Categorical variables)

Variable	Levels	n <sub>no</sub>	% <sub>no</sub>	n <sub>full</sub>	% <sub>full</sub>	n <sub>partial</sub>	% <sub>partial</sub>	n <sub>All</sub>	% <sub>All</sub>
VYEAR	2008	169316	35.2	85869	27.3	57148	35.9	312333	32.7
	2009	159231	33.1	106551	33.9	61915	38.9	327697	34.4
	2010	152098	31.6	121813	38.8	39967	25.1	313878	32.9
$p < 0.0001$	all	480645	100.0	314233	100.0	159030	100.0	953908	100.0
OWNS	1	413518	86.0	229146	72.9	123852	77.9	766516	80.4
	2	1431	0.3	17814	5.7	2881	1.8	22126	2.3
	3	13950	2.9	11443	3.6	7100	4.5	32493	3.4
	4	13269	2.8	10209	3.2	4671	2.9	28149	3.0
	5	12584	2.6	10309	3.3	6340	4.0	29233	3.1
	6	20246	4.2	28058	8.9	10653	6.7	58957	6.2
	7	5647	1.2	7254	2.3	3533	2.2	16434	1.7
$p < 0.0001$	all	480645	100.0	314233	100.0	159030	100.0	953908	100.0
MSA	1	432514	90.0	281217	89.5	140373	88.3	854104	89.5
	2	48131	10.0	33016	10.5	18657	11.7	99804	10.5
$p < 0.0001$	all	480645	100.0	314233	100.0	159030	100.0	953908	100.0
MANCAREC	1	68873	14.3	23113	7.4	18497	11.6	110483	11.6
	2	46776	9.7	32378	10.3	15552	9.8	94706	9.9
	3	172372	35.9	97045	30.9	54721	34.4	324138	34.0
	4	192624	40.1	161697	51.5	70260	44.2	424581	44.5
$p < 0.0001$	all	480645	100.0	314233	100.0	159030	100.0	953908	100.0
SPECR	1	75910	15.8	77340	24.6	25888	16.3	179138	18.8
	3	62290	13.0	49404	15.7	19150	12.0	130844	13.7
	4	52183	10.9	30922	9.8	16420	10.3	99525	10.4
	5	20132	4.2	8503	2.7	5460	3.4	34095	3.6
	6	38835	8.1	24674	7.8	13170	8.3	76679	8.0
	7	20707	4.3	17634	5.6	9200	5.8	47541	5.0
	8	17515	3.6	12528	4.0	11208	7.0	41251	4.3
	9	14091	2.9	4885	1.6	2294	1.4	21270	2.2
	10	9163	1.9	7552	2.4	3384	2.1	20099	2.1
	11	36191	7.5	7216	2.3	7281	4.6	50688	5.3
	12	10915	2.3	5461	1.7	3330	2.1	19706	2.1
	13	24470	5.1	5801	1.9	8303	5.2	38574	4.0
	14	8539	1.8	5883	1.9	2469	1.6	16891	1.8
	15	87113	18.1	53544	17.0	29426	18.5	170083	17.8
	16	2591	0.5	2886	0.9	2047	1.3	7524	0.8
$p < 0.0001$	all	480645	100.0	314233	100.0	159030	100.0	953908	100.0
REGION	1	100439	20.9	60762	19.3	36078	22.7	197279	20.7
	2	103729	21.6	64325	20.5	31253	19.6	199307	20.9
	3	173896	36.2	103356	32.9	55115	34.7	332367	34.8
	4	102581	21.3	85790	27.3	36584	23.0	224955	23.6
$p < 0.0001$	all	480645	100.0	314233	100.0	159030	100.0	953908	100.0
SOLO	0	280577	58.4	250090	79.6	109011	68.5	639678	67.1
	1	200068	41.6	64143	20.4	50019	31.4	314230	32.9
$p < 0.0001$	all	480645	100.0	314233	100.0	159030	100.0	953908	100.0

Table 4: Descriptive Statistics by Treatment Groups (Continuous variables)

Variable	Levels	n	$\bar{x}$	s	Min	$\tilde{x}$	Max
TIMEMD	No	480645	22.3	12.8	0.0	19.4	240.0
	Full	314233	21.7	8.8	0.0	19.8	73.3
	Partial	159030	21.9	9.1	0.0	20.0	62.9
	all	953908	22.0	11.0	0.0	19.6	240.0
RETAPPT_pct	No	480645	0.7	0.3	0.0	0.8	1.0
	Full	314233	0.7	0.3	0.0	0.8	1.0
	Partial	159030	0.7	0.3	0.0	0.8	1.0
	all	953908	0.7	0.3	0.0	0.8	1.0
PAYPRIV_pct	No	480645	0.6	0.3	0.0	0.7	1.0
	Full	314233	0.6	0.3	0.0	0.7	1.0
	Partial	159030	0.6	0.3	0.0	0.7	1.0
	all	953908	0.6	0.3	0.0	0.7	1.0
PAYMCARE_pct	No	480645	0.2	0.2	0.0	0.2	1.0
	Full	314233	0.2	0.2	0.0	0.2	1.0
	Partial	159030	0.3	0.2	0.0	0.3	1.0
	all	953908	0.2	0.2	0.0	0.2	1.0
PAYMCAID_pct	No	480645	0.1	0.2	0.0	0.0	1.0
	Full	314233	0.1	0.2	0.0	0.0	1.0
	Partial	159030	0.1	0.2	0.0	0.1	1.0
	all	953908	0.1	0.2	0.0	0.0	1.0
PAYWKCMP_pct	No	480645	0.0	0.1	0.0	0.0	1.0
	Full	314233	0.0	0.1	0.0	0.0	1.0
	Partial	159030	0.0	0.1	0.0	0.0	1.0
	all	953908	0.0	0.1	0.0	0.0	1.0
PAYSELF_pct	No	480645	0.1	0.2	0.0	0.0	1.0
	Full	314233	0.0	0.1	0.0	0.0	1.0
	Partial	159030	0.1	0.2	0.0	0.0	1.0
	all	953908	0.1	0.2	0.0	0.0	1.0
Avg_Patient_Age	No	480645	46.3	18.5	1.4	50.0	84.7
	Full	314233	46.4	17.8	1.8	50.6	85.0
	Partial	159030	48.1	19.2	2.0	53.4	94.3
	all	953908	46.6	18.4	1.4	50.7	94.3
NOCHRON_pct	No	480645	0.5	0.3	0.0	0.4	2.0
	Full	314233	0.4	0.3	0.0	0.4	1.9
	Partial	159030	0.4	0.3	0.0	0.4	1.9
	all	953908	0.5	0.3	0.0	0.4	2.0
TOTCHRON_mean	No	480645	1.1	0.9	0.0	1.0	8.3
	Full	314233	1.3	0.9	0.0	1.2	4.7
	Partial	159030	1.3	0.9	0.0	1.2	4.0
	all	953908	1.2	0.9	0.0	1.1	8.3
HealthEdu_pct	No	480645	0.4	0.3	0.0	0.3	1.0
	Full	314233	0.4	0.3	0.0	0.4	1.0
	Partial	159030	0.4	0.3	0.0	0.4	1.0
	all	953908	0.4	0.3	0.0	0.4	1.0
psweight	No	480645	774.1	510.3	2.8	640.3	3053.8
	Full	314233	1068.0	729.1	9.2	924.8	6477.1
	Partial	159030	2237.7	1358.9	5.8	1970.9	6647.0
	all	953908	1114.9	940.0	2.8	856.0	6647.0

Table 5: Estimated effect of EMR adoption with multinomial propensity score weighted OLS models

	<i>Dependent variable:</i>		
	Health Education	Time Spent with MD	Returned Appointment Rate
	(1)	(2)	(3)
Full EMR	0.034* (0.018)	0.222 (0.532)	-0.031** (0.015)
Partial EMR	0.033 (0.020)	0.189 (0.574)	-0.008 (0.018)
SOLO	-0.007 (0.020)	2.158*** (0.545)	0.023 (0.015)
HMO	0.074* (0.043)	0.647 (0.971)	-0.142*** (0.049)
Community health center	0.007 (0.028)	-3.222*** (0.676)	0.031 (0.023)
Medical/academic health center	-0.015 (0.049)	3.993* (2.081)	0.074* (0.040)
Other hospital	0.037 (0.047)	-1.920*** (0.644)	0.033 (0.029)
Other health care corporation	0.005 (0.035)	0.223 (0.775)	-0.071** (0.030)
Other owner type	0.029 (0.050)	3.438 (2.094)	0.030 (0.052)
MCC less than 3	-0.008 (0.040)	-1.894 (1.319)	0.030 (0.032)
MCC 3-10	-0.048 (0.032)	-4.217*** (1.119)	0.020 (0.028)
MCC greater than 10	-0.063** (0.031)	-5.571*** (1.088)	0.003 (0.028)
factor(VYEAR)2009	0.033* (0.019)	-0.385 (0.528)	0.031* (0.016)
factor(VYEAR)2010	0.075*** (0.021)	0.576 (0.573)	0.033* (0.017)
Constant	0.411*** (0.031)	25.074*** (1.102)	0.679*** (0.026)
Observations	3,619	3,619	3,619
Log Likelihood	-2,048.801	-14,216.760	-1,394.416
Akaike Inf. Crit.	4,127.603	28,463.530	2,818.832

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 6: Estimated effect of EMR adoption with multinomial propensity score weighted OLS models (without covariate controls)

	<i>Dependent variable:</i>		
	Health Education	Time Spent with MD	Returned Appointment Rate
	(1)	(2)	(3)
Full EMR	0.037** (0.018)	-0.038 (0.538)	-0.035** (0.014)
Partial EMR	0.034* (0.020)	0.054 (0.593)	-0.011 (0.018)
Constant	0.401*** (0.010)	21.821*** (0.345)	0.719*** (0.009)
Observations	3,619	3,619	3,619
Log Likelihood	-2,072.498	-14,331.300	-1,423.651
Akaike Inf. Crit.	4,150.996	28,668.600	2,853.302

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 7: Estimated effect of EMR adoption with multinomial propensity score weighted OLS models (with all covariate controls)

	<i>Dependent variable:</i>		
	Health Education	Time Spent with MD	Returned Appointment Rate
	(1)	(2)	(3)
Full EMR	0.034** (0.017)	0.353 (0.472)	−0.020 (0.013)
Partial EMR	0.034* (0.019)	0.213 (0.519)	−0.012 (0.016)
SOLO	0.001 (0.019)	1.384*** (0.480)	0.024* (0.014)
HMO	0.069 (0.043)	0.679 (0.806)	−0.076 (0.047)
Community health center	0.017 (0.034)	−2.525*** (0.909)	0.117*** (0.027)
Medical/academic health center	−0.016 (0.048)	2.618 (2.036)	0.064* (0.034)
Other hospital	0.004 (0.043)	−1.398 (0.882)	0.064** (0.026)
Other health care corporation	−0.010 (0.032)	−0.038 (0.708)	−0.039 (0.026)
Other owner type	0.052 (0.049)	0.382 (1.834)	−0.048 (0.049)
Non-MSA	0.035 (0.026)	1.624** (0.723)	−0.035 (0.022)
MCC less than 3	−0.029 (0.037)	0.218 (1.015)	0.036 (0.029)
MCC 3-10	−0.071** (0.029)	−1.206 (0.793)	0.012 (0.026)
MCC greater than 10	−0.076*** (0.029)	−2.233*** (0.769)	−0.007 (0.027)
Internal medicine	0.005 (0.032)	2.115*** (0.818)	−0.004 (0.028)
Pediatrics	0.180*** (0.039)	−0.528 (1.438)	0.118*** (0.036)
General surgery	−0.030 (0.035)	1.474** (0.683)	0.074*** (0.028)
Obstetrics and gynecology	0.138*** (0.032)	1.529 (0.989)	0.288*** (0.027)
Orthopedic surgery	−0.016 (0.036)	0.736 (0.827)	0.137*** (0.025)
Cardiovascular diseases	−0.046 (0.036)	1.472* (0.840)	0.151*** (0.026)
Dermatology	0.111** (0.046)	0.501 (0.971)	0.179*** (0.029)
Urology	−0.033 (0.035)	1.280 (0.796)	0.246*** (0.023)
Psychiatry	0.065 (0.045)	12.733*** (1.502)	0.373*** (0.027)
Neurology	0.026 (0.042)	11.589*** (1.061)	0.182*** (0.029)
Ophthalmology	−0.053 (0.041)	1.006 (1.028)	0.225*** (0.031)
Otolaryngology	−0.072** (0.036)	0.941 (0.723)	0.098*** (0.029)
Other specialties	0.039 (0.029)	6.978*** (0.920)	0.114*** (0.025)
Oncology	−0.253*** (0.054)	8.111*** (2.221)	0.233*** (0.032)
Midwest	−0.071*** (0.024)	−1.936*** (0.504)	−0.021 (0.010)



Table 8: Estimated effect of full EMR adoption with propensity score weighted OLS models

	<i>Dependent variable:</i>		
	Health Education	Time Spent with MD	Returned Appointment Rate
	(1)	(2)	(3)
Full EMR	0.045** (0.019)	0.312 (0.566)	-0.029* (0.015)
SOLO	0.005 (0.021)	2.401*** (0.622)	0.029* (0.017)
HMO	0.049 (0.043)	0.636 (1.229)	-0.099** (0.049)
Community health center	-0.010 (0.029)	-2.933*** (0.928)	0.006 (0.031)
Medical/academic health center	0.044 (0.056)	4.526* (2.582)	0.061 (0.039)
Other hospital	-0.010 (0.042)	-0.963 (0.903)	0.018 (0.036)
Other health care corporation	0.025 (0.039)	0.406 (0.826)	-0.071** (0.032)
Other owner type	0.037 (0.055)	4.267* (2.413)	-0.015 (0.065)
MCC less than 3	0.006 (0.045)	-3.636** (1.592)	-0.006 (0.033)
MCC 3-10	-0.037 (0.039)	-5.195*** (1.504)	-0.017 (0.028)
MCC greater than 10	-0.080** (0.038)	-6.270*** (1.464)	-0.023 (0.028)
Constant	0.443*** (0.034)	25.762*** (1.363)	0.723*** (0.026)
Observations	2,999	2,999	2,999
Log Likelihood	-1,624.108	-11,843.780	-1,110.281
Akaike Inf. Crit.	3,272.216	23,711.550	2,244.561

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 9: Estimated effect of partial EMR adoption with propensity score weighted OLS models

	<i>Dependent variable:</i>		
	Health Education	Time Spent with MD	Returned Appointment Rate
	(1)	(2)	(3)
Partial EMR	0.026 (0.021)	0.057 (0.606)	-0.002 (0.017)
SOLO	-0.006 (0.023)	3.158*** (0.678)	0.035** (0.018)
HMO	0.117* (0.067)	-0.226 (1.411)	-0.150** (0.075)
Community health center	0.007 (0.033)	-2.921*** (0.748)	0.028 (0.025)
Medical/academic health center	0.086 (0.056)	5.515* (3.314)	0.080* (0.046)
Other hospital	0.028 (0.049)	-2.583*** (0.828)	0.023 (0.035)
Other health care corporation	0.034 (0.044)	-0.055 (0.872)	-0.065* (0.038)
Other owner type	0.093 (0.059)	4.846* (2.793)	-0.007 (0.074)
MCC less than 3	0.017 (0.047)	-2.473 (1.700)	0.008 (0.034)
MCC 3-10	-0.016 (0.033)	-5.378*** (1.308)	0.001 (0.029)
MCC greater than 10	-0.012 (0.034)	-6.828*** (1.295)	-0.016 (0.029)
Constant	0.402*** (0.032)	25.788*** (1.327)	0.718*** (0.027)
Observations	2,473	2,473	2,473
Log Likelihood	-1,399.123	-9,906.268	-915.909
Akaike Inf. Crit.	2,822.247	19,836.540	1,855.819

*Note:*

\* p<0.1; \*\* p<0.05; \*\*\* p<0.01

Table 10: Effect of fully EMR adoption on health care outcomes (PSM)

	<i>Dependent variable:</i>		
	Health Education	Time Spent with MD	Returned Appointment Rate
	(1)	(2)	(3)
Full EMR	0.043*** (0.015)	0.454 (0.401)	-0.007 (0.012)
SOLO	-0.020 (0.017)	2.603*** (0.458)	0.038*** (0.014)
HMO	0.017 (0.044)	1.699 (1.193)	-0.088** (0.037)
Community health center	0.017 (0.027)	-2.204*** (0.730)	-0.022 (0.023)
Medical/academic health center	0.047 (0.044)	5.386*** (1.198)	0.046 (0.037)
Other hospital	0.034 (0.043)	0.270 (1.162)	0.014 (0.036)
Other health care corporation	0.012 (0.030)	1.071 (0.808)	-0.077*** (0.025)
Other owner type	0.046 (0.051)	4.818*** (1.381)	0.015 (0.043)
MCC less than 3	0.031 (0.032)	-1.577* (0.856)	0.022 (0.026)
MCC 3-10	-0.025 (0.026)	-3.191*** (0.702)	-0.005 (0.022)
MCC greater than 10	-0.059** (0.026)	-3.948*** (0.692)	-0.002 (0.021)
Constant	0.423*** (0.026)	23.104*** (0.692)	0.705*** (0.021)
Observations	2,292	2,292	2,292
R <sup>2</sup>	0.014	0.052	0.014
Adjusted R <sup>2</sup>	0.009	0.047	0.009
Residual Std. Error (df = 2280)	0.341	9.206	0.285
F Statistic (df = 11; 2280)	2.939***	11.341***	2.930***

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Table 11: Effect of partially EMR adoption on health care outcomes (PSM)

	<i>Dependent variable:</i>		
	Health Education	Time Spent with MD	Returned Appointment Rate
	(1)	(2)	(3)
Partial EMR	0.006 (0.020)	−0.186 (0.551)	0.022 (0.016)
SOLO	−0.018 (0.022)	2.715*** (0.605)	0.039** (0.018)
HMO	0.154* (0.084)	1.382 (2.271)	−0.132** (0.066)
Community health center	0.086** (0.038)	−2.541** (1.035)	0.0002 (0.030)
Medical/academic health center	0.115* (0.060)	4.279*** (1.641)	0.024 (0.048)
Other hospital	0.079 (0.055)	−2.044 (1.500)	0.023 (0.044)
Other health care corporation	0.077* (0.045)	1.668 (1.235)	−0.051 (0.036)
Other owner type	0.107 (0.074)	1.344 (2.015)	0.008 (0.059)
MCC less than 3	0.007 (0.042)	−1.979* (1.154)	0.018 (0.034)
MCC 3-10	0.004 (0.033)	−4.172*** (0.892)	0.019 (0.026)
MCC greater than 10	−0.010 (0.033)	−5.576*** (0.884)	−0.006 (0.026)
Constant	0.393*** (0.033)	24.928*** (0.885)	0.708*** (0.026)
Observations	1,240	1,240	1,240
R <sup>2</sup>	0.016	0.076	0.013
Adjusted R <sup>2</sup>	0.007	0.068	0.004
Residual Std. Error (df = 1228)	0.349	9.470	0.277
F Statistic (df = 11; 1228)	1.781*	9.214***	1.445

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01