

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Multivariable Adjusted* PCP vs. non-PCP Visit Utilization Rates by Practice Setting Before the Survey Wording Change, 1997-2006 (%)

	Community-Based Practice (ref) PCP n= 5,146 Non-PCP n=1,188	Hospital-Based Practice PCP n=5,536 Non-PCP n=6,456	aOR
Antibiotics			
PCP	48.0	43.3	0.83 [0.66-1.03]
Non-PCP	51.5	55.4	1.17 [0.82-1.68]
CT/MRI			
PCP	5.4	6.6	1.24 [0.91-1.68]
Non-PCP	2.8	6.2	2.25 [1.28-3.95]
X-Ray			
PCP	9.4	10.7	1.16 [0.94-1.43]
Non-PCP	8.4	11.9	1.47 [1.03-2.10]
Specialty Referrals			
PCP	5.7	6.8	1.20 [0.89-1.61]
Non-PCP	3.9	20.1	6.18 [4.11-9.29]

PCP = primary care provider; aOR = adjusted odds ratio

In 2007 the NHAMCS survey changed the question, *“are you the patient’s primary care physician/provider?”* to *“is this clinic the patient’s primary care provider?”*

*Models adjusted for age, sex, race/ethnicity, insurance status, symptom acuity comorbidities, geographic region, and urban location.

eTable 2. Multivariable Adjusted* PCP vs. non-PCP Visit Utilization Rates by Practice Setting After the Survey Wording Change, 2007-2011 (%)

	Community-Based Practice (ref) PCP n=2,767 Non-PCP n=682	Hospital-Based Practice PCP n=2,421 Non-PCP n=1,893	aOR
Antibiotics			
PCP	51.1	49.1	0.92 [0.66-1.28]
Non-PCP	48.5	53.5	1.22 [0.76-1.96]
CT/MRI			
PCP	7.6	8.6	1.14 [0.73-1.77]
Non-PCP	5.3	11.6	2.36 [1.18-4.70]
X-Ray			
PCP	10.1	12.3	1.25 [0.87-1.80]
Non-PCP	8.1	16.5	2.24 [1.16-4.32]
Specialty Referrals			
PCP	10.8	14.8	1.44 [1.07-1.94]
Non-PCP	8.5	34.0	5.53 [3.48-8.78]

PCP = primary care provider; aOR = adjusted odds ratio

In 2007 the NHAMCS survey changed the question, “are you the patient’s primary care physician/provider?” to “is this clinic the patient’s primary care provider?”

*Models adjusted for age, sex, race/ethnicity, insurance status, symptom acuity comorbidities, geographic region, and urban location.

eTable 3. Multivariable Adjusted* PCP vs. non-PCP Visit Utilization Rates by Practice Setting Among Established Patients Only, 1997-2011 (%)

	Community-Based Practice (ref) PCP n=7,530 Non-PCP n=1,363	Hospital-Based Practice PCP n=7,487 Non-PCP n=5,455	aOR
Antibiotics			
PCP	49.0	45.7	0.88 [0.72-1.07]
Non-PCP	47.9	56.0	1.38 [0.98-1.95]
CT/MRI			
PCP	6.8	9.0	1.21 [0.92-1.59]
Non-PCP	3.3	8.3	2.64 [1.57-4.42]
X-Ray			
PCP	10.0	12.8	1.22 [0.99-1.50]
Non-PCP	6.3	12.1	2.05 [1.44-2.91]
Specialty Referrals			
PCP	7.4	9.2	1.27 [1.02-1.59]
Non-PCP	5.0	26.8	6.92 [4.98-9.61]

PCP = primary care provider; aOR = adjusted odds ratio

*Models adjusted for age, sex, race/ethnicity, insurance status, symptom acuity comorbidities, geographic region, and urban location.

eTable 4. Comorbidities* Stratified by Practice Location, 2005-2011 (%)

	Community- Based Practice (n=4,791) (ref)	Hospital-Based Practices (n=6,515)	P-value
Arthritis	17.3	12.5	.001
Asthma	6.8	8.6	.02
Cancer	2.5	2.5	.97
Cerebrovascular Disease	1.3	0.69	.02
Congestive Heart Failure	0.30	0.25	.20
Chronic Renal Failure	0.94	0.58	.13
COPD	3.6	3.4	.26
Depression	12.6	13.7	.48
Diabetes	3.5	3.2	.16
Hyperlipidemia	19.0	14.0	.005
Hypertension	29.0	25.0	.05
Ischemic Heart Disease	2.5	1.3	.002
Obesity	10.0	8.5	.16
Osteoporosis	3.1	2.4	.24

COPD = Chronic obstructive pulmonary disease

*Chart-verified comorbidity data is available between 2005-2011 in NHAMCS and between 2005-2013 in NAMCS.

eTable 5. Unadjusted Utilization Time-Trends* Among Hospital-Based Practices vs. Community-Based Practices, 1997-2011

Year	1997-1998	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011	P-Value for Trend
Antibiotics									
Offices %	46.5	41.5	49.1	53.3	51.5	51.1	49.4	51.6	.100
Offices n	467	450	410	412	472	493	472	213	
Hospitals %	50.3	45.8	50.0	49.2	60.1	47.3	54.6	65.2	.050
Hospitals n	996	1037	869	798	857	639	589	238	
CT/MRI									
Offices %	4.3	5.8	5.3	4.7	6.8	9.2	7.5	5.9	.003
Offices n	784	775	814	878	902	922	963	405	
Hospitals %	4.8	4.3	6.1	8.4	10.3	10.3	11.2	9.7	<.001
Hospitals n	1618	1621	1434	1454	1353	1160	1240	466	
X-Ray									
Offices %	11.0	10.3	8.1	8.3	10.6	11.6	9.0	10.7	.88
Offices n	1028	1012	999	1057	1140	1173	1175	539	
Hospitals %	13.1	11.5	10.6	11.3	12.3	12.2	17.1	17.2	.081
Hospitals n	2107	2203	1867	1834	1857	1481	1526	576	
Specialty Referrals									
Offices %	NA	5.3	8.3	8.2	8.1	10.3	11.0	9.8	<.001
Offices n	1243	1222	1217	1283	1369	1406	1430	613	
Hospitals %	NA	15.5	16.4	20.8	24.3	24.9	22.5	24.5	<.001
Hospitals n	2609	2653	2292	2237	2201	1792	1822	700	

*Percentages may not match the value of the numerator divided by the denominator because percentages are population weighted. In addition, the referral variable did not appear in the NAMCS and NHAMCS survey instrument until 1999.