

**Pulmonary Medicine, Infectious Disease and Critical Care Consultants Medical Group, Inc. (PMA) PRT:  
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<b>Responses to PRT Questions or Where to Find Answers to Questions</b>	
Q1	<b><i>How distinct are COPD and Asthma patients clinically, and by N of comorbidities/chronic conditions?</i></b>
	Tables 1A and 1B provide information on number and percentage of beneficiaries with COPD and asthma with selected comorbidities/chronic conditions. Tables 2A-2C and 3A-3B provide information to determine the extent to which beneficiaries with COPD and Asthma differ in terms of health care utilization and expenditures. Note that these tables differ in how the populations are defined. Table 2A and 3A provide utilization and expenditure estimates for beneficiaries newly diagnosed with COPD and asthma in 2014, respectively. Tables 2B and 3B provide estimates for beneficiaries with COPD (Table 2B) and Asthma (Table 3B) for calendar year 2015 for patients who were diagnosed with these conditions prior to 2015. Table 2C and 3C provide Medicare utilization and reimbursement estimates for beneficiaries with COPD and asthma, respectively, for the one-year period following diagnosis (with diagnosis occurring in 2014) - that is, for the beneficiaries shown in Tables 2A and 3A.
Q2	<b><i>Of the patients with COPD, how many and what percentage also have asthma?</i></b>
	Table 4 provides information on the number of Medicare beneficiaries with COPD and Asthma. Based on these data it appears that approximately 47% of beneficiaries with COPD also have asthma as a co-morbidity. However, it is important to note that this proportion may differ depending on how the population is defined. For example, based on Table 2A, it would appear that among beneficiaries newly diagnosed with COPD, 14% have an asthma co-morbidity.
Q3	<b><i>What percentage of ED visits for COPD patients result in admissions?</i></b>
	Approximately 38% of ED visits for COPD patients result in a hospital admission (Refer to Table 2B). Among those newly diagnosed with COPD, 42% of ED visits result in an admission.
Q4	<b><i>What percentage of ED visits for asthma patients result in admissions?</i></b>
	Approximately 32% of ED visits (Refer to Table 3B.) However, for the population newly diagnosed with asthma this proportion is higher, 37% (Refer to Table 3A).
Q5	<b><i>Is their overall per capita Medicare spending for COPD valid?</i></b>
	The PMA proposal estimates Medicare spending for COPD at \$35,396. Our estimates suggest this total is \$28,752. This latter estimate includes annual Part A & B costs of \$24,672 (estimates of Part A & B costs shown in Table 2B have been annualized) and annual Part D costs of \$4,080 (estimates of Part D drug costs shown in Table 4 have been annualized). Note, however, that the estimates generated for the PRT are based on all patients with COPD whereas PMA estimates appear to be generated for the population with 2+ chronic conditions.
Q6	<b><i>What is the mean and distribution (median, 25th and 75th percentile) of Part A, Part B, and Part D spending for an ED visit without an admission and for an ED visit with an admission, for COPD and for asthma patients?</i></b>
	Distribution of spending for Medicare Parts A & B combined are shown in Table 5. Part D spending associated with an ED visit is difficult to isolate; we might be able to trace a prescribing physician back to the attending physician in the ED claim, but it is likely that the drugs involved – antibiotics, for example – are a fairly small part of the total cost.
Q7	<b><i>Is the applicant's assumption that Part B expenses are 25% of Part A expenses for an admission realistic for admissions due to COPD and to asthma?</i></b>

Responses to PRT Questions or Where to Find Answers to Questions	
	The ratios of Part B to Part A expenses for an inpatient admission are as follows (Refer to Table 6):
	COPD with MCC = 14.9%
	COPD with CC = 26.0%
	COPD without CC/MCC = 19.6%
	Bronchitis & asthma with CC/MCC = 14.4%
	Bronchitis & asthma without CC/MCC = 15.1%
Q8	<b><i>Given an admit for COPD or for asthma, what is the percent with respiratory diagnosis and with Septicemia?</i></b>
	Among patients with COPD and asthma, septicemia is listed as a secondary diagnosis in 1% or fewer admissions. (Refer to table 7).
Q9	<b><i>What is MV and is expense from it important?</i></b>
	MV refers to mechanical ventilation. Distribution of length of stay and Medicare reimbursement associated with inpatient admissions for COPD patients with septicemia and MV are noted in Table 8. The specific proportion of reimbursement attributable to MV cannot be determined.
Q10	<b><i>What percentage of ED visits and admissions are primarily due to COPD or asthma vs. some other condition but COPD or asthma was a complication condition?</i></b>
	Table 9 provides information on the proportion of ED visits and inpatient stays for beneficiaries with COPD for which COPD is the principal or secondary diagnostic code, as well as on the proportion of ED visits and inpatient stays for beneficiaries with asthma for which asthma is the principal or secondary diagnostic code. Results indicate that these condition are listed in about one-half or more of inpatient stays and a third of ED visits. However, the frequency with which these conditions appear as the principal diagnosis is relatively small.
Q11	<b><i>Telemonitoring works on a small, sick subset of COPD patients. It would be helpful to understand how big is that subset using a claims-based method to define the denominator.</i></b>
	Tables 10A-C provide information on utilization and reimbursement of telemonitoring services. As indicated in Table 10B, 0.5% or fewer of beneficiaries with COPD or asthma utilized telemedicine services in 2015. As a proportion of physician and outpatient reimbursement, between 2.7% and 3.9% of reimbursement was associated with telemedicine services. These tables are limited by the extent to which telemedicine services are identified with CPT or HCPCS codes and the extent to which the codes are billed correctly.

**Table 1A: Number of Chronic Conditions, Patients with COPD and Asthma, 2015**

Chronic Conditions (N)	All COPD		COPD/No Asthma		All Asthma		Asthma/No COPD		COPD-Asthma	
	N	%	N	%	N	%	N	%	N	%
1	70,751	1.69	70,751	3.05	52,984	1.73	52,984	4.46	0	0.00
2	174,104	4.15	146,183	6.30	134,007	4.38	106,086	8.93	27,921	1.49
3	288,956	6.89	221,943	9.56	215,981	7.06	148,968	12.54	67,013	3.58
4	394,508	9.41	281,189	12.12	290,195	9.49	176,876	14.89	113,319	6.06
5	468,218	11.17	305,858	13.18	341,250	11.16	178,890	15.06	162,360	8.68
6	496,003	11.83	295,493	12.73	356,914	11.67	156,404	13.17	200,510	10.71
7	489,393	11.67	266,765	11.49	347,435	11.36	124,807	10.51	222,628	11.90
8	456,559	10.89	227,897	9.82	321,316	10.50	92,654	7.80	228,662	12.22
9	404,239	9.64	183,840	7.92	284,249	9.29	63,850	5.38	220,399	11.78
10	335,178	7.99	135,870	5.85	240,638	7.87	41,330	3.48	199,308	10.65
11	254,563	6.07	90,664	3.91	187,477	6.13	23,578	1.99	163,899	8.76
12	172,623	4.12	52,091	2.24	133,066	4.35	12,534	1.06	120,532	6.44
13	102,960	2.46	26,477	1.14	82,012	2.68	5,529	0.47	76,483	4.09
14	52,182	1.24	10,887	0.47	43,526	1.42	2,231	0.19	41,295	2.21
15	22,043	0.53	3,793	0.16	18,943	0.62	693	0.06	18,250	0.98
16	7,560	0.18	1,022	0.04	6,710	0.22	172	0.01	6,538	0.35
17	2,075	0.05	220	0.01	1,881	0.06	26	<0.00	1,855	0.10
18	429	0.01	36	<0.00	401	0.01	8	<0.00	393	0.02
19	78	<0.00	5	<0.00	74	<0.00	1	<0.00	73	<0.00
20	11	<0.00	0	0.00	11	<0.00	0	0.00	11	<0.00

Source: CCW VRDC 100% Chronic Conditions File, 2015

**Notes:** Includes FFS Beneficiaries with Medicare Part A, B. Excludes beneficiaries with ESRD and those residing outside the 50 States or DC. Chronic conditions in the CCW are based on diagnostic criteria; flags take one of four values: 0 - diagnostic criteria are not met and there are insufficient months in the lookback period to determine the presence of the condition; 2 - diagnostic criteria are not met, and there are sufficient months in the lookback period to determine the presence of the condition, 1 & 3 - diagnostic criteria are met, whether or not there are sufficient months in the lookback period. In this table, the presence of a condition is equated to a year-end condition flag value of 1 or 3.

**Table 1B: Presence of Chronic Conditions, Medicare Fee-for-Service Beneficiaries with COPD, Asthma and COPD-Asthma, 2015**

Chronic Conditions (CC)	All COPD N = 4,192,433			COPD, No Asthma N = 2,320,984			All Asthma N = 3,059,070			Asthma, No COPD N = 1,187,621			COPD-Asthma N = 1,871,449		
	Has CC (Percent)	Does not have CC (Percent)	Cannot determine (percent)	Has CC (Percent)	Does not have CC (Percent)	Cannot determine (percent)	Has CC (Percent)	Does not have CC (Percent)	Cannot determine (percent)	Has CC (Percent)	Does not have CC (Percent)	Cannot determine (percent)	Has CC (Percent)	Does not have CC (Percent)	Cannot determine (percent)
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Atrial Fib.	17.1	73.6	9.3	15.5	75.1	9.5	15.0	75.0	10.0	8.6	80.0	11.5	19.0	71.8	9.2
Alzheimer's	6.5	72.7	20.8	6.3	73.0	20.8	5.3	71.2	23.6	3.0	69.1	28.0	6.8	72.5	20.8
Alzheimer's or Senile Dementia	18.9	62.5	18.6	17.5	63.6	18.9	15.9	62.5	21.6	8.6	64.6	26.8	20.5	61.2	18.4
AMI	2.6	87.2	10.2	2.2	87.6	10.2	2.3	86.9	10.8	1.0	87.1	12.0	3.1	86.8	10.1
Anemia	41.4	52.1	6.5	37.0	56.1	7.0	40.5	52.5	7.0	30.4	61.0	8.6	46.9	47.2	5.9
Asthma	44.6	49.6	5.8	0.0	89.6	10.4	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0
Breast Cancer	3.7	86.2	10.2	3.3	86.5	10.2	4.2	85.1	10.7	4.5	83.9	11.7	4.1	85.8	10.1
Cataract	16.4	74.3	9.4	15.8	74.7	9.5	17.7	72.5	9.9	18.5	70.6	10.9	17.1	73.7	9.2
CHF	38.5	50.6	10.9	34.0	54.5	11.6	33.7	53.2	13.1	17.1	65.1	17.9	44.2	45.7	10.1
Chronic kidney disease	36.5	52.2	11.3	33.1	55.1	11.8	33.6	53.4	13.1	22.4	60.7	16.9	40.6	48.8	10.6
COPD	100.0	0.0	0.0	100.0	0.0	0.0	61.2	34.1	4.7	0.0	87.9	12.1	100.0	0.0	0.0
Colorectal cancer	2.1	87.6	10.2	2.0	87.7	10.3	1.9	87.3	10.9	1.3	86.8	11.9	2.3	87.5	10.2
Depression	32.4	60.6	7.1	27.6	64.9	7.6	35.1	57.8	7.2	30.0	61.6	8.4	38.3	55.3	6.4
Diabetes	39.3	50.8	10.0	36.4	53.1	10.5	39.6	49.3	11.0	34.7	51.6	13.7	42.8	47.9	9.4
Endometrial cancer	0.4	89.2	10.4	0.3	89.3	10.4	0.5	88.5	11.0	0.6	87.4	12.0	0.5	89.2	10.3
Glaucoma	8.4	81.7	9.9	8.1	82.0	10.0	9.4	80.2	10.4	10.3	78.3	11.4	8.8	81.4	9.8
Hip/pelvic fracture	1.9	87.8	10.3	1.6	88.1	10.3	1.7	87.4	10.9	0.8	87.2	12.0	2.3	87.5	10.2
Hyperlipidemia	60.6	34.1	5.3	57.3	36.9	5.8	61.3	33.3	5.4	55.9	37.5	6.6	64.7	30.6	4.7
Benign prostatic hyperplasia	11.3	79.3	9.5	10.6	79.8	9.6	9.7	80.1	10.2	6.0	82.5	11.5	12.1	78.6	9.3
Hypertension	79.6	17.7	2.8	76.0	20.7	3.3	78.8	18.4	2.9	70.5	25.4	4.1	84.0	13.9	2.1
Hypothyroidism	21.2	70.0	8.8	19.3	71.7	9.0	22.9	68.0	9.1	21.8	68.1	10.1	23.6	67.9	8.5
Ischemic heart disease	52.4	38.6	9.0	49.3	41.2	9.5	46.1	42.6	11.3	29.8	54.3	15.9	56.4	35.3	8.4
Lung cancer	5.3	84.8	9.9	5.2	84.9	10.0	3.5	85.7	10.7	0.8	87.3	12.0	5.3	84.8	9.9
Osteoporosis	10.4	80.0	9.6	9.0	81.3	9.8	10.9	79.0	10.2	8.6	80.1	11.3	12.3	78.3	9.4
Prostate cancer	3.8	86.1	10.2	3.9	86.0	10.2	3.2	86.0	10.8	2.3	85.8	11.9	3.7	86.2	10.1
Rheumatoid/Osteoarthritis	44.9	44.6	10.5	40.3	48.5	11.2	48.5	40.4	11.1	45.1	41.5	13.4	50.7	39.8	9.5
Stroke	7.9	82.4	9.7	6.9	83.3	9.8	7.6	82.1	10.3	4.9	83.5	11.6	9.2	81.2	9.6

Source: CCW VRDC 100% Chronic Conditions File

Notes: Includes FFS Beneficiaries with Medicare Part A, B. Excludes beneficiaries with ESRD and those residing outside the 50 States or DC. Chronic conditions in the CCW are based on diagnostic criteria; flags take one of four values: 0 - diagnostic criteria are not met and there are insufficient months in the lookback period to determine the presence of the condition; 2 - diagnostic criteria are not met, and there are sufficient months in the lookback period to determine the presence of the condition, 1 & 3 - diagnostic criteria are met, whether or not there are sufficient months in the lookback period. In this table, the presence of a condition is equated to a year-end condition flag value of 1 or 3.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

**Table 2A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with COPD, 2014**

<b>Measure</b>	<b>All Beneficiaries</b>	<b>Without Asthma as a comorbidity</b>	<b>With Asthma as a comorbidity</b>	<b>All Beneficiaries</b>	<b>Without Asthma as a comorbidity</b>	<b>With Asthma as a comorbidity</b>
Number of beneficiaries	36,566	31,481	5,085			
Months of eligibility in 2014	422,870	363,052	59,818			
<b>Utilization</b>	<b>Events per 1,000 beneficiary months</b>			<b>Total number of events</b>		
E&M visits (excludes FQHC/RHC/outpatient)	2,368.4	2,296.5	2,804.9	1,001,543	833,757	167,786
Primary care physicians	922.2	900.4	1,055.0	389,988	326,883	63,105
Other physicians	1,082.1	1,042.4	1,323.0	457,605	378,463	79,142
Other practitioners	323.1	314.2	377.2	136,633	114,070	22,563
Other Part B providers	41.0	39.5	49.8	17,317	14,341	2,976
Acute hospital inpatient stays	84.6	82.4	97.7	35,772	29,925	5,847
Related to COPD <sup>(2)</sup>	50.6	50.4	52.2	21,411	18,288	3,123
For septicemia	5.9	5.9	5.4	2,478	2,152	326
Emergency Department visits	145.0	136.7	195.5	61,332	49,638	11,694
Visits leading to an inpatient admission	60.2	58.2	72.0	25,444	21,138	4,306
Outpatient ED visits	84.9	78.5	123.5	35,888	28,500	7,388
Emergency Department visits related to COPD	65.6	63.1	81.2	27,749	22,893	4,856
Visits leading to an inpatient admission	37.0	36.4	40.6	15,628	13,199	2,429
Outpatient ED visits	28.7	26.7	40.6	12,121	9,694	2,427
Observation stays	21.8	20.9	27.5	9,226	7,583	1,643
Observation stays leading to an inpatient admission	6.9	6.6	9.0	2,933	2,393	540
Outpatient observation stays	14.9	14.3	18.4	6,293	5,190	1,103
Observation stays related to COPD	12.6	12.2	14.9	5,337	4,444	893
Stays leading to an inpatient admission	3.8	3.8	4.2	1,626	1,372	254
Outpatient stays	8.8	8.5	10.7	3,711	3,072	639
SNF stays	24.3	24.4	23.6	10,272	8,859	1,413
Home health visits (unique service dates)	544.7	532.9	616.2	230,326	193,465	36,861
Hospice admissions	6.2	6.7	3.3	2,638	2,442	196

**Table 2A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with COPD, 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>E&amp;M Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	197.60	192.06	231.20	83,557,827	69,727,866	13,829,961
Primary-care physician	71.92	70.10	82.95	30,411,192	25,449,342	4,961,850
Other physicians	106.46	103.26	125.88	45,018,743	37,488,689	7,530,054
Other practitioner	17.34	16.90	19.97	7,330,921	6,136,132	1,194,789
Other provider	1.88	1.80	2.40	796,971	653,703	143,268
By specialty code						
Physician / Internal medicine	50.16	48.71	58.94	21,210,498	17,685,079	3,525,419
Physician / Family practice	19.60	19.24	21.76	8,288,625	6,986,876	1,301,749
Physician / Cardiology	15.83	15.71	16.52	6,692,271	5,703,853	988,418
Physician / Emergency medicine	14.71	13.93	19.49	6,222,235	5,056,214	1,166,020
Physician / Pulmonary disease	14.46	13.69	19.16	6,114,540	4,968,556	1,145,985
Nurse practitioner	7.79	7.68	8.45	3,295,001	2,789,398	505,603
Physician / Nephrology	5.24	5.31	4.84	2,216,880	1,927,337	289,543
Physician / Infectious disease	5.02	4.92	5.64	2,123,295	1,785,913	337,382
Physician / Ophthalmology	4.99	4.86	5.77	2,109,943	1,764,924	345,019
Physician / Hematology/oncology	4.93	5.00	4.52	2,086,753	1,816,325	270,428
Physician / Psychiatry	4.56	4.20	6.73	1,927,391	1,524,576	402,816
Physician / Neurology	4.18	4.11	4.60	1,767,168	1,492,135	275,033
Physician / Physical medicine/rehab	4.01	3.96	4.31	1,694,482	1,436,957	257,525
Physician assistant	3.88	3.71	4.86	1,639,467	1,348,684	290,782
Physician / Gastroenterology	3.61	3.52	4.15	1,524,603	1,276,351	248,252
Physician / General surgery	3.01	3.03	2.87	1,272,716	1,100,839	171,877
Physician / Critical care (intensivists)	2.77	2.79	2.68	1,173,188	1,012,781	160,407
Physician / Orthopedic surgery	2.46	2.33	3.27	1,039,786	844,308	195,478
Physician / Urology	2.40	2.43	2.21	1,013,495	881,061	132,434
Podiatry	2.03	2.02	2.09	856,333	731,550	124,782
Optometry	1.88	1.86	1.98	795,123	676,663	118,460
Clinical psychologist	1.80	1.71	2.32	760,495	621,548	138,946
Physician / Otolaryngology	1.49	1.35	2.34	629,088	489,279	139,810
Physician / Endocrinology	1.35	1.31	1.62	572,608	475,541	97,067
Physician / Medical oncology	1.33	1.35	1.20	563,479	491,583	71,896

**Table 2A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with COPD, 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>E&amp;M Reimbursement Related to COPD</b>		<b>PBPM (\$)</b>		<b>Total (\$)</b>		
All Physician & Practitioners	34.68	33.33	42.86	14,665,274	12,101,457	2,563,817
Primary Care Physician	14.35	13.84	17.41	6,066,078	5,024,889	1,041,189
Other physicians	18.83	18.04	23.61	7,961,290	6,548,742	1,412,548
Other practitioners	1.49	1.44	1.84	632,125	522,162	109,963
Other providers	0.01	0.02	0.002	5,781	5,664	117
By specialty code						
Physician / Internal medicine	10.84	10.44	13.27	4,584,721	3,790,881	793,840
Physician / Pulmonary disease	8.51	8.23	10.20	3,598,067	2,987,670	610,397
Physician / Emergency medicine	3.77	3.49	5.46	1,594,419	1,268,067	326,352
Physician / Family practice	3.21	3.11	3.80	1,356,970	1,129,474	227,496
Physician / Cardiology	2.48	2.37	3.12	1,047,005	860,453	186,552
Physician / Critical care (intensivists)	1.57	1.57	1.58	663,185	568,546	94,639
Nurse practitioner	0.98	0.94	1.19	413,701	342,400	71,302
Physician / Infectious disease	0.94	0.87	1.35	397,702	316,756	80,946
Physician assistant	0.50	0.47	0.64	210,183	171,748	38,435
Physician / Neurology	0.26	0.26	0.27	111,325	95,331	15,993
Physician / General surgery	0.26	0.27	0.23	110,515	96,790	13,725
Physician / General practice	0.19	0.19	0.21	79,533	67,208	12,326
Physician / Anesthesiology	0.13	0.12	0.17	55,176	44,852	10,324
Physician / Nephrology	0.12	0.12	0.13	51,172	43,460	7,712
Physician / Geriatric medicine	0.11	0.10	0.13	44,853	37,326	7,527
Physician / Physical medicine/rehab	0.09	0.08	0.09	36,300	30,694	5,607
Physician / Hematology/oncology	0.08	0.07	0.12	34,019	26,931	7,088
Physician / Cardiac electrophysiology	0.08	0.07	0.14	32,064	23,873	8,191
Physician / Otolaryngology	0.07	0.06	0.12	30,606	23,596	7,010
Physician / Gastroenterology	0.06	0.06	0.06	26,350	22,527	3,823
Physician / Allergy/immunology	0.05	0.02	0.24	23,255	8,805	14,450
Physician / Cardiac surgery	0.05	0.05	0.06	20,431	16,939	3,492
Physician / Thoracic surgery	0.05	0.05	0.02	19,576	18,553	1,023
Physician / Psychiatry	0.04	0.04	0.04	17,803	15,486	2,317
Physician / Hospice and palliative care	0.03	0.03	0.03	13,365	11,536	1,830



**Table 2A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with COPD, 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	107.32	106.20	114.08	45,381,702	38,557,810	6,823,893
Primary Care Physician	2.69	2.55	3.50	1,136,282	927,174	209,108
Other physicians	80.62	80.47	81.52	34,091,755	29,215,534	4,876,221
Other practitioners	15.11	14.65	17.85	6,388,053	5,320,133	1,067,920
Other providers	8.90	8.52	11.21	3,765,612	3,094,968	670,644
By specialty code						
Physician / Orthopedic surgery	8.80	8.46	10.84	3,719,434	3,071,185	648,248
Physician / Radiation oncology	8.74	9.32	5.21	3,695,600	3,383,991	311,609
Ambulatory surgical center	8.46	8.10	10.64	3,578,567	2,942,203	636,364
Physician / Anesthesiology	8.36	8.20	9.33	3,535,977	2,978,149	557,827
Physician / General surgery	6.37	6.34	6.58	2,694,628	2,300,955	393,673
Physician / Cardiology	5.55	5.64	4.98	2,345,128	2,047,331	297,797
Physician / Ophthalmology	4.97	4.84	5.74	2,100,410	1,757,185	343,225
Physical therapist in private practice	4.77	4.44	6.75	2,015,997	1,612,090	403,906
CRNA	4.74	4.71	4.94	2,004,769	1,709,384	295,385
Physician / Dermatology	4.06	4.09	3.88	1,716,487	1,484,152	232,335
Physician / Thoracic surgery	3.27	3.31	3.06	1,383,127	1,200,217	182,910
Physician / Cardiac surgery	3.08	3.22	2.22	1,301,602	1,168,938	132,663
Physician / Neurosurgery	2.98	2.82	3.99	1,261,239	1,022,801	238,438
Physician / Gastroenterology	2.92	2.82	3.53	1,235,781	1,024,638	211,143
Podiatry	2.92	2.87	3.23	1,234,706	1,041,315	193,391
Physician / Urology	2.84	2.91	2.45	1,202,558	1,056,072	146,486
Physician / Vascular surgery	2.80	3.00	1.61	1,184,766	1,088,241	96,525
Physician / Otolaryngology	2.55	2.30	4.08	1,079,804	835,918	243,886
Physician / Hematology/oncology	2.10	2.18	1.65	889,815	790,944	98,871
Physician / Diagnostic radiology	1.99	2.05	1.63	841,479	744,002	97,477
Physician assistant	1.46	1.47	1.41	618,508	534,064	84,443
Physician / Internal medicine	1.40	1.35	1.72	591,886	488,883	103,003
Physician / Family practice	1.07	1.03	1.35	452,984	372,401	80,583
Physician / Plastic/recon. surgery	0.98	0.94	1.24	415,010	340,688	74,322
Physician / Cardiac electrophysiology	0.81	0.82	0.76	343,616	297,944	45,672
Physician / Pulmonary disease	0.81	0.80	0.87	340,837	289,048	51,789

**Table 2A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with COPD, 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement Related to COPD</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	1.92	1.87	2.21	812,160	679,705	132,455
Primary Care Physician	0.19	0.18	0.21	78,462	66,176	12,286
Other physicians	1.53	1.50	1.73	649,100	545,869	103,231
Other practitioners	0.19	0.18	0.28	81,134	64,584	16,549
Other providers	0.01	0.01	0.01	3,464	3,075	390
By specialty code						
Physician / Pulmonary disease	0.32	0.31	0.39	136,444	113,382	23,061
Physician / Cardiology	0.29	0.28	0.37	122,898	100,705	22,193
Physician / Anesthesiology	0.20	0.19	0.23	83,768	69,776	13,992
Physician / Emergency medicine	0.16	0.16	0.18	69,692	59,046	10,645
CRNA	0.12	0.12	0.16	52,161	42,729	9,432
Physician / Internal medicine	0.12	0.12	0.11	49,715	43,247	6,468
Physician / General surgery	0.12	0.12	0.06	48,898	45,166	3,732
Physician / Critical care (intensivists)	0.10	0.10	0.12	42,634	35,626	7,008
Physician / Otolaryngology	0.10	0.10	0.11	41,759	35,441	6,318
Physician / Thoracic surgery	0.08	0.07	0.10	31,832	25,721	6,111
Physician / Family practice	0.06	0.06	0.07	25,938	21,658	4,279
Physician / Cardiac surgery	0.05	0.06	0.01	20,418	19,984	434
Physician / Diagnostic radiology	0.04	0.04	0.02	16,150	14,846	1,304
Physician / Cardiac electrophysiology	0.03	0.03	0.03	11,938	9,952	1,985
Physical therapist in private practice	0.03	0.02	0.08	11,120	6,343	4,776
Physician assistant	0.02	0.02	0.02	8,511	7,517	993
Physician / Infectious disease	0.02	0.01	0.04	6,523	4,331	2,191
Nurse practitioner	0.01	0.01	0.02	5,984	4,740	1,244
Physician / Interventional radiology	0.01	0.01	0.01	2,919	2,397	522
Ambulatory surgical center	0.01	0.01	0.01	2,822	2,432	390
Physician / General practice	0.01	<0.01	0.03	2,762	1,224	1,538
Physician / Gastroenterology	0.01	<0.01	0.01	2,435	1,562	873
Physician / Vascular surgery	<0.01	0.01	0.00	1,822	1,822	0
Physician / Neurology	<0.01	<0.01	0.01	1,564	1,209	355
Physician / Orthopedic surgery	<0.01	<0.01	0.01	1,554	1,039	515
Occupational therapist in private practice	<0.01	<0.01	0.00	1,513	1,513	0
Physician / Allergy/immunology	<0.01	<0.01	0.01	874	167	707

**Table 2A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with COPD, 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Other Part B Reimbursement</b>				<b>PBPM (\$)</b>		<b>Total (\$)</b>
Outpatient Emergency Department	26.48	24.61	37.85	11,198,099	8,933,693	2,264,407
Related to COPD	11.43	10.69	15.96	4,835,388	3,880,928	954,461
Lab and tests	47.85	47.44	50.32	20,234,910	17,224,877	3,010,033
Part B drugs	0.56	0.60	0.33	238,295	218,760	19,534
Durable Medical Equipment	35.78	33.45	49.97	15,132,067	12,142,931	2,989,136
Other Part B services	260.91	261.24	258.92	110,332,380	94,844,344	15,488,037
<b>Part A Reimbursement</b>				<b>PBPM (\$)</b>		<b>Total (\$)</b>
Inpatient	1,158.45	1,142.24	1,256.85	489,873,642	414,691,647	75,181,995
Related to COPD	771.42	773.00	761.85	326,210,282	280,638,229	45,572,053
Skilled Nursing Facility	258.00	260.23	244.46	109,101,457	94,478,088	14,623,368
Home Health	107.42	104.86	122.99	45,425,358	38,068,428	7,356,929
Hospice	36.05	39.22	16.79	15,244,540	14,240,110	1,004,430
<b>Total Reimbursement</b>				<b>PBPM (\$)</b>		<b>Total (\$)</b>
Part A and B	2,312.41	2,286.16	2,471.74	977,848,468	829,994,165	147,854,303
Part A	1,559.92	1,546.55	1,641.09	659,644,996	561,478,273	98,166,723
Part B	752.49	739.61	830.65	318,203,472	268,515,892	49,687,580

Source: Medicare Part A & B 5-percent Limited Data Set, 2015.

**Notes:** Includes FFS Beneficiaries with Medicare Part A, B. Excludes beneficiaries with ESRD and those residing outside the 50 States or DC. To be included, the beneficiary must have had some months of FFS eligibility during the year prior to the earliest diagnosis supporting the condition, and this earliest date must have been in 2014.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

Identification of COPD-related claim or lines contain a diagnosis code identified as a "trigger," "relevant," or "sequelae" diagnosis for COPD in the Episode Grouper for Medicare.

Evaluation and management services defined by BETOS code Mxx.

**Table 2B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with COPD, 2015**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
Number of beneficiaries	150,339	80,149	70,190			
Months of eligibility in 2014	1,712,270	884,669	827,601			
<b>Utilization</b>	<b>Events per 1,000 beneficiary months</b>			<b>Total number of events</b>		
E&M visits (excludes FQHC/RHC/outpatient)	2,334.5	1,898.9	2,800.1	3,997,264	1,679,863	2,317,401
Primary care physicians	896.0	712.6	1,092.0	1,534,175	630,433	903,742
Other physicians	1,025.1	838.1	1,224.9	1,755,192	741,455	1,013,737
Other practitioners	369.0	310.3	431.7	631,852	274,556	357,296
Other Part B providers	44.4	37.8	51.5	76,045	33,419	42,626
Acute hospital inpatient stays	76.2	55.2	98.5	130,390	48,845	81,545
Related to COPD	58.4	40.7	77.4	100,041	35,983	64,058
For septicemia	6.5	5.3	7.8	11,170	4,704	6,466
Emergency Department visits	151.2	111.1	194.1	258,906	98,280	160,626
Visits leading to an inpatient admission	58.1	41.3	76.0	99,413	36,556	62,857
Outpatient ED visits	93.1	69.8	118.1	159,493	61,724	97,769
Emergency Department visits related to COPD	91.6	61.8	123.5	156,828	54,647	102,181
Visits leading to an inpatient admission	45.3	30.9	60.6	77,488	27,343	50,145
Outpatient ED visits	46.3	30.9	62.9	79,340	27,304	52,036
Observation stays	23.3	17.0	30.3	39,828	14,781	25,047
Observation stays leading to an inpatient admission	7.3	4.9	9.8	12,455	4,359	8,096
Outpatient observation stays	16.0	11.8	20.5	27,373	10,422	16,951
Observation stays related to COPD	17.1	11.5	23.1	29,228	10,132	19,096
Stays leading to an inpatient admission	5.4	3.4	7.4	9,169	3,034	6,135
Outpatient stays	11.7	8.0	15.7	20,059	7,098	12,961
SNF stays	22.6	16.8	28.7	38,648	14,887	23,761
Home health visits (unique service dates)	705.0	456.4	970.9	1,207,232	403,735	803,497
Hospice admissions	9.0	11.4	6.5	15,451	10,096	5,355

**Table 2B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with COPD, 2015**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>E&amp;M Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	188.55	149.17	230.65	322,848,514	131,965,664	190,882,850
Primary care physician	69.81	54.21	86.50	119,538,452	47,953,789	71,584,664
Other physician	96.05	76.61	116.82	164,460,630	67,776,531	96,684,099
Other practitioner	20.66	16.75	24.85	35,382,702	14,815,881	20,566,821
Other provider	2.02	1.60	2.47	3,466,729	1,419,463	2,047,266
By specialty code						
Physician / Internal medicine	47.64	36.15	59.94	81,579,925	31,976,371	49,603,554
Physician / Family practice	19.91	16.28	23.78	34,085,859	14,404,261	19,681,598
Physician / Emergency medicine	15.09	10.82	19.65	25,834,588	9,569,862	16,264,726
Physician / Pulmonary disease	14.40	10.00	19.11	24,662,002	8,845,775	15,816,227
Physician / Cardiology	12.83	10.39	15.44	21,973,490	9,194,817	12,778,673
Nurse practitioner	9.78	7.52	12.19	16,744,581	6,654,397	10,090,183
Physician / Ophthalmology	5.54	5.41	5.68	9,490,082	4,790,138	4,699,943
Physician assistant	4.37	3.41	5.40	7,486,538	3,014,099	4,472,439
Physician / Nephrology	4.18	3.45	4.95	7,150,090	3,050,966	4,099,124
Physician / Psychiatry	4.12	3.23	5.08	7,058,204	2,853,097	4,205,107
Physician / Infectious disease	3.73	2.90	4.62	6,394,642	2,569,330	3,825,312
Physician / Hematology/oncology	3.54	3.26	3.84	6,063,369	2,881,249	3,182,120
Physician / Neurology	3.23	2.71	3.78	5,527,644	2,399,465	3,128,179
Physician / Physical medicine/rehab	3.16	2.32	4.06	5,416,796	2,056,619	3,360,178
Physician / Gastroenterology	3.07	2.50	3.69	5,260,216	2,208,966	3,051,251
Physician / General surgery	2.46	1.98	2.98	4,220,448	1,752,378	2,468,070
Physician / Orthopedic surgery	2.32	1.97	2.68	3,966,057	1,744,709	2,221,348
Physician / Urology	2.30	2.11	2.50	3,929,930	1,863,661	2,066,268
Podiatry	2.27	1.99	2.58	3,894,254	1,757,087	2,137,167
Optometry	2.23	2.13	2.34	3,819,805	1,886,719	1,933,085
Physician / Critical care (intensivists)	2.04	1.56	2.55	3,486,253	1,379,161	2,107,092
Clinical psychologist	1.96	1.56	2.39	3,351,562	1,375,982	1,975,580
Physician / Otolaryngology	1.44	1.25	1.63	2,460,806	1,109,261	1,351,546
Physician / General practice	1.37	1.07	1.69	2,343,732	949,218	1,394,514
Physician / Dermatology	1.35	1.35	1.35	2,314,889	1,193,706	1,121,182

**Table 2B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with COPD, 2015**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>E&amp;M Reimbursement Related to COPD</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	38.73	26.82	51.46	66,308,640	23,722,518	42,586,123
Primary Care Physician	17.44	11.84	23.43	29,864,781	10,477,059	19,387,722
Other physicians	18.91	13.42	24.76	32,371,847	11,876,457	20,495,390
Other practitioners	2.37	1.54	3.26	4,063,090	1,364,380	2,698,710
Other providers	0.01	0.01	0.01	8,923	4,622	4,301
By specialty code						
Physician / Internal medicine	12.75	8.63	17.16	21,838,828	7,635,958	14,202,871
Physician / Pulmonary disease	9.01	6.46	11.74	15,428,741	5,716,676	9,712,065
Physician / Emergency medicine	4.46	2.83	6.21	7,638,100	2,501,425	5,136,676
Physician / Family practice	4.28	2.95	5.70	7,334,536	2,614,189	4,720,347
Physician / Cardiology	2.01	1.52	2.54	3,438,691	1,340,337	2,098,354
Nurse practitioner	1.63	1.06	2.24	2,798,430	941,255	1,857,174
Physician / Critical care (intensivists)	1.11	0.89	1.34	1,901,460	790,239	1,111,220
Physician / Infectious disease	0.78	0.60	0.99	1,343,357	526,862	816,495
Physician assistant	0.72	0.46	0.99	1,227,897	408,031	819,865
Physician / General practice	0.24	0.15	0.34	415,127	130,018	285,109
Physician / Neurology	0.19	0.15	0.23	321,003	130,747	190,256
Physician / General surgery	0.18	0.14	0.23	311,818	124,764	187,054
Physician / Geriatric medicine	0.16	0.11	0.22	276,290	96,894	179,396
Physician / Nephrology	0.16	0.12	0.20	268,116	105,918	162,197
Physician / Interventional cardiology	0.13	0.10	0.17	228,405	87,453	140,953
Physician / Physical medicine/rehab	0.12	0.07	0.19	211,792	58,282	153,510
Physician / Anesthesiology	0.09	0.08	0.11	161,349	72,052	89,297
Physician / Cardiac electrophysiology	0.06	0.04	0.09	109,038	37,911	71,127
Physician / Hospice and palliative care	0.06	0.05	0.07	104,121	45,692	58,430
Physician / Hematology/oncology	0.06	0.05	0.07	101,076	40,354	60,722
Physician / Gastroenterology	0.06	0.04	0.08	97,173	33,631	63,541
Physician / Allergy/immunology	0.06	0.03	0.09	96,334	24,439	71,896
Physician / Otolaryngology	0.05	0.04	0.06	86,595	33,976	52,619
Physician / Pediatric medicine	0.04	0.03	0.05	62,633	23,912	38,722
Physician / Thoracic surgery	0.03	0.03	0.04	57,242	26,748	30,494

**Table 2B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with COPD, 2015**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
Non-E&M Practitioner Reimbursement	PBPM (\$)			Total (\$)		
All Physicians & Practitioners	87.11	77.68	97.20	149,161,381	68,717,901	80,443,480
Primary Care Physician	2.84	2.38	3.33	4,854,826	2,101,751	2,753,075
Other physicians	61.30	53.93	69.18	104,963,886	47,712,317	57,251,569
Other practitioners	14.18	12.57	15.91	24,284,238	11,119,992	13,164,246
Other providers	8.79	8.80	8.79	15,058,431	7,783,841	7,274,590
By specialty code						
Ambulatory surgical center	8.57	8.51	8.63	14,673,964	7,530,811	7,143,153
Physician / Orthopedic surgery	6.48	5.08	7.97	11,088,122	4,491,239	6,596,883
Physician / Anesthesiology	5.70	4.68	6.78	9,753,962	4,143,101	5,610,861
Physician / Radiation oncology	5.54	5.59	5.49	9,488,118	4,947,414	4,540,703
Physician / Ophthalmology	5.34	5.32	5.37	9,143,881	4,702,725	4,441,156
Physician / Dermatology	4.53	4.69	4.36	7,756,653	4,150,634	3,606,019
Physical therapist in private practice	4.51	4.20	4.85	7,725,981	3,715,745	4,010,236
Physician / General surgery	4.39	3.50	5.33	7,508,771	3,100,471	4,408,300
Physician / Cardiology	3.89	3.19	4.63	6,654,333	2,818,466	3,835,867
CRNA	3.76	3.19	4.37	6,438,410	2,820,463	3,617,947
Podiatry	3.43	3.02	3.88	5,879,563	2,667,988	3,211,576
Physician / Urology	2.57	2.41	2.74	4,401,510	2,132,973	2,268,538
Physician / Gastroenterology	2.51	2.17	2.88	4,300,983	1,921,560	2,379,423
Physician / Vascular surgery	2.28	2.10	2.48	3,905,256	1,854,243	2,051,012
Physician / Otolaryngology	1.99	1.66	2.35	3,412,129	1,464,749	1,947,380
Physician / Neurosurgery	1.78	1.36	2.22	3,042,597	1,207,369	1,835,228
Physician / Hematology/oncology	1.52	1.41	1.64	2,600,350	1,246,870	1,353,480
Physician / Internal medicine	1.45	1.21	1.71	2,490,996	1,073,128	1,417,868
Physician / Diagnostic radiology	1.36	1.18	1.55	2,326,596	1,046,743	1,279,854
Physician / Thoracic surgery	1.29	1.08	1.52	2,208,541	953,682	1,254,860
Physician / Family practice	1.17	1.01	1.33	1,997,846	894,327	1,103,519
Physician assistant	1.14	0.95	1.34	1,954,845	844,712	1,110,133
Physician / Cardiac surgery	1.02	0.88	1.17	1,747,782	778,625	969,157
Physician / Plastic/recon. surgery	0.79	0.66	0.94	1,358,984	582,737	776,248
Physician / Interventional Pain Mgt	0.79	0.68	0.91	1,353,784	603,015	750,769

**Table 2B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with COPD, 2015**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement Related to COPD</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	1.54	1.19	1.91	2,631,434	1,050,983	1,580,451
Primary Care Physician	0.27	0.18	0.36	460,249	158,584	301,665
Other physicians	1.09	0.87	1.31	1,860,425	773,238	1,087,187
Other practitioners	0.17	0.13	0.22	298,611	114,167	184,444
Other providers	0.01	0.01	0.01	12,149	4,993	7,156
By specialty code						
Physician / Pulmonary disease	0.26	0.20	0.32	442,432	174,635	267,797
Physician / Cardiology	0.16	0.12	0.20	279,874	110,528	169,346
Physician / Emergency medicine	0.15	0.15	0.16	263,424	132,559	130,865
Physician / Internal medicine	0.15	0.10	0.20	251,139	89,282	161,857
Physician / Anesthesiology	0.13	0.10	0.16	225,899	92,648	133,250
Physician / Family practice	0.11	0.07	0.15	186,442	64,122	122,320
CRNA	0.10	0.08	0.11	167,131	72,313	94,818
Physician / General surgery	0.07	0.06	0.08	120,353	55,842	64,511
Physician / Thoracic surgery	0.06	0.03	0.08	95,471	29,786	65,686
Physician / Otolaryngology	0.05	0.04	0.06	88,662	36,495	52,167
Physician / Critical care (intensivists)	0.05	0.05	0.05	82,370	40,841	41,529
Physician / Diagnostic radiology	0.04	0.02	0.05	64,843	21,241	43,602
Nurse practitioner	0.03	0.02	0.04	45,079	15,675	29,405
Physical therapist in private practice	0.03	0.01	0.04	43,626	8,223	35,404
Physician / Cardiac surgery	0.02	0.02	0.03	40,804	17,434	23,370
Physician assistant	0.02	0.01	0.02	32,987	13,263	19,724
Physician / General practice	0.01	0.01	0.02	21,329	4,905	16,425
Physician / Interventional radiology	0.01	0.01	0.01	15,215	6,983	8,232
Physician / Cardiac electrophysiology	0.01	0.01	0.01	14,881	8,800	6,081
Physician / Infectious disease	0.01	<0.01	0.01	14,412	3,758	10,654
Ambulatory surgical center	0.01	<0.01	0.01	10,255	4,115	6,140
Physician / Gastroenterology	0.01	<0.01	0.01	8,627	3,911	4,716
Occupational therapist in private practice	<0.01	<0.01	<0.01	6,481	3,377	3,104
Physician / Vascular surgery	<0.01	<0.01	0.01	6,085	1,702	4,383
Physician / Neurology	<0.01	<0.01	<0.01	5,291	3,030	2,262
Physician / Allergy/immunology	<0.01	<0.01	<0.01	3,438	699	2,739



**Table 2B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with COPD, 2015**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Other Part B services</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Outpatient Emergency Department	31.32	22.98	40.23	53,625,570	20,330,623	33,294,947
Related to COPD	18.17	12.15	24.59	31,104,711	10,753,007	20,351,704
Lab and tests	43.43	38.17	49.06	74,366,266	33,767,998	40,598,268
Part B drugs	0.61	0.44	0.79	1,039,927	388,065	651,862
Durable Medical Equipment	71.04	54.43	88.81	121,643,706	48,148,210	73,495,496
Other Part B services	259.57	226.40	295.02	444,448,728	200,286,544	244,162,183
<b>Part A Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Inpatient	887.38	668.66	1,121.18	1,519,430,296	591,541,619	927,888,677
Related to COPD	699.62	513.02	899.08	1,197,931,998	453,850,594	744,081,404
Skilled Nursing Facility	224.98	162.32	291.96	385,219,708	143,597,003	241,622,704
Home Health	133.65	89.96	180.36	228,852,967	79,586,984	149,265,983
Hospice	58.28	73.52	41.98	99,787,879	65,044,208	34,743,671
<b>Total Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Part A and B	2,056.23	1,624.92	2,517.28	3,520,818,167	1,437,512,668	2,083,305,498
Part A	1,304.29	994.46	1,635.48	2,233,290,849	879,769,814	1,353,521,035
Part B	751.94	630.45	881.81	1,287,527,317	557,742,854	729,784,463

**Source:** Medicare 5-percent Limited Data Set

**Notes:** Includes FFS Beneficiaries with Medicare Part A & B coverage for all eligible months in CY2014 and one year following diagnosis. Excludes beneficiaries with ESRD and those residing outside the 50 States or DC. To be included, the beneficiary must have had some months of FFS eligibility during the year prior to the earliest diagnosis supporting the condition prior to 2015.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

Identification of COPD-related claim or lines contain a diagnosis code identified as a "trigger," "relevant," or "sequelae" diagnosis for COPD in the Episode Grouper for Medicare.

Evaluation and management services defined by BETOS code Mxx.

**Table 2C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with COPD in 2014**

Measure	All	Without	With Asthma	All	Without	With Asthma
	Beneficiaries	Asthma as a comorbidity	as a comorbidity	Beneficiaries	Asthma as a comorbidity	as a comorbidity
Number of beneficiaries	35,224	30,348	4,876			
Months of eligibility in 2014	385,479	330,058	55,421			
Utilization	Events per 1,000 beneficiary months			Total number of events		
E&M visits (excludes FQHC/RHC/outpatient)	895.6	876.1	1,011.6	345,225	289,163	56,062
Primary care physicians	320.4	316.5	343.7	123,515	104,465	19,050
Other physicians	408.3	395.5	484.0	157,377	130,554	26,823
Other practitioners	147.5	144.8	163.7	56,852	47,779	9,073
Other Part B providers	19.4	19.3	20.1	7,481	6,365	1,116
Acute hospital inpatient stays	24.8	24.5	26.6	9,575	8,101	1,474
Related to COPD	13.5	13.4	13.8	5,191	4,424	767
For septicemia	2.0	2.1	1.7	777	682	95
Emergency Department visits	51.9	49.9	64.4	20,023	16,456	3,567
Visits leading to an inpatient admission	18.2	18.0	19.6	7,018	5,929	1,089
Outpatient ED visits	33.7	31.9	44.7	13,005	10,527	2,478
Emergency Department visits related to COPD	20.8	20.1	25.1	8,028	6,637	1,391
Visits leading to an inpatient admission	10.3	10.2	10.8	3,968	3,367	601
Outpatient ED visits	10.5	9.9	14.3	4,060	3,270	790
Observation stays	7.6	7.4	8.9	2,944	2,450	494
Observation stays leading to an inpatient admission	2.2	2.1	2.7	856	709	147
Outpatient observation stays	5.4	5.3	6.3	2,088	1,741	347
Observation stays related to COPD	4.0	3.9	4.9	1,548	1,276	272
Stays leading to an inpatient admission	1.1	1.1	1.4	430	353	77
Outpatient stays	2.9	2.8	3.5	1,118	923	195
Skilled Nursing Facility stays	8.3	8.5	7.0	3,196	2,808	388
Home health visits (unique service dates)	284.2	283.1	291.1	109,571	93,440	16,131
Hospice admissions	4.9	5.3	2.6	1,885	1,739	146

**Table 2C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with COPD in 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>E&amp;M Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	67.39	65.94	76.00	25,976,866	21,764,713	4,212,153
Primary care physician	23.45	23.08	25.64	9,040,199	7,619,351	1,420,848
Other physician	35.52	34.58	41.16	13,693,287	11,411,889	2,281,398
Other practitioner	7.54	7.41	8.30	2,905,281	2,445,484	459,797
Other provider	0.88	0.87	0.90	338,100	287,989	50,111
By specialty code						
Physician / Internal medicine	15.71	15.41	17.50	6,057,323	5,087,487	969,837
Physician / Family practice	6.92	6.85	7.33	2,667,062	2,260,713	406,349
Physician / Emergency medicine	4.96	4.78	6.06	1,913,198	1,577,563	335,635
Physician / Cardiology	4.65	4.65	4.61	1,790,944	1,535,440	255,505
Physician / Pulmonary disease	3.84	3.60	5.28	1,479,997	1,187,511	292,486
Nurse practitioner	3.34	3.34	3.35	1,287,850	1,102,336	185,514
Physician / Ophthalmology	2.29	2.23	2.66	882,572	735,164	147,408
Physician / Nephrology	1.75	1.77	1.66	675,240	583,491	91,749
Physician / Hematology/oncology	1.71	1.72	1.68	660,351	567,468	92,883
Physician assistant	1.56	1.52	1.80	601,120	501,441	99,679
Physician / Psychiatry	1.55	1.47	2.02	595,753	483,732	112,021
Physician / Infectious disease	1.39	1.38	1.49	537,649	455,141	82,508
Physician / Neurology	1.35	1.29	1.66	519,034	427,078	91,956
Physician / Gastroenterology	1.26	1.25	1.34	486,145	412,010	74,135
Physician / Physical medicine/rehab	1.26	1.25	1.33	485,519	411,881	73,638
Physician / Orthopedic surgery	1.02	0.96	1.33	392,111	318,398	73,713
Physician / Urology	0.98	1.01	0.86	379,586	332,185	47,402
Physician / General surgery	0.94	0.94	0.92	362,241	311,335	50,906
Podiatry	0.91	0.89	1.02	349,674	293,275	56,398
Optometry	0.89	0.88	0.92	343,116	292,001	51,115
Clinical psychologist	0.85	0.85	0.87	329,261	280,891	48,370
Physician / Critical care (intensivists)	0.69	0.66	0.88	265,411	216,647	48,764
Physician / Otolaryngology	0.63	0.58	0.95	244,175	191,400	52,775
Physician / Dermatology	0.62	0.60	0.73	239,733	199,093	40,640
Physician / Medical oncology	0.51	0.54	0.33	195,530	177,008	18,522

**Table 2C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with COPD in 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>E&amp;M Reimbursement Related to COPD</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	9.53	9.22	11.34	3,671,696	3,043,009	628,687
Primary Care Physician	3.91	3.81	4.51	1,507,548	1,257,526	250,022
Other physicians	5.09	4.89	6.29	1,963,870	1,615,087	348,783
Other practitioners	0.52	0.51	0.54	199,596	169,815	29,781
Other providers	0.00	0.00	0.00	682	581	101
By specialty code						
Physician / Internal medicine	2.91	2.84	3.33	1,121,324	936,583	184,741
Physician / Pulmonary disease	2.19	2.08	2.89	845,940	685,608	160,332
Physician / Emergency medicine	1.17	1.13	1.38	449,397	373,039	76,357
Physician / Family practice	0.90	0.87	1.04	346,218	288,490	57,728
Physician / Cardiology	0.66	0.64	0.77	254,124	211,557	42,567
Physician / Critical care (intensivists)	0.37	0.36	0.42	142,028	118,551	23,477
Nurse practitioner	0.36	0.36	0.36	138,391	118,605	19,786
Physician / Infectious disease	0.25	0.24	0.30	96,338	79,618	16,720
Physician assistant	0.15	0.15	0.18	59,301	49,351	9,950
Physician / General practice	0.07	0.06	0.09	25,116	20,240	4,877
Physician / Neurology	0.06	0.06	0.07	24,821	20,674	4,147
Physician / General surgery	0.05	0.05	0.03	18,068	16,407	1,660
Physician / Nephrology	0.04	0.04	0.06	16,191	12,796	3,395
Physician / Anesthesiology	0.04	0.04	0.05	14,906	12,115	2,791
Physician / Geriatric medicine	0.04	0.04	0.05	14,891	12,214	2,677
Physician / Interventional cardiology	0.03	0.03	0.05	12,660	9,963	2,697
Physician / Hospice and palliative care	0.02	0.02	0.03	8,849	7,259	1,591
Physician / Otolaryngology	0.02	0.02	0.04	8,470	6,378	2,092
Physician / Physical medicine/rehab	0.02	0.02	0.01	8,452	7,765	688
Physician / Gastroenterology	0.02	0.02	0.03	7,568	5,698	1,869
Physician / Hematology/oncology	0.02	0.02	0.02	7,459	6,547	912
Physician / Allergy/immunology	0.02	0.01	0.05	6,654	4,081	2,573
Physician / Cardiac electrophysiology	0.02	0.02	0.02	6,535	5,551	984
Physician / Thoracic surgery	0.01	0.01	0.01	4,588	4,306	282
Physician / Cardiac surgery	0.01	0.01	0.01	4,451	3,950	501
Physician / Pediatric medicine	0.01	0.01	0.01	4,081	3,551	530
Physician / Medical oncology	0.01	0.01	0.01	3,966	3,636	329
Physician / Psychiatry	0.01	0.01	0.01	3,947	3,320	626

**Table 2C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with COPD in 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	40.20	39.74	42.94	15,496,558	13,116,998	2,379,560
Primary Care Physician	1.10	1.12	0.96	423,332	370,293	53,039
Other physicians	28.37	28.10	30.02	10,936,787	9,272,995	1,663,792
Other practitioners	6.32	6.16	7.29	2,436,694	2,032,536	404,157
Other providers	4.41	4.37	4.67	1,699,746	1,441,174	258,572
By specialty code						
Ambulatory surgical center	4.24	4.24	4.30	1,636,356	1,398,049	238,306
Physician / Radiation oncology	2.96	3.12	2.01	1,139,805	1,028,146	111,659
Physician / Orthopedic surgery	2.64	2.54	3.21	1,016,798	838,760	178,038
Physician / Anesthesiology	2.49	2.41	3.00	961,141	795,142	165,999
Physical therapist in private practice	2.49	2.40	3.04	960,666	792,367	168,298
Physician / Dermatology	2.23	2.21	2.35	858,607	728,092	130,515
Physician / Ophthalmology	2.22	2.21	2.29	855,043	728,320	126,724
Physician / General surgery	1.86	1.80	2.20	715,845	594,114	121,731
Physician / Cardiology	1.55	1.60	1.29	598,705	527,013	71,692
CRNA	1.53	1.52	1.59	590,370	502,438	87,931
Physician / Urology	1.52	1.60	1.03	585,520	528,420	57,100
Podiatry	1.31	1.28	1.46	503,695	422,853	80,842
Physician / Gastroenterology	1.14	1.10	1.40	441,209	363,529	77,680
Physician / Hematology/oncology	1.08	1.16	0.57	415,292	383,666	31,626
Physician / Vascular surgery	1.06	1.00	1.43	409,409	330,256	79,153
Physician / Otolaryngology	0.94	0.84	1.54	363,828	278,220	85,608
Physician / Neurosurgery	0.75	0.70	1.04	287,668	229,795	57,873
Physician / Diagnostic radiology	0.69	0.69	0.69	265,019	226,747	38,272
Physician / Internal medicine	0.59	0.59	0.54	226,258	196,066	30,192
Physician / Thoracic surgery	0.58	0.62	0.30	222,316	205,548	16,769
Physician / Cardiac surgery	0.50	0.53	0.35	194,096	174,695	19,400
Physician assistant	0.45	0.44	0.52	175,225	146,219	29,006
Physician / Family practice	0.44	0.45	0.36	169,853	150,041	19,812
Physician / Plastic/recon. surgery	0.37	0.34	0.56	143,798	112,766	31,032
Physician / Emergency medicine	0.33	0.33	0.31	126,997	109,717	17,281
Physician / Medical oncology	0.31	0.34	0.11	118,970	112,796	6,174
Physician / Interventional Pain Mgt	0.30	0.28	0.41	113,813	91,098	22,714

**Table 2C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with COPD in 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement Related to COPD</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	0.54	0.52	0.60	206,287	172,780	33,507
Primary Care Physician	0.07	0.08	0.04	26,910	24,851	2,058
Other physicians	0.41	0.39	0.51	157,682	129,175	28,507
Other practitioners	0.05	0.05	0.05	20,436	17,826	2,610
Other carrier providers	0.00	0.00	0.01	1,259	928	331
By specialty code						
Physician / Pulmonary disease	0.09	0.08	0.15	33,882	25,537	8,346
Physician / Emergency medicine	0.09	0.08	0.10	33,240	27,485	5,755
Physician / Cardiology	0.07	0.07	0.06	27,104	23,589	3,515
Physician / Anesthesiology	0.04	0.04	0.06	16,890	13,737	3,153
Physician / Internal medicine	0.04	0.04	0.02	15,292	14,145	1,148
CRNA	0.03	0.03	0.04	12,390	10,413	1,977
Physician / Family practice	0.03	0.03	0.02	11,078	10,201	877
Physician / Critical care (intensivists)	0.02	0.02	0.03	8,845	7,289	1,556
Physician / Thoracic surgery	0.02	0.02	0.01	7,659	6,890	769
Physician / Otolaryngology	0.02	0.02	0.02	6,838	5,455	1,383
Physician / General surgery	0.02	0.02	0.02	6,829	5,597	1,232
Physician / Diagnostic radiology	0.01	0.01	0.01	3,595	2,981	614
Physician / Cardiac surgery	0.01	0.01	0.01	3,276	2,790	486
Physician assistant	0.01	0.01	0.01	2,319	2,001	318
Nurse practitioner	0.01	0.01	0.01	2,240	1,925	315
Physical therapist in private practice	<0.01	0.01	0.00	1,771	1,771	0
Occupational therapist in private practice	<0.01	<0.01	0.00	1,479	1,479	0
Physician / Neurology	<0.01	<0.01	0.00	1,184	1,184	0
Physician / Gastroenterology	<0.01	<0.01	<0.01	1,161	811	349
Physician / Cardiac electrophysiology	<0.01	<0.01	<0.01	1,133	720	412
Physician / Interventional radiology	<0.01	<0.01	<0.01	1,036	955	81
Physician / Nephrology	<0.01	<0.01	0.00	927	927	0
Speech language pathologist	<0.01	<0.01	0.01	910	579	331
Physician / Vascular surgery	<0.01	<0.01	0.01	427	115	312
Physician / General practice	<0.01	<0.01	0.00	417	417	0
Ambulatory surgical center	<0.01	<0.01	0.00	333	333	0

**Table 2C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with COPD in 2014**

Measure	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity	All Beneficiaries	Without Asthma as a comorbidity	With Asthma as a comorbidity
<b>Other Part B Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Outpatient Emergency Department	10.97	10.36	14.55	4,226,915	3,420,658	806,258
Related to COPD	4.26	4.02	5.63	1,640,547	1,328,463	312,083
Lab and tests	17.48	17.34	18.32	6,738,250	5,722,867	1,015,383
Part B drugs	0.15	0.16	0.10	57,238	51,605	5,633
Durable Medical Equipment	20.68	19.67	26.67	7,970,749	6,492,709	1,478,039
Other Part B services	117.45	117.21	118.88	45,274,432	38,685,743	6,588,689
<b>Part A Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Inpatient	325.34	323.31	337.40	125,410,332	106,711,030	18,699,302
Related to COPD	197.85	197.77	198.30	76,267,117	65,276,868	10,990,249
Skilled Nursing Facility	82.79	84.50	72.59	31,913,106	27,890,357	4,022,749
Home Health	58.49	58.02	61.26	22,545,502	19,150,400	3,395,101
Hospice	28.15	30.48	14.27	10,852,321	10,061,454	790,868
<b>Total Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Part A and B	798.53	795.75	815.06	307,816,135	262,644,500	45,171,635
Part A	494.76	496.32	485.52	190,721,261	163,813,242	26,908,020
Part B	303.76	299.44	329.54	117,094,874	98,831,259	18,263,615

**Source:** Medicare 5-percent Limited Data Set

**Notes:** Includes Medicare beneficiaries with one or more months of FFS eligibility during the year prior to the earliest diagnosis supporting the condition, and this earliest date must have been in 2014. Excluded are beneficiaries with ESRD and residents outside the 50 states or DC.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

Identification of COPD-related claim or lines contain a diagnosis code identified as a "trigger," "relevant," or "sequelae" diagnosis for COPD in the Episode Grouper for Medicare. Evaluation and management services defined by BETOS code Mxx.

**Table 3A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with Asthma, 2014**

Measure	All	Without	With COPD	All	Without	With COPD as
	Beneficiaries	COPD as a comorbidity	as a comorbidity	Beneficiaries	COPD as a comorbidity	a comorbidity
Number of beneficiaries	19,215	11,946	7,269			
months of eligibility in 2014	225,694	141,389	84,305			
Utilization	Events per 1,000 beneficiary months			Total number of events		
E&M carrier visits (excludes FQHC/RHC/outpatient)	2,283.4	1,789.2	3,112.0	515,339	252,980	262,359
Primary care physicians	847.5	602.2	1,258.9	191,273	85,140	106,133
Other physicians	1,061.2	850.3	1,414.9	239,506	120,223	119,283
Other practitioners	329.3	294.6	387.5	74,318	41,654	32,664
Other Part B providers	45.4	42.2	50.8	10,242	5,963	4,279
Acute hospital inpatient stays	77.6	48.5	126.4	17,515	6,858	10,657
Related to Asthma	48.0	31.3	76.2	10,841	4,420	6,421
For septicemia	4.6	2.6	8.0	1,042	366	676
Emergency Department visits	147.6	106.4	216.7	33,312	15,041	18,271
Visits leading to an inpatient admission	54.4	29.8	95.5	12,268	4,218	8,050
Outpatient ED visits	93.2	76.5	121.2	21,044	10,823	10,221
Emergency Department visits related to Asthma	68.0	46.9	103.4	15,350	6,636	8,714
Visits leading to an inpatient admission	33.8	19.0	58.7	7,626	2,680	4,946
Outpatient ED visits	34.2	28.0	44.7	7,724	3,956	3,768
Observation stays	21.1	14.3	32.4	4,753	2,022	2,731
Observation stays leading to an inpatient admission	6.8	4.0	11.4	1,527	568	959
Outpatient observation stays	14.3	10.3	21.0	3,226	1,454	1,772
Observation stays related to Asthma	12.3	8.9	18.0	2,780	1,259	1,521
Stays leading to an inpatient admission	3.8	2.3	6.3	859	332	527
Outpatient stays	8.5	6.6	11.8	1,921	927	994
Skilled nursing facility stays	18.5	9.8	33.0	4,172	1,388	2,784
Home health visits (unique service dates)	550.5	343.9	897.1	124,248	48,620	75,628
Hospice admissions	3.9	2.2	6.6	869	309	560



**Table 3A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with Asthma, 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>E&amp;M Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	181.85	130.96	267.19	41,042,166	18,516,979	22,525,187
Primary care physician	65.44	44.44	100.66	14,769,610	6,283,560	8,486,049
Other physician	97.15	70.06	142.58	21,925,927	9,905,875	12,020,051
Other practitioner	17.19	14.63	21.48	3,878,859	2,068,214	1,810,645
Other provider	2.07	1.83	2.47	467,770	259,329	208,441
By specialty code						
Physician / Internal medicine	44.95	28.86	71.92	10,143,888	4,081,003	6,062,885
Physician / Family practice	18.57	14.29	25.76	4,191,828	2,020,506	2,171,322
Physician / Emergency medicine	14.45	9.47	22.79	3,260,588	1,339,282	1,921,307
Physician / Pulmonary disease	12.93	5.40	25.55	2,917,397	763,806	2,153,591
Physician / Cardiology	12.63	7.97	20.45	2,850,104	1,126,365	1,723,739
Nurse practitioner	6.81	5.02	9.82	1,536,709	709,090	827,619
Physician / Psychiatry	5.74	5.21	6.63	1,295,715	736,425	559,291
Physician / Ophthalmology	5.13	5.13	5.14	1,158,588	724,919	433,669
Physician assistant	3.84	3.10	5.07	866,181	438,721	427,460
Physician / Nephrology	3.79	2.19	6.48	856,362	309,938	546,424
Physician / Infectious disease	3.67	2.03	6.40	827,188	287,379	539,809
Physician / Neurology	3.58	3.09	4.40	807,614	436,709	370,905
Physician / Hematology/oncology	3.48	2.57	5.02	785,831	362,951	422,880
Physician / Physical medicine & rehab	3.45	2.50	5.04	778,089	353,087	425,002
Physician / Gastroenterology	3.28	2.43	4.72	740,488	342,988	397,501
Physician / Orthopedic surgery	3.07	3.14	2.97	693,988	443,867	250,121
Physician / General surgery	2.68	2.15	3.56	605,149	304,615	300,534
Physician / Urology	2.13	1.85	2.60	480,596	261,115	219,481
Podiatry	2.05	1.88	2.33	462,048	265,237	196,811
Optometry	2.02	2.00	2.05	455,432	282,479	172,953
Clinical psychologist	2.01	1.80	2.35	453,128	254,758	198,370
Physician / Critical care (intensivists)	1.95	0.85	3.78	438,979	120,048	318,931
Physician / Otolaryngology	1.76	1.72	1.84	397,661	242,522	155,139
Physician / Dermatology	1.47	1.55	1.35	332,898	219,366	113,532
Physician / Endocrinology	1.45	1.25	1.78	327,794	177,344	150,450

**Table 3A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with Asthma, 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>E&amp;M Reimbursement Related to Asthma</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	28.56	15.23	50.93	6,446,141	2,152,786	4,293,355
Primary Care Physician	12.03	6.55	21.22	2,714,292	925,592	1,788,701
Other physicians	15.38	7.94	27.86	3,470,592	1,122,203	2,348,388
Other practitioners	1.15	0.74	1.84	260,216	104,700	155,516
Other providers	<0.01	<0.01	0.01	1,041	291	750
By specialty code						
Physician / Internal medicine	8.94	4.46	16.47	2,018,476	630,082	1,388,393
Physician / Pulmonary disease	6.41	2.95	12.21	1,446,464	416,934	1,029,530
Physician / Emergency medicine	3.64	2.03	6.33	821,313	287,544	533,769
Physician / Family practice	2.84	1.95	4.33	640,112	275,346	364,766
Physician / Cardiology	2.15	1.27	3.61	484,192	180,132	304,060
Physician / Critical care (intensivists)	0.96	0.34	2.01	217,508	47,922	169,586
Nurse practitioner	0.72	0.46	1.16	162,590	64,589	98,001
Physician / Infectious disease	0.64	0.22	1.33	143,499	31,461	112,038
Physician assistant	0.43	0.28	0.67	96,182	39,750	56,432
Physician / Allergy/immunology	0.39	0.45	0.29	87,826	63,381	24,446
Physician / Neurology	0.19	0.12	0.30	42,054	16,357	25,697
Physician / General surgery	0.16	0.07	0.32	37,000	10,189	26,811
Physician / General practice	0.14	0.09	0.23	32,134	12,359	19,775
Physician / Nephrology	0.11	0.07	0.18	25,394	10,381	15,013
Physician / Geriatric medicine	0.10	0.06	0.19	23,570	7,804	15,766
Physician / Anesthesiology	0.10	0.04	0.19	21,976	5,943	16,033
Physician / Otolaryngology	0.09	0.07	0.10	19,276	10,431	8,845
Physician / Physical medicine/rehab	0.08	0.02	0.18	17,823	3,004	14,819
Physician / Cardiac electrophysiology	0.08	0.04	0.14	17,325	5,724	11,601
Physician / Hematology/oncology	0.07	0.03	0.13	15,548	4,898	10,650
Physician / Gastroenterology	0.04	0.03	0.07	9,661	4,151	5,510
Physician / Hospice and palliative care	0.03	0.02	0.05	6,828	2,424	4,404
Physician / Pediatric medicine	0.03	0.03	0.03	6,764	4,189	2,576
Physician / Endocrinology	0.03	0.01	0.06	6,484	1,454	5,031
Physician / Psychiatry	0.02	0.01	0.05	5,519	1,723	3,797

**Table 3A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with Asthma, 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
Non-E&M Practitioner Reimbursement	PBPM (\$)			Total (\$)		
All Physicians & Practitioners	104.43	99.12	113.33	23,568,539	14,013,886	9,554,652
Primary Care Physician	2.72	2.39	3.26	612,874	338,180	274,694
Other physicians	74.50	69.15	83.48	16,813,847	9,776,376	7,037,470
Other practitioners	16.94	16.85	17.08	3,822,680	2,382,962	1,439,718
Other providers	10.28	10.72	9.52	2,319,138	1,516,368	802,770
By specialty code						
Physician / Orthopedic surgery	11.23	11.81	10.25	2,533,830	1,669,918	863,912
Ambulatory surgical center	10.09	10.69	9.09	2,277,424	1,511,034	766,390
Physician / Anesthesiology	8.12	7.55	9.08	1,833,240	1,068,026	765,214
Physical therapist in private practice	6.58	7.42	5.18	1,485,163	1,048,783	436,380
Physician / General surgery	6.52	5.89	7.58	1,472,010	832,935	639,075
Physician / Ophthalmology	5.56	5.48	5.70	1,255,388	774,802	480,587
Physician / Radiation oncology	5.31	4.88	6.04	1,199,178	690,195	508,983
CRNA	4.71	4.24	5.49	1,062,933	600,047	462,885
Physician / Cardiology	4.38	3.01	6.69	989,140	425,111	564,029
Physician / Dermatology	3.98	3.82	4.25	898,825	540,654	358,171
Physician / Neurosurgery	3.22	3.28	3.11	725,922	464,152	261,770
Podiatry	3.01	2.58	3.74	679,132	364,192	314,941
Physician / Gastroenterology	2.97	2.66	3.51	671,145	375,563	295,582
Physician / Otolaryngology	2.73	2.51	3.11	616,582	354,279	262,302
Physician / Urology	2.58	2.49	2.73	581,591	351,691	229,900
Physician / Thoracic surgery	1.81	1.15	2.91	407,719	162,490	245,229
Physician / Vascular surgery	1.75	1.44	2.27	394,898	203,168	191,730
Physician / Diagnostic radiology	1.54	1.17	2.17	348,052	165,438	182,614
Physician / Cardiac surgery	1.50	1.15	2.07	337,619	162,952	174,667
Physician assistant	1.46	1.49	1.40	328,429	210,181	118,248
Physician / Hematology/oncology	1.39	1.11	1.86	313,905	157,071	156,834
Physician / Internal medicine	1.34	1.13	1.71	303,526	159,218	144,308
Physician / Family practice	1.14	1.07	1.24	256,224	151,956	104,268
Physician / Obstetrics/gynecology	1.04	1.32	0.57	234,036	186,306	47,730
Physician / Plastic/recon. surgery	1.01	1.04	0.96	228,256	147,309	80,946

**Table 3A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with Asthma, 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement Related to Asthma</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	1.39	0.82	2.35	313,882	116,030	197,852
Primary Care Physician	0.17	0.13	0.25	39,205	18,108	21,097
Other physicians	1.04	0.54	1.88	234,905	76,756	158,149
Other practitioners	0.16	0.13	0.21	36,941	19,014	17,927
Other providers	0.01	0.02	0.01	2,831	2,152	679
By specialty code						
Physician / Cardiology	0.27	0.18	0.43	61,366	25,409	35,957
Physician / Pulmonary disease	0.22	0.08	0.46	50,330	11,221	39,109
Physician / Emergency medicine	0.14	0.06	0.27	31,388	8,478	22,910
Physician / Anesthesiology	0.12	0.05	0.22	26,191	7,563	18,628
Physician / Internal medicine	0.10	0.07	0.16	23,181	9,518	13,663
CRNA	0.08	0.03	0.16	17,746	4,672	13,074
Physician / Otolaryngology	0.06	0.04	0.11	14,449	5,046	9,403
Physician / Family practice	0.06	0.06	0.08	14,378	7,903	6,475
Physician / General surgery	0.06	0.04	0.09	12,562	5,144	7,418
Physical therapist in private practice	0.05	0.07	0.00	10,316	10,167	149
Physician / Critical care (intensivists)	0.04	0.01	0.09	9,576	1,759	7,817
Physician / Thoracic surgery	0.03	0.01	0.06	6,480	1,800	4,681
Physician / Cardiac surgery	0.02	0.02	0.03	4,450	2,194	2,256
Nurse practitioner	0.02	0.02	0.03	4,448	2,122	2,325
Physician assistant	0.02	0.01	0.03	4,089	1,952	2,137
Physician / Diagnostic radiology	0.02	0.01	0.02	3,858	1,782	2,077
Physician / Allergy/immunology	0.02	0.02	0.01	3,664	2,634	1,031
Physician / Cardiac electrophysiology	0.01	0.01	0.02	2,955	991	1,964
Ambulatory surgical center	0.01	0.01	0.01	2,291	1,620	670
Physician / Gastroenterology	0.01	0.01	0.01	2,024	905	1,119
Physician / General practice	0.01	<0.01	0.01	1,647	688	959
Physician / Infectious disease	<0.01	0.00	0.01	1,128	0	1,128
Physician / Hematology/oncology	<0.01	0.01	0.00	758	758	0
Indep. Diag. Testing Facility (IDTF)	<0.01	<0.01	0.00	508	508	0
Physician / Neurology	<0.01	<0.01	<0.01	496	463	33

**Table 3A: Medicare Reimbursement for FFS Beneficiaries Newly Diagnosed with Asthma, 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>Other Part B Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Outpatient Emergency Department	28.33	21.87	39.15	6,392,886	3,092,358	3,300,528
Related to Asthma	12.72	9.83	17.57	2,871,135	1,389,901	1,481,234
Lab and tests	44.14	38.24	54.03	9,961,752	5,406,677	4,555,075
Part B drugs	0.42	0.33	0.58	95,145	46,473	48,673
Durable Medical Equipment	40.25	26.61	63.12	9,083,798	3,762,716	5,321,082
Other Part B services	233.69	203.57	284.19	52,741,591	28,782,777	23,958,815
<b>Part A Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Inpatient	954.09	611.56	1528.55	215,332,549	86,468,259	128,864,290
Related to Asthma	622.77	405.18	987.70	140,555,458	57,287,788	83,267,669
Skilled Nursing Facility	188.43	104.33	329.48	42,528,139	14,751,007	27,777,132
Home Health	108.67	70.51	172.67	24,526,536	9,969,324	14,557,212
Hospice	22.18	12.74	38.01	5,005,874	1,801,046	3,204,829
<b>Total Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Part A and B	1981.27	1385.88	2979.82	447,161,112	195,947,678	251,213,434
Part A	1273.38	799.14	2068.72	287,393,098	112,989,636	174,403,463
Part B	707.90	586.74	911.10	159,768,014	82,958,042	76,809,972

**Source:** Medicare 5-percent Limited Data Set

**Notes:** Includes FFS Beneficiaries with Medicare Part A, B. Excludes beneficiaries with ESRD and those residing outside the 50 States or DC. To be included, the beneficiary must have had some months of FFS eligibility during the year prior to the earliest diagnosis supporting the condition, and this earliest date must have been in 2014.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

Identification of asthma-related claim or lines contain a diagnosis code identified as a "trigger," "relevant," or "sequelae" diagnosis for asthma in the Episode Grouper for Medicare. Evaluation and management services defined by BETOS code Mxx.

**Table 3B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with Asthma, 2015**

Measure	All	Without	With COPD	All	Without	With COPD
	Beneficiaries	COPD as a comorbidity	as a comorbidity	Beneficiaries	COPD as a comorbidity	as a comorbidity
Number of beneficiaries	83,000	40,532	42,468			
Months of eligibility in 2014	975,968	478,024	497,944			
Utilization	Events per 1,000 beneficiary months			Total number of events		
E&M visits (excludes FQHC/RHC/outpatient)	2,404.9	1,838.7	2,948.5	2,347,154	878,956	1,468,198
Primary care physicians	845.8	558.6	1,121.5	825,510	267,044	558,466
Other physicians	1,101.9	886.8	1,308.5	1,075,440	423,898	651,542
Other practitioners	401.3	342.2	458.2	391,697	163,559	228,138
Other Part B providers	55.8	51.2	60.4	54,507	24,455	30,052
Acute hospital inpatient stays	67.2	34.1	98.9	65,575	16,304	49,271
Related to asthma	47.1	24.4	68.8	45,947	11,679	34,268
For septicemia	5.0	2.2	7.7	4,873	1,029	3,844
Emergency Department visits	159.6	107.7	209.4	155,771	51,482	104,289
Visits leading to an inpatient admission	50.5	22.5	77.3	49,255	10,776	38,479
Outpatient ED visits	109.1	85.2	132.2	106,516	40,706	65,810
Emergency Department visits related to Asthma	86.3	54.9	116.5	84,263	26,230	58,033
Visits leading to an inpatient admission	35.7	16.1	54.6	34,864	7,690	27,174
Outpatient ED visits	50.6	38.8	62.0	49,399	18,540	30,859
Observation stays	22.9	13.6	31.9	22,374	6,499	15,875
Observation stays leading to an inpatient admission	6.7	3.2	10.1	6,544	1,514	5,030
Outpatient observation stays	16.2	10.4	21.8	15,830	4,985	10,845
Observation stays related to Asthma	15.7	9.7	21.5	15,309	4,621	10,688
Stays leading to an inpatient admission	4.5	2.2	6.7	4,396	1,059	3,337
Outpatient stays	11.2	7.5	14.8	10,913	3,562	7,351
Skilled Nursing Facility stays	17.7	7.2	27.8	17,292	3,436	13,856
Home health visits (unique service dates)	677.6	313.9	1,026.7	661,307	150,045	511,262
Hospice admissions	4.2	2.1	6.3	4,125	1,010	3,115

**Table 3B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with Asthma, 2015**

Measure	All	Without	With COPD	All	Without	With COPD
	Beneficiaries	COPD as a comorbidity	as a comorbidity	Beneficiaries	COPD as a comorbidity	as a comorbidity
E&M Reimbursement	PBPM (\$)			Total (\$)		
All Physicians & Practitioners	186.60	128.87	246.97	182,114,728	61,605,120	120,509,608
Primary care physician	65.49	40.79	91.02	63,911,385	19,499,761	44,411,624
E&M Other physician	96.66	68.43	126.29	94,332,760	32,710,809	61,621,950
Other practitioner	21.76	17.23	26.64	21,235,663	8,236,414	12,999,249
Other provider	2.70	2.42	3.03	2,634,920	1,158,135	1,476,785
By specialty code						
Physician / Internal medicine	44.56	26.13	63.53	43,486,866	12,489,412	30,997,454
Physician / Family practice	18.76	13.37	24.42	18,306,371	6,389,799	11,916,572
Physician / Emergency medicine	15.38	9.40	21.54	15,006,458	4,495,047	10,511,411
Physician / Pulmonary disease	12.52	4.60	20.53	12,215,000	2,199,069	10,015,931
Physician / Cardiology	10.88	5.97	15.90	10,613,791	2,854,497	7,759,295
Nurse practitioner	9.16	5.92	12.52	8,936,524	2,828,699	6,107,825
Physician / Ophthalmology	6.42	6.56	6.42	6,267,418	3,137,067	3,130,351
Physician / Psychiatry	5.61	5.19	6.14	5,476,596	2,479,647	2,996,949
Physician assistant	4.70	3.59	5.88	4,583,204	1,714,907	2,868,297
Physician / Neurology	3.54	2.90	4.24	3,458,314	1,387,170	2,071,143
Physician / Nephrology	3.30	1.61	5.02	3,218,665	769,103	2,449,562
Physician / Physical medicine/rehab	3.25	2.18	4.36	3,167,210	1,040,299	2,126,912
Physician / Gastroenterology	3.24	2.49	4.03	3,158,651	1,190,189	1,968,462
Physician / Infectious disease	3.22	1.48	5.00	3,146,875	708,323	2,438,552
Physician / Orthopedic surgery	3.18	3.27	3.15	3,099,349	1,564,080	1,535,269
Physician / Hematology/oncology	2.91	2.12	3.76	2,844,734	1,012,172	1,832,563
Clinical psychologist	2.63	2.38	2.93	2,564,317	1,136,917	1,427,400
Podiatry	2.53	2.21	2.89	2,465,461	1,054,132	1,411,328
Physician / General surgery	2.33	1.68	3.01	2,271,446	803,784	1,467,662
Optometry	2.29	2.17	2.44	2,231,202	1,038,400	1,192,802
Physician / Urology	2.11	1.79	2.48	2,063,453	853,545	1,209,908
Licensed clinical social worker	2.03	2.20	1.91	1,983,679	1,053,130	930,548
Physician / Allergy/immunology	2.01	2.90	1.17	1,957,501	1,385,612	571,888
Physician / Otolaryngology	1.94	1.99	1.92	1,891,201	952,692	938,509
Physician / Dermatology	1.68	1.86	1.53	1,637,001	888,828	748,172

**Table 3B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with Asthma, 2015**

Measure	All	Without	With COPD	All	Without	With COPD
	Beneficiaries	COPD as a comorbidity	as a comorbidity	Beneficiaries	COPD as a comorbidity	as a comorbidity
<b>E&amp;M Reimbursement Related to Asthma</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	28.31	13.21	43.68	27,624,827	6,313,834	21,310,993
Primary Care Physician	12.00	5.28	18.83	11,710,893	2,524,973	9,185,920
Other physicians	14.65	7.09	22.36	14,294,902	3,386,841	10,908,061
Other practitioners	1.66	0.84	2.49	1,616,358	401,288	1,215,070
Other providers	<.01	<.01	<.01	2,674	732	1,942
By specialty code						
Physician / Internal medicine	8.84	3.63	14.11	8,623,975	1,737,274	6,886,701
Physician / Pulmonary disease	6.12	2.57	9.71	5,969,297	1,230,608	4,738,689
Physician / Emergency medicine	3.73	1.77	5.73	3,640,754	844,528	2,796,226
Physician / Family practice	2.89	1.52	4.29	2,821,745	728,141	2,093,603
Physician / Cardiology	1.78	0.96	2.62	1,738,057	457,843	1,280,215
Nurse practitioner	1.07	0.50	1.64	1,042,438	240,312	802,127
Physician / Critical care (intensivists)	0.77	0.28	1.26	749,838	132,942	616,896
Physician assistant	0.57	0.33	0.82	559,637	158,337	401,300
Physician / Infectious disease	0.56	0.15	0.96	543,671	73,855	469,817
Physician / Allergy/immunology	0.55	0.77	0.33	531,932	368,725	163,207
Physician / General practice	0.17	0.08	0.26	166,410	40,162	126,249
Physician / Neurology	0.16	0.09	0.24	157,914	43,223	114,691
Physician / General surgery	0.12	0.05	0.19	116,531	25,916	90,615
Physician / Interventional cardiology	0.12	0.07	0.17	112,838	31,405	81,433
Physician / Nephrology	0.11	0.02	0.19	102,510	10,593	91,916
Physician / Geriatric medicine	0.10	0.04	0.16	98,763	19,396	79,366
Physician / Otolaryngology	0.08	0.07	0.08	76,165	34,896	41,269
Physician / Physical medicine/rehab	0.08	0.03	0.12	75,018	16,572	58,446
Physician / Cardiac electrophysiology	0.06	0.04	0.09	61,301	19,060	42,242
Physician / Anesthesiology	0.05	0.02	0.09	51,876	10,302	41,574
Physician / Gastroenterology	0.05	0.03	0.07	48,006	14,172	33,834
Physician / Hospice and palliative care	0.04	0.01	0.08	42,132	5,224	36,908
Physician / Hematology/oncology	0.04	0.02	0.06	39,301	10,618	28,683
Physician / Pediatric medicine	0.04	0.03	0.05	38,347	14,157	24,189
Physician / Endocrinology	0.03	0.01	0.05	27,914	3,578	24,336



**Table 3B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with Asthma, 2015**

Measure	All	Without	With COPD	All	Without	With COPD
	Beneficiaries	COPD as a comorbidity	as a comorbidity	Beneficiaries	COPD as a comorbidity	as a comorbidity
Non-E&M Practitioner Reimbursement	PBPM (\$)			Total (\$)		
All Physicians & Practitioners	93.56	88.33	100.60	91,311,152	42,225,296	49,085,856
Primary Care Physician	2.91	2.26	3.60	2,837,027	1,079,950	1,757,077
Other physicians	62.95	57.01	70.06	61,437,056	27,253,756	34,183,300
Other practitioners	17.36	17.54	17.54	16,942,022	8,382,396	8,559,626
Other providers	10.34	11.52	9.40	10,095,047	5,509,194	4,585,853
By specialty code						
Ambulatory surgical center	10.18	11.34	9.25	9,935,435	5,421,791	4,513,644
Physician / Orthopedic surgery	8.85	9.00	8.87	8,634,306	4,303,977	4,330,330
Physical therapist in private practice	7.12	8.47	5.95	6,953,240	4,049,017	2,904,223
Physician / Anesthesiology	6.42	5.94	7.02	6,268,942	2,841,847	3,427,094
Physician / Ophthalmology	5.57	5.54	5.71	5,432,934	2,646,105	2,786,829
Physician / General surgery	4.59	3.96	5.31	4,483,835	1,892,142	2,591,692
Physician / Dermatology	4.41	4.43	4.48	4,307,539	2,119,470	2,188,069
CRNA	3.83	3.36	4.36	3,734,396	1,605,890	2,128,507
Podiatry	3.65	3.06	4.30	3,561,631	1,465,077	2,096,554
Physician / Radiation oncology	3.54	3.10	4.04	3,456,468	1,484,103	1,972,366
Physician / Cardiology	3.06	1.65	4.50	2,983,631	789,636	2,193,995
Physician / Gastroenterology	2.84	2.72	3.01	2,768,588	1,298,206	1,470,381
Physician / Otolaryngology	2.74	2.73	2.81	2,672,146	1,302,845	1,369,301
Physician / Urology	2.40	2.16	2.68	2,337,980	1,031,504	1,306,475
Physician / Neurosurgery	2.22	2.13	2.35	2,165,903	1,017,935	1,147,968
Physician / Vascular surgery	1.58	1.14	2.04	1,543,822	546,278	997,543
Physician / Internal medicine	1.48	1.19	1.79	1,441,354	568,063	873,291
Physician / Diagnostic radiology	1.35	1.10	1.62	1,313,253	524,642	788,612
Physician assistant	1.27	1.24	1.33	1,241,453	592,023	649,430
Physician / Hematology/oncology	1.22	0.76	1.69	1,185,835	363,436	822,399
Physician / Family practice	1.17	0.90	1.46	1,145,743	431,211	714,532
Physician / Interventional Pain Mgt	0.95	0.88	1.03	924,146	421,528	502,618
Physician / Physical medicine/rehab	0.86	0.99	0.76	842,125	473,121	369,005
Physician / Thoracic surgery	0.84	0.47	1.21	816,935	224,288	592,647
Physician / Obstetrics/gynecology	0.82	1.17	0.49	800,872	561,408	239,464

**Table 3B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with Asthma, 2015**

Measure	All	Without	With COPD	All	Without	With COPD
	Beneficiaries	COPD as a comorbidity	as a comorbidity	Beneficiaries	COPD as a comorbidity	as a comorbidity
Non-E&M Practitioner Reimbursement Related to Asthma	PBPM (\$)			Total (\$)		
All Physicians & Practitioners	1.32	0.80	1.86	1,288,254	380,079	908,175
Primary Care Physician	0.23	0.14	0.32	220,580	66,551	154,029
Other physicians	0.96	0.57	1.36	933,011	270,491	662,521
Other practitioners	0.12	0.07	0.17	118,166	34,372	83,794
Other providers	0.02	0.02	0.02	16,497	8,665	7,832
By specialty code						
Physician / Pulmonary disease	0.24	0.13	0.35	235,430	62,389	173,041
Physician / Cardiology	0.15	0.09	0.21	145,393	41,994	103,399
Physician / Internal medicine	0.12	0.08	0.16	115,018	35,993	79,025
Physician / Allergy/immunology	0.11	0.13	0.10	111,702	60,988	50,714
Physician / Emergency medicine	0.10	0.04	0.16	99,347	20,282	79,065
Physician / Family practice	0.10	0.06	0.14	95,661	27,454	68,207
Physician / Anesthesiology	0.08	0.04	0.13	82,108	17,203	64,905
Physician / Otolaryngology	0.06	0.04	0.07	56,089	20,114	35,976
CRNA	0.06	0.03	0.09	56,005	13,388	42,617
Physician / Critical care (intensivists)	0.03	0.02	0.05	33,334	7,787	25,546
Physician / General surgery	0.03	0.00	0.06	32,908	2,191	30,717
Nurse practitioner	0.03	0.02	0.04	29,355	9,913	19,443
Physician / Interventional cardiology	0.03	0.02	0.04	29,329	10,268	19,061
Physician / Thoracic surgery	0.02	0.01	0.04	23,794	2,600	21,194
Physician assistant	0.02	0.01	0.02	17,543	6,123	11,420
Physician / Diagnostic radiology	0.02	0.00	0.03	16,709	1,885	14,824
Ambulatory surgical center	0.01	0.02	0.01	12,577	8,027	4,550
Physical therapist in private practice	0.01	0.01	0.01	11,640	4,554	7,086
Physician / Infectious disease	0.01	0.01	0.01	10,485	3,477	7,008
Physician / General practice	0.01	<0.01	0.01	9,454	3,028	6,426
Physician / Cardiac surgery	0.01	<0.01	0.02	8,905	597	8,309
Physician / Gastroenterology	0.01	0.01	0.01	8,741	5,136	3,606
Physician / Cardiac electrophysiology	0.01	0.01	0.01	7,503	2,606	4,897
Related non-E&M 83 Physician / Hematology/oncology	<0.01	<0.01	<0.01	4,159	1,961	2,198
Physician / Pediatric medicine	<0.01	0.01	<0.01	3,764	3,343	421

**Table 3B: Medicare Reimbursement for FFS Beneficiaries Previously Diagnosed with Asthma, 2015**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>Other Part B Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Outpatient Emergency Department	36.06	26.79	45.87	35,191,005	12,808,650	22,382,355
Related to Asthma	19.27	14.02	24.81	18,810,773	6,703,840	12,106,932
Lab and tests	41.76	34.79	49.45	40,760,056	16,631,287	24,128,769
Part B drugs	0.56	0.30	0.82	542,618	142,148	400,470
Durable Medical Equipment	65.54	35.96	95.87	63,968,722	17,191,736	46,776,986
Other Part B services	252.28	210.52	298.36	246,218,057	100,635,218	145,582,839
<b>Part A Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Inpatient	768.59	396.52	1148.84	750,118,912	189,548,009	560,570,903
Related to Asthma	559.16	287.45	836.80	545,717,599	137,408,276	408,309,323
Skilled Nursing Facility	184.35	78.25	292.06	179,917,090	37,406,274	142,510,816
Home Health	128.36	62.73	195.28	125,273,359	29,988,601	95,284,758
Hospice	27.67	13.39	42.22	27,001,181	6,400,899	20,600,282
<b>Total Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Part A and B	1858.84	1139.08	2602.05	1,814,163,689	544,507,531	1,269,656,158
Part A	1108.96	550.90	1678.40	1,082,310,542	263,343,782	818,966,760
Part B	749.87	588.18	923.65	731,853,147	281,163,748	450,689,398

**SOURCE:** Medicare 5-percent Limited Data Set

**Notes:** Includes FFS Beneficiaries with Medicare Part A & B coverage for all eligible months in CY2014 and one year following diagnosis. Excludes beneficiaries with ESRD and those residing outside the 50 States or DC. To be included, the beneficiary must have had some months of FFS eligibility during the year prior to the earliest diagnosis supporting the condition prior to 2015.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

Identification of asthma-related claim or lines contain a diagnosis code identified as a "trigger," "relevant," or "sequelae" diagnosis for asthma in the Episode Grouper for Medicare. Evaluation and management services defined by BETOS code Mxx.

**Table 3C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with Asthma in 2014**

Measure	All	Without	With COPD	All	Without	With COPD
	Beneficiaries	COPD as a comorbidity	as a comorbidity	Beneficiaries	COPD as a comorbidity	as a comorbidity
Number of beneficiaries	83,000	40,532	42,468			
Months of eligibility in 2014	975,968	478,024	497,944			
Utilization	Events per 1,000 beneficiary months			Total number of events		
E&M visits (excludes FQHC/RHC/outpatient)	2,404.9	1,838.7	2,948.5	2,347,154	878,956	1,468,198
Primary care physicians	845.8	558.6	1,121.5	825,510	267,044	558,466
Other physicians	1,101.9	886.8	1,308.5	1,075,440	423,898	651,542
Other practitioners	401.3	342.2	458.2	391,697	163,559	228,138
Other Part B providers	55.8	51.2	60.4	54,507	24,455	30,052
Acute hospital inpatient stays	67.2	34.1	98.9	65,575	16,304	49,271
Related to Asthma	47.1	24.4	68.8	45,947	11,679	34,268
For septicemia	5.0	2.2	7.7	4,873	1,029	3,844
Emergency Department visits	159.6	107.7	209.4	155,771	51,482	104,289
Visits leading to an inpatient admission	50.5	22.5	77.3	49,255	10,776	38,479
Outpatient	109.1	85.2	132.2	106,516	40,706	65,810
Emergency Department visits related to Asthma	86.3	54.9	116.5	84,263	26,230	58,033
Visits leading to an inpatient admission	35.7	16.1	54.6	34,864	7,690	27,174
Outpatient ED visits	50.6	38.8	62.0	49,399	18,540	30,859
Observation stays	22.9	13.6	31.9	22,374	6,499	15,875
Observation stays leading to an inpatient admission	6.7	3.2	10.1	6,544	1,514	5,030
Outpatient observation stays	16.2	10.4	21.8	15,830	4,985	10,845
Observation stays related to Asthma	15.7	9.7	21.5	15,309	4,621	10,688
Stays leading to an inpatient admission	4.5	2.2	6.7	4,396	1,059	3,337
Outpatient stays	11.2	7.5	14.8	10,913	3,562	7,351
Skilled Nursing Facility stays	17.7	7.2	27.8	17,292	3,436	13,856
Home Health visits (unique service dates)	677.6	313.9	1,026.7	661,307	150,045	511,262
Hospice admissions	4.2	2.1	6.3	4,125	1,010	3,115

**Table 3C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with Asthma in 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>E&amp;M Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	186.60	128.87	246.97	182,114,728	61,605,120	120,509,608
Primary care physician	65.49	40.79	91.02	63,911,385	19,499,761	44,411,624
Other physician	96.66	68.43	126.29	94,332,760	32,710,809	61,621,950
Other practitioner	21.76	17.23	26.64	21,235,663	8,236,414	12,999,249
Other provider	2.70	2.42	3.03	2,634,920	1,158,135	1,476,785
By specialty code						
Physician / Internal medicine	15.18	10.77	22.94	3,184,854	1,440,196	1,744,658
Physician / Family practice	6.79	5.44	9.14	1,423,465	727,947	695,518
Physician / Emergency medicine	5.00	3.57	7.53	1,049,763	476,944	572,818
Physician / Cardiology	4.26	2.93	6.58	892,918	392,328	500,590
Physician / Pulmonary disease	4.14	1.90	8.09	869,430	254,312	615,118
Nurse practitioner	3.00	2.38	4.10	629,876	317,911	311,965
Physician / Ophthalmology	2.39	2.44	2.29	500,928	326,886	174,043
Physician / Psychiatry	2.03	2.02	2.04	425,187	270,311	154,876
Physician assistant	1.61	1.36	2.05	337,930	181,739	156,191
Physician / Nephrology	1.31	0.93	1.97	274,111	124,043	150,069
Physician / Neurology	1.28	1.15	1.51	268,352	153,559	114,793
Physician / Hematology/oncology	1.24	0.97	1.73	261,140	129,577	131,562
Physician / Infectious disease	1.24	0.77	2.07	260,687	103,382	157,305
Physician / Orthopedic surgery	1.20	1.23	1.15	252,660	165,115	87,544
Physician / Physical medicine/rehab	1.14	0.91	1.53	238,327	122,111	116,216
Physician / Gastroenterology	1.10	0.91	1.44	231,562	122,248	109,314
Clinical psychologist	0.96	0.89	1.08	200,622	118,589	82,033
Podiatry	0.96	0.87	1.10	200,351	116,397	83,955
Optometry	0.92	0.89	0.98	193,116	118,622	74,495
Physician / General surgery	0.91	0.73	1.24	191,450	97,162	94,288
Physician / Urology	0.87	0.83	0.94	181,629	110,330	71,299
Licensed clinical social worker	0.83	0.89	0.72	174,452	119,424	55,027
Physician / Otolaryngology	0.71	0.71	0.72	149,398	94,584	54,814
Physician / Dermatology	0.70	0.76	0.58	145,962	101,581	44,381
Physician / Critical care (intensivists)	0.67	0.36	1.22	140,413	47,694	92,718

**Table 3C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with Asthma in 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>E&amp;M Reimbursement Related to Asthma</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	8.74	4.91	15.46	1,833,105	656,849	1,176,257
Primary Care Physician	3.51	1.88	6.39	737,320	251,049	486,271
Other physicians	4.78	2.76	8.32	1,002,202	368,987	633,216
Other practitioners	0.45	0.28	0.74	93,477	36,813	56,664
Other providers	0.00	0.00	0.00	106	0	106
By specialty code	0.00	0.00	0.00	0	0	0
Physician / Internal medicine	2.66	1.36	4.96	558,948	181,429	377,519
Physician / Pulmonary disease	1.97	0.99	3.68	412,267	132,539	279,729
Physician / Emergency medicine	1.14	0.69	1.94	239,148	91,596	147,551
Physician / Family practice	0.79	0.49	1.32	166,736	66,178	100,558
Physician / Cardiology	0.66	0.45	1.03	138,173	59,992	78,181
Physician / Critical care (intensivists)	0.38	0.19	0.71	79,871	26,068	53,803
Nurse practitioner	0.28	0.17	0.47	57,702	22,302	35,400
Physician assistant	0.17	0.11	0.27	34,629	14,435	20,194
Physician / Infectious disease	0.16	0.07	0.32	34,518	9,842	24,677
Physician / Allergy/immunology	0.10	0.13	0.06	22,021	17,821	4,200
Physician / Neurology	0.05	0.03	0.07	9,874	4,237	5,636
Physician / General surgery	0.04	0.02	0.08	8,319	2,523	5,796
Physician / Nephrology	0.04	0.01	0.08	8,164	1,757	6,407
Physician / Interventional cardiology	0.04	0.02	0.06	8,087	3,168	4,919
Physician / Anesthesiology	0.04	0.02	0.06	7,352	2,494	4,858
Physician / General practice	0.03	0.01	0.07	6,637	1,444	5,193
Physician / Physical medicine/rehab	0.03	0.02	0.04	6,199	2,911	3,288
Physician / Geriatric medicine	0.02	0.01	0.04	5,000	1,998	3,002
Physician / Otolaryngology	0.02	0.02	0.02	4,692	3,070	1,622
Physician / Cardiac electrophysiology	0.02	0.02	0.02	3,860	2,375	1,485
Physician / Gastroenterology	0.02	0.01	0.03	3,492	1,516	1,976
Physician / Hospice and palliative care	0.01	<0.01	0.02	1,808	573	1,235
Physician / Osteo. Manip. therapy	0.01	<0.01	0.02	1,747	551	1,196
Physician / Hematology/oncology	0.01	<0.01	0.01	1,694	566	1,128
Physician / Psychiatry	0.01	<0.01	0.01	1,464	628	836

**Table 3C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with Asthma in 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	39.53	37.65	42.84	8,293,152	5,034,256	3,258,896
Primary Care Physician	1.15	1.02	1.37	240,510	136,228	104,281
Other physicians	26.43	24.70	29.46	5,543,652	3,302,958	2,240,693
Other practitioners	6.92	6.70	7.30	1,450,712	895,457	555,255
Other providers	5.04	5.23	4.72	1,058,278	699,613	358,666
By specialty code						
Ambulatory surgical center	4.98	5.18	4.63	1,045,455	692,968	352,487
Physical therapist in private practice	3.11	3.29	2.79	652,591	440,546	212,045
Physician / Orthopedic surgery	3.04	3.15	2.84	636,724	420,766	215,958
Physician / Anesthesiology	2.74	2.64	2.91	574,935	353,647	221,289
Physician / Ophthalmology	2.47	2.45	2.50	517,939	327,500	190,439
Physician / Dermatology	2.05	2.05	2.06	430,850	273,826	157,024
Physician / General surgery	2.04	1.90	2.28	426,959	253,490	173,468
Physician / Radiation oncology	1.98	1.78	2.32	414,978	238,406	176,572
CRNA	1.50	1.36	1.74	314,238	181,858	132,380
Podiatry	1.31	1.10	1.69	275,826	147,056	128,770
Physician / Gastroenterology	1.10	1.02	1.23	230,325	136,804	93,521
Physician / Cardiology	1.09	0.83	1.55	229,345	111,536	117,809
Physician / Urology	1.02	0.98	1.09	213,804	131,052	82,752
Physician / Otolaryngology	0.99	0.98	1.01	207,735	130,900	76,835
Physician / Neurosurgery	0.96	0.98	0.94	202,288	130,609	71,680
Physician / Vascular surgery	0.66	0.31	1.26	137,658	41,984	95,675
Physician / Diagnostic radiology	0.64	0.42	1.02	133,482	56,251	77,230
Physician / Internal medicine	0.57	0.52	0.67	120,458	69,550	50,908
Physician / Family practice	0.52	0.45	0.63	108,704	60,670	48,034
Physician / Thoracic surgery	0.48	0.37	0.67	99,677	48,988	50,689
Physician / Hematology/oncology	0.47	0.43	0.54	99,075	57,652	41,424
Physician assistant	0.47	0.44	0.51	98,112	58,999	39,114
Physician / Interventional radiology	0.40	0.37	0.47	84,587	48,961	35,626
Physician / Plastic/recon. surgery	0.39	0.36	0.44	81,701	48,494	33,207
Physician / Pain Management	0.35	0.38	0.32	74,189	50,163	24,026

**Table 3C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with Asthma in 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>Non-E&amp;M Practitioner Reimbursement Related to Asthma</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
All Physicians & Practitioners	0.51	0.31	0.85	106,568	41,550	65,018
Primary Care Physician	0.05	0.03	0.07	10,141	4,506	5,635
Other physicians	0.40	0.23	0.72	84,956	30,188	54,768
Other practitioners	0.05	0.05	0.05	10,660	6,542	4,118
Other providers	<0.01	<0.01	0.01	811	315	497
By specialty code						
Physician / Emergency medicine	0.08	0.04	0.16	17,373	5,555	11,818
Physician / Cardiology	0.07	0.06	0.08	14,469	8,232	6,236
Physician / Pulmonary disease	0.06	0.03	0.13	13,346	3,470	9,876
Physician / Anesthesiology	0.04	0.02	0.08	9,178	3,192	5,986
Physician / Internal medicine	0.03	0.02	0.05	6,377	2,358	4,019
Physician / General surgery	0.03	0.01	0.07	6,165	965	5,200
Physician / Otolaryngology	0.02	0.02	0.03	4,816	2,700	2,115
CRNA	0.02	0.01	0.04	4,673	1,372	3,302
Physician / Critical care (intensivists)	0.02	0.01	0.03	4,204	1,560	2,644
Physical therapist in private practice	0.02	0.03	0.00	3,824	3,824	0
Physician / Family practice	0.02	0.02	0.02	3,619	2,065	1,554
Physician / Thoracic surgery	0.01	0.00	0.03	2,535	0	2,535
Physician / Interventional cardiology	0.01	0.01	0.02	2,434	1,065	1,368
Physician / Diagnostic radiology	0.01	0.01	0.02	2,417	1,104	1,314
Physician / Infectious disease	0.01	0.00	0.03	2,147	0	2,147
Nurse practitioner	0.01	0.01	0.01	1,583	1,035	548
Physician / Cardiac electrophysiology	0.01	0.01	0.01	1,250	837	412
Physician / Gastroenterology	0.01	<0.01	0.01	1,060	181	879
Physician / Allergy/immunology	<0.01	<0.01	0.00	865	535	331
Ambulatory surgical center	<0.01	<0.01	0.01	645	163	481
Physician assistant	<0.01	<0.01	<0.01	458	311	146
Physician / Hematology/oncology	<0.01	<0.01	0.00	441	441	0
Physician / Cardiac surgery	<0.01	0.00	0.01	382	0	382
Physician / Colorectal surgery	<0.01	0.00	<0.01	352	0	352
Physician / Plastic/recon. surgery	<0.01	0.00	<0.01	319	0	319



**Table 3C: Medicare Reimbursement One Year Following Diagnosis, FFS Beneficiaries Diagnosed with Asthma in 2014**

Measure	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity	All Beneficiaries	Without COPD as a comorbidity	With COPD as a comorbidity
<b>Other Part B Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Outpatient Emergency Department	11.88	9.66	15.79	2,493,246	1,291,951	1,201,296
Related to Asthma	4.97	3.78	7.08	1,043,532	505,252	538,279
Lab and tests	16.46	14.50	19.91	3,453,543	1,938,756	1,514,787
Part B drugs	0.15	0.09	0.27	31,757	11,560	20,197
Durable Medical Equipment	20.50	13.12	33.47	4,300,695	1,754,417	2,546,279
Other Part B services	105.55	93.97	125.91	22,143,519	12,565,909	9,577,610
<b>Part A Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Inpatient	300.64	197.47	482.01	63,068,751	26,404,321	36,664,430
Related to Asthma	186.02	111.52	316.99	39,024,535	14,912,241	24,112,295
Skilled Nursing Facility	68.18	42.05	114.12	14,302,762	5,622,327	8,680,435
Home Health	55.10	37.41	86.20	11,559,810	5,002,984	6,556,826
Hospice	19.93	11.78	34.24	4,180,023	1,575,611	2,604,412
<b>Total Reimbursement</b>	<b>PBPM (\$)</b>			<b>Total (\$)</b>		
Part A and B	734.24	537.03	1080.92	154,030,543	71,808,999	82,221,544
Part A	443.85	288.71	716.56	93,111,347	38,605,243	54,506,104
Part B	290.39	248.32	364.36	60,919,197	33,203,756	27,715,440

**Source:** Medicare 5-percent Limited Data Set

**Notes:** Includes Medicare beneficiaries with one or more months of FFS eligibility during the year prior to the earliest diagnosis supporting the condition, and this earliest date must have been in 2014. Excluded are beneficiaries with ESRD and residents outside the 50 states or DC.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

Identification of asthma-related claim or lines contain a diagnosis code identified as a "trigger," "relevant," or "sequelae" diagnosis for asthma in the Episode Grouper for Medicare.

Evaluation and management services defined by BETOS code Mxx.

**Table 4: Medicare Part D Reimbursement, Fee-for-Service Beneficiaries with COPD, Asthma, and COPD-Asthma, 2015**

	COPD			Asthma			COPD & Asthma
	All COPD	Without Asthma Co-morbidity	With Asthma Co-morbidity	All Asthma	Without Asthma Co-morbidity	With Asthma Co-morbidity	
Number of beneficiaries	145,176	76,566	68,610	79,680	38,417	41,263	37,571
Months of coverage/beneficiary	11.4	11.0	11.8	11.8	11.8	11.7	11.7
Reimbursement (\$ PBPM)							
Medicare Part D reimbursement	340.1	283.3	399.4	388.1	321.9	450.1	459.1
Out-of-pocket	54.5	50.9	58.3	58.6	55.0	62.0	61.4
Total	415.9	353.8	480.8	468.4	396.1	536.4	545.1

**SOURCE:** Medicare 2016 Master Beneficiary Summary Files, A/B and Chronic Condition, Accessed from the VRDC

**Notes:** Includes Medicare FFS Beneficiaries with Part D coverage. Excludes beneficiaries with ESRD and those residing outside the 50 States or DC. Chronic conditions identified using CCW condition flags contained in the MBSF Chronic Condition file.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

Table 5: Average Reimbursement for ED Visits for all COPD and/or Asthma Beneficiaries, 2015							
Beneficiary condition	Number of visits	Mean reimbursement per visit (\$)	Reimbursement by percentile (\$)				
			5th	25th	Median	75th	95th
COPD							
Without inpatient admission	180,856	\$575	\$89	\$227	\$394	\$626	\$1,730
With inpatient admission	111,495	\$10,865	\$3,797	\$5,925	\$8,361	\$12,045	\$26,413
Asthma							
Without inpatient admission	120,633	\$539	\$87	\$205	\$373	\$585	\$1,650
With inpatient admission	56,400	\$10,567	\$3,734	\$5,787	\$8,119	\$11,827	\$25,088
Both COPD and asthma							
Without inpatient admission	71,483	\$560	\$90	\$226	\$389	\$606	\$1,681
With inpatient admission	41,121	\$10,593	\$3,840	\$5,911	\$8,212	\$11,788	\$24,833

**Source:** Medicare 5-percent Limited Dataset

**Notes:** Number of events is not inflated to national level. Includes Medicare Part A & B, FFS beneficiaries. Beneficiary population is that with a diagnosis prior to 2015 and used by the CCW to identify the condition. Beneficiaries with ESRD and residing outside the 50 states or DC are excluded.

COPD is defined in the CCW with ICD-9 codes 490, 491.0, 491.1, 491.8, 491.9, 492.0, 492.8, 491.20, 491.21, 491.22, 494.0, 494.1, 496 OR ICD-10 codes J40, J41.0, J41.1, J41.8, J42, J43.0, J43.1, J43.2, J43.8, J43.9, J44.0, J44.1, J44.9, J47.0, J47.1, J47.9.

Asthma is defined in the CCW with ICD-9 codes 493.00, 493.01, 493.02, 493.10, 493.11, 493.12, 493.20, 493.21, 493.22, 493.81, 493.82, 493.90, 493.91, 493.92 OR ICD-10 codes J44.0, J44.1, J44.9, J45.20, J45.21, J45.22, J45.30, J45.31, J45.32, J45.40, J45.41, J45.42, J45.50, J45.51, J45.52, J45.901, J45.902, J45.909, J45.990, J45.991, J45.998.

**Table 6: Distribution of Inpatient Part A Payments and Associated Part B Payments for DRGs Related to COPD and Asthma, 2015**

Table 6: Distribution of Inpatient Part A Payments and Associated Part B Payments for DRGs Related to COPD and Asthma, 2015													
			Percentile Distribution										
			Mean	1st	5th	10th	25th	Median	75th	90th	95th	99th	
DRG	Description	Number of Stays	Inpatient										
190	Chronic obstructive pulmonary disease w MCC	7,434	\$7,237	\$0	\$3,816	\$5,086	\$5,729	\$6,669	\$7,911	\$9,781	\$11,678	\$24,816	
191	Chronic obstructive pulmonary disease w CC	5,711	\$5,689	\$0	\$2,869	\$3,870	\$4,460	\$5,268	\$6,378	\$7,963	\$9,556	\$16,731	
192	Chronic obstructive pulmonary disease w/o CC/MCC	3,419	\$4,457	\$0	\$1,082	\$2,659	\$3,174	\$3,827	\$4,867	\$6,636	\$8,431	\$16,367	
202	Bronchitis & asthma w CC/MCC	1,899	\$5,213	\$0	\$1,224	\$3,547	\$4,112	\$4,892	\$5,992	\$7,499	\$8,847	\$14,887	
203	Bronchitis & asthma w/o CC/MCC	837	\$3,818	\$0	\$0	\$2,242	\$2,799	\$3,373	\$4,453	\$6,036	\$7,315	\$12,481	
			Part B (Physician and Outpatient)										
190	Chronic obstructive pulmonary disease w MCC		\$972	\$0	\$0	\$193	\$445	\$815	\$1,267	\$1,877	\$2,402	\$3,936	
191	Chronic obstructive pulmonary disease w CC		\$768	\$0	\$0	\$114	\$357	\$671	\$1,038	\$1,489	\$1,826	\$2,746	
192	Chronic obstructive pulmonary disease w/o CC/MCC		\$618	\$0	\$0	\$52	\$273	\$514	\$859	\$1,237	\$1,502	\$2,316	
202	Bronchitis & asthma w CC/MCC		\$712	\$0	\$0	\$87	\$312	\$597	\$979	\$1,374	\$1,752	\$2,911	
203	Bronchitis & asthma w/o CC/MCC		\$501	\$0	\$0	\$0	\$225	\$416	\$710	\$1,043	\$1,312	\$1,877	
			Physician										
190	Chronic obstructive pulmonary disease w MCC		\$913	\$0	\$0	\$180	\$415	\$768	\$1,186	\$1,762	\$2,271	\$3,782	
191	Chronic obstructive pulmonary disease w CC		\$719	\$0	\$0	\$110	\$336	\$626	\$982	\$1,395	\$1,737	\$2,582	
192	Chronic obstructive pulmonary disease w/o CC/MCC		\$525	\$0	\$0	\$29	\$234	\$442	\$752	\$1,030	\$1,285	\$1,810	
202	Bronchitis & asthma w CC/MCC		\$664	\$0	\$0	\$82	\$290	\$545	\$911	\$1,309	\$1,593	\$2,654	
203	Bronchitis & asthma w/o CC/MCC		\$457	\$0	\$0	\$0	\$202	\$381	\$649	\$949	\$1,138	\$1,835	
			Outpatient										
190	Chronic obstructive pulmonary disease w MCC		\$58	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$403	\$1,279	
191	Chronic obstructive pulmonary disease w CC		\$49	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$391	\$1,100	
192	Chronic obstructive pulmonary disease w/o CC/MCC		\$93	\$0	\$0	\$0	\$0	\$0	\$0	\$362	\$731	\$1,357	
202	Bronchitis & asthma w CC/MCC		\$47	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$331	\$1,111	
203	Bronchitis & asthma w/o CC/MCC		\$44	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$388	\$957	
			Ratio of Part B to Inpatient										Ratio of means
190	Chronic obstructive pulmonary disease w MCC		14.9%	0.0%	1.0%	3.3%	6.8%	11.8%	18.4%	27.1%	34.8%	58.0%	13.4%
191	Chronic obstructive pulmonary disease w CC		26.0%	0.0%	0.0%	2.6%	6.7%	12.1%	19.0%	27.6%	34.8%	57.9%	13.5%
192	Chronic obstructive pulmonary disease w/o CC/MCC		19.6%	0.0%	0.0%	2.0%	6.7%	12.8%	20.8%	31.2%	42.1%	74.1%	13.9%
202	Bronchitis & asthma w CC/MCC		14.4%	0.0%	0.0%	2.4%	6.2%	11.9%	19.5%	27.7%	35.4%	60.7%	13.7%
203	Bronchitis & asthma w/o CC/MCC		15.1%	0.0%	0.0%	0.2%	5.9%	11.4%	19.4%	31.4%	38.6%	65.4%	13.1%

SOURCE: Medicare 5-percent Limited Dataset

NOTES: Number of events not inflated to national level

Carrier and outpatient claims are associated with an inpatient stay if the claim "from date" is on or after the inpatient admission date and before the inpatient discharge date.

**Table 7A: Top 50 Secondary Diagnoses (ICD-9) Recorded in Inpatient Stays and Stays with Septicemia as a Secondary Diagnosis, DRGs Related to COPD, 2013-2015**

		Total	DRG 190	DRG 191	DRG 192	Percent of Total Stays
			COPD w MCC	COPD w CC	COPD w/o CC/MCC	
Number of Stays		50,765	21,393	17,661	11,711	100.0%
Total diagnoses		698,378	324,295	253,756	120,327	
Secondary Diagnoses (ICD-9)						
491.21	Obstructive chronic bronchitis with (acute) exacerbation	33,071	15,092	10,576	7,403	65.1%
401.9	Unspecified essential hypertension	26,676	10,550	9,294	6,832	52.5%
272.4	Other and unspecified hyperlipidemia	18,914	8,169	6,646	4,099	37.3%
V15.82	Personal history of tobacco use	16,336	7,217	5,709	3,410	32.2%
428.0	Congestive heart failure, unspecified	14,662	8,042	5,221	1,399	28.9%
305.1	Tobacco use disorder	14,202	5,840	4,791	3,571	28.0%
530.81	Esophageal reflux	13,286	5,626	4,877	2,783	26.2%
V46.2	Other dependence on machines, supplemental oxygen	11,956	5,767	4,321	1,868	23.6%
250.00	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled	11,917	5,123	4,276	2,518	23.5%
414.01	Coronary atherosclerosis of native coronary artery	11,580	5,380	4,046	2,154	22.8%
427.31	Atrial fibrillation	10,053	4,972	3,578	1,503	19.8%
491.22	Obstructive chronic bronchitis with acute bronchitis	9,973	3,640	4,075	2,258	19.6%
300.00	Anxiety state, unspecified	9,934	4,167	3,554	2,213	19.6%
486.	Pneumonia, organism unspecified	8,797	8,705	63	29	17.3%
244.9	Unspecified acquired hypothyroidism	8,284	3,589	3,030	1,665	16.3%
311.	Depressive disorder, not elsewhere classified	8,184	3,468	2,937	1,779	16.1%
493.22	Chronic obstructive asthma with (acute) exacerbation	7,644	2,848	3,242	1,554	15.1%
799.02	Hypoxemia	6,629	2,531	2,352	1,746	13.1%
327.23	Obstructive sleep apnea (adult)(pediatric)	6,374	3,057	2,498	819	12.6%
V58.66	Long-term (current) use of aspirin	6,298	2,754	2,279	1,265	12.4%
403.90	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified	6,169	3,021	2,438	710	12.2%
V58.69	Long-term (current) use of other medications	5,374	2,252	1,920	1,202	10.6%
285.9	Anemia, unspecified	5,203	2,531	1,882	790	10.2%
715.90	Osteoarthritis, unspecified whether generalized or localized, site unspecified	4,883	2,074	1,758	1,051	9.6%
414.00	Coronary atherosclerosis of unspecified type of vessel, native or graft	4,731	2,065	1,684	982	9.3%
518.84	Acute and chronic respiratory failure	4,549	4,549	0	0	9.0%
584.9	Acute kidney failure, unspecified	4,531	2,373	2,158	0	8.9%
412.	Old myocardial infarction	4,327	1,955	1,549	823	8.5%

**Table 7A: Top 50 Secondary Diagnoses (ICD-9) Recorded in Inpatient Stays and Stays with Septicemia as a Secondary Diagnosis, DRGs Related to COPD, 2013-2015**

		Total	DRG 190	DRG 191	DRG 192	Percent of Total Stays
			COPD w MCC	COPD w CC	COPD w/o CC/MCC	
V58.61	Long-term (current) use of anticoagulants	4,318	1,956	1,647	715	8.5%
278.00	Obesity, unspecified	4,316	1,820	1,703	793	8.5%
V45.82	Percutaneous transluminal coronary angioplasty status	4,292	1,941	1,541	810	8.5%
276.8	Hypopotassemia	4,235	1,943	1,534	758	8.3%
276.1	Hyposmolality and/or hyponatremia	4,187	1,992	2,195	0	8.2%
338.29	Other chronic pain	4,066	1,718	1,467	881	8.0%
278.01	Morbid obesity	3,998	1,794	1,927	277	7.9%
518.83	Chronic respiratory failure	3,985	1,179	2,806	0	7.8%
V12.54	Personal history of transient ischemic attack (TIA), and cerebral infarction without residual deficits	3,944	1,704	1,429	811	7.8%
V45.81	Aortocoronary bypass status	3,888	1,789	1,373	726	7.7%
V49.86	Do not resuscitate status	3,769	2,041	1,231	497	7.4%
416.8	Other chronic pulmonary heart diseases	3,698	1,995	1,334	369	7.3%
V58.65	Long-term (current) use of steroids	3,401	1,484	1,292	625	6.7%
443.9	Peripheral vascular disease, unspecified	3,382	1,660	1,151	571	6.7%
585.3	Chronic kidney disease, Stage III (moderate)	3,357	1,657	1,321	379	6.6%
V58.67	Long-term (current) use of insulin	3,293	1,436	1,339	518	6.5%
733.00	Osteoporosis, unspecified	3,276	1,382	1,222	672	6.5%
518.81	Acute respiratory failure	3,250	3,250	0	0	6.4%
288.60	Leukocytosis, unspecified	3,225	1,400	1,167	658	6.4%
585.9	Chronic kidney disease, unspecified	3,144	1,494	1,208	442	6.2%
272.0	Pure hypercholesterolemia	3,127	1,337	1,082	708	6.2%
600.00	Hypertrophy (benign) of prostate without urinary obstruction and other lower urinary tract symptom (LUTS)	2,985	1,373	1,029	583	5.9%
<b>Septicemia Secondary Diagnoses</b>						
038.9	Unspecified septicemia	127	127	0	0	0.3%
995.91	Sepsis	123	123	0	0	0.2%

**SOURCE:** Medicare 5-percent Limited Dataset

**NOTES:** Number of events not inflated to national level.

Unit of analysis is the inpatient stay for all Medicare FFS beneficiaries with any Part A coverage during the years of interest. Beneficiaries may be represented more than once in the data.

Counts exclude admissions during the final quarter of CY2015, to avoid inclusion of ICD-10 diagnostic codes.

**Table 7B: Top 50 Secondary Diagnoses (ICD-9) Recorded in Inpatient Stays and Stays with Septicemia as a Secondary Diagnosis, DRGs Related to Asthma, 2013-2015**

		Total	DRG 202	DRG 203	Percent of Total Stays
			BRONCHITIS & ASTHMA W CC/MCC	BRONCHITIS & ASTHMA W/O CC/MCC	
	Number of Stays	7,942	5,335	2,607	100.0%
	Total diagnoses	99,215	73,590	25,625	
Secondary Diagnoses (ICD-9)					
401.9	Unspecified essential hypertension	4,089	2,578	1,511	51.5%
466.0	Acute bronchitis	3,604	2,589	1,015	45.4%
493.92	Asthma, unspecified, with (acute) exacerbation	2,982	1,901	1,081	37.5%
272.4	Other and unspecified hyperlipidemia	2,796	1,943	853	35.2%
530.81	Esophageal reflux	2,119	1,440	679	26.7%
250.00	Diabetes mellitus without mention of complication, type II or unspecified type, not stated as uncontrolled	1,999	1,356	643	25.2%
244.9	Unspecified acquired hypothyroidism	1,480	1,060	420	18.6%
428.0	Congestive heart failure, unspecified	1,409	1,229	180	17.7%
427.31	Atrial fibrillation	1,307	971	336	16.5%
414.01	Coronary atherosclerosis of native coronary artery	1,243	901	342	15.7%
V15.82	History of tobacco use	1,152	791	361	14.5%
311.	Depressive disorder, not elsewhere classified	1,131	736	395	14.2%
300.00	Anxiety state, unspecified	1,085	735	350	13.7%
490.	Bronchitis, not specified as acute or chronic	971	656	315	12.2%
327.23	Obstructive sleep apnea (adult)(pediatric)	894	702	192	11.3%
403.90	Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified	892	712	180	11.2%
799.02	Hypoxemia	870	586	284	11.0%
V58.66	Long-term (current) use of aspirin	853	591	262	10.7%
278.00	Obesity, unspecified	805	553	252	10.1%
276.8	Hypopotassemia	799	592	207	10.1%
278.01	Morbid obesity	796	698	98	10.0%
V58.69	Long-term (current) use of other medications	795	531	264	10.0%
285.9	Anemia, unspecified	739	589	150	9.3%
715.90	Osteoarthritis, unspecified whether generalized or localized, site unspecified	732	468	264	9.2%
584.9	Acute kidney failure, unspecified	700	700	0	8.8%
493.90	Asthma, unspecified, unspecified	680	453	227	8.6%

<b>Table 7B: Top 50 Secondary Diagnoses (ICD-9) Recorded in Inpatient Stays and Stays with Septicemia as a Secondary Diagnosis, DRGs Related to Asthma, 2013-2015</b>					
		Total	DRG 202	DRG 203	Percent of Total Stays
			BRONCHITIS & ASTHMA W CC/MCC	BRONCHITIS & ASTHMA W/O CC/MCC	
V58.61	Long-term (current) use of anticoagulants	675	510	165	8.5%
V12.54	Personal history of transient ischemic attack (TIA), and cerebral infarction without residual deficits	660	461	199	8.3%
276.1	Hyposmolality and/or hyponatremia	647	647	0	8.1%
276.51	Dehydration	622	432	190	7.8%
V58.67	Long-term (current) use of insulin	583	446	137	7.3%
414.00	Coronary atherosclerosis of unspecified type of vessel, native or graft	577	405	172	7.3%
294.20	Dementia, unspecified, without behavioral disturbance	555	387	168	7.0%
305.1	Tobacco use disorder	509	340	169	6.4%
599.0	Urinary tract infection, site not specified	508	508	0	6.4%
V45.81	Aortocoronary bypass status	508	366	142	6.4%
272.0	Pure hypercholesterolemia	496	320	176	6.2%
V45.82	Percutaneous transluminal coronary angioplasty status	485	343	142	6.1%
585.3	Chronic kidney disease, Stage III (moderate)	480	384	96	6.0%
V14.0	Personal history of allergy to Penicillin	479	328	151	6.0%
338.29	Other chronic pain	470	315	155	5.9%
733.00	Osteoporosis, unspecified	461	338	123	5.8%
585.9	Chronic kidney disease, unspecified	459	355	104	5.8%
V45.01	Cardiac pacemaker	458	334	124	5.8%
288.60	Leukocytosis, unspecified	452	327	125	5.7%
412.	Old myocardial infarction	439	338	101	5.5%
V49.86	Bariatric surgery status	431	335	96	5.4%
V12.51	Personal history of venous thrombosis and embolism	404	299	105	5.1%
V58.65	Long-term (current) use of steroids	403	286	117	5.1%
486.	Pneumonia, organism unspecified	367	367	0	4.6%
<b>Septicemia Secondary Diagnoses</b>					
995.91	Sepsis	24	24	0	0.3%
038.9	Unspecified septicemia	22	22	0	0.3%

**SOURCE:** Medicare 5-percent Limited Dataset

**NOTES:** Number of events not inflated to national level.

Unit of analysis is the inpatient stay for all Medicare FFS beneficiaries with any Part A coverage during the years of interest. Beneficiaries may be represented more than once in the data.

Counts exclude admissions during the final quarter of CY2015, to avoid inclusion of ICD-10 diagnostic codes.



**Table 8: Average Length of Stay and Medicare Reimbursement for Selected DRGs, 2015**

DRG	Number of stays	Distribution of LOS by percentile				Distribution of reimbursement by percentile			
		Mean	25th	Median	75th	Mean	25th	Median	75th
870 Septicemia w MV 96+ hours	1,937	15.1	8	13	19	\$41,988	\$32,266	\$37,551	\$46,576
871 Septicemia w/o MV 96+ hours w MCC	27,849	6.5	3	5	8	\$11,932	\$9,483	\$10,852	\$12,926
872 Septicemia w/o MV 96+ hours w/o MCC	8,250	4.4	2	4	5	\$6,586	\$5,167	\$6,116	\$7,397

**SOURCE:** Medicare 5-percent Limited Dataset

**NOTE:** Number of events not inflated to national level. MV = Mechanical ventilation.

Unit of analysis is the inpatient stay for all Medicare FFS beneficiaries with any Part A coverage during the years of interest. Beneficiaries may be represented more than once in the data.

**Table 9. ED Visits and Inpatient Stays for Beneficiaries with COPD or Asthma, by whether COPD / Asthma is the Principal or Secondary Diagnosis Code, 2015**

		Principal Diagnosis		Secondary Diagnosis		Not present	
	Total stays	Number of stays	Percent of stays	Number of stays	Percent of stays	Number of stays	Percent of stays
<b>COPD</b>							
ED visits	183,237	12,653	7%	50,953	28%	119,631	65%
Inpatient stays	163,228	13,538	8%	89,613	55%	60,077	37%
<b>Asthma</b>							
ED visits	122,392	5,866	5%	32,223	26%	84,303	69%
Inpatient stays	84,054	4,422	5%	37,997	45%	41,635	50%

**Source:** Medicare 5-percent Limited Dataset

**Notes:** Number of events not inflated to national level. Includes Medicare Part A & B, FFS beneficiaries. Beneficiary population is that with a diagnosis prior to 2015 and used by the CCW to identify the condition.

Relevant codes are as follows:

COPD = 491.xx, 492.xx, 494.xx, 496.xx or corresponding ICD-10 codes.

Asthma = 493.xx or or corresponding ICD-10 codes.

**Table 10A: Beneficiaries with COPD and/or Asthma for Whom Telemonitoring Was Billed, by HCPCS Code and Claim Type, 2015**

HCPCS Code and Description of Code, by descending number of beneficiaries		Unique number of beneficiaries	Number of beneficiaries with COPD or Asthma		Total Reimbursement		
			COPD	Asthma	Total (Physician & Outpatient)	Physician	Outpatient
Q3014	Telehealth originating site facility fee	507	403	249	\$27,666	\$17,083	\$10,584
99213	Level 3 outpatient visit for evaluation and management of established patient with problem of low to moderate severity, including expanded history and medical decision making of low complexity - typical time with patient and/or family 15 minutes	318	249	160	\$31,211	\$30,840	\$371
99214	Level 4 outpatient visit for evaluation and management of established patient with problem of moderate to high severity, including detailed history and medical decision making of moderate complexity - typical time with patient and/or family 25 minutes	248	201	117	\$30,718	\$29,556	\$1,162
90792	Psychiatric diagnostic evaluation with medical services	161	125	91	\$17,070	\$16,982	\$87
G0425	Emergency Department or initial inpatient telehealth consultation	113	97	52	\$9,142	\$9,048	\$94
99212	Level 2 outpatient visit for evaluation and management of established patient with self-limited and/or minor problem, including problem-focused history and physical examination, and straightforward medical decision-making - typical time with patient and/or family 10 minutes or less	77	56	44	\$3,610	\$3,591	\$19
G0427	Emergency Department or initial inpatient telehealth consultation	70	61	31	\$11,010	\$11,010	\$0
G0426	Emergency Department or initial inpatient telehealth consultation	43	40	16	\$3,753	\$3,753	
90791	Psychiatric diagnostic evaluation	36	32	18	\$3,239	\$3,153	\$86
99215	Level 5 outpatient visit for evaluation and management of established patient with problem of moderate to high severity, including comprehensive history and physical examination - typical time with patient and/or family 40 minutes	34	26	18	\$2,588	\$2,419	\$169
G0407	Follow-up inpatient telehealth consultation, Intermediate	34	30	12	\$5,906	\$5,906	
G0408	Follow-up inpatient telehealth consultation, complex	33	31	9	\$4,569	\$4,569	
99232	Level 2 subsequent hospital care for evaluation and management of patient, including expanded problem focused interval history and medical decision making of moderate complexity - typical time 25 minutes	32	24	14	\$2,531	\$2,531	
G0406	Follow-up inpatient telehealth consultation, limited	29	28	10	\$2,327	\$2,327	

**Table 10A: Beneficiaries with COPD and/or Asthma for Whom Telemonitoring Was Billed, by HCPCS Code and Claim Type, 2015**

HCPCS Code and Description of Code, by descending number of beneficiaries		Unique number of beneficiaries	Number of beneficiaries with COPD or Asthma		Total Reimbursement		
			COPD	Asthma	Total (Physician & Outpatient)	Physician	Outpatient
99309	Level 3 subsequent nursing facility care for evaluation and management of patient, including detailed interval history and medical decision making of moderate complexity - typical time 25 minutes	27	24	4	\$2,654	\$2,654	
90832	Psychotherapy with family member - 30 minutes	24	23	12	\$7,647	\$7,348	\$299
99204	Level 4 outpatient visit for evaluation and management of new patient with problem of moderate to high severity, including comprehensive history and physical examination, and medical decision making of moderate complexity - typical time with patient and/or family 45 minutes	23	19	12	\$2,517	\$2,222	\$295
99233	Level 3 subsequent hospital care for evaluation and management of patient, including detailed interval history and medical decision making of moderate complexity - typical time 25 minutes	19	17	6	\$1,894	\$1,894	
90833	Psychotherapy with family member - 30 minutes with evaluation and management service	18	11	12	\$1,641	\$1,641	\$0
99205	Level 5 outpatient visit for evaluation and management of new patient with problem of moderate to high severity, including comprehensive history and physical examination, and medical decision making of high complexity - typical time with patient and/or family 60 minutes	16	12	8	\$2,229	\$2,229	
90837	Psychotherapy with family member- 60 minutes	15	11	6	\$1,852	\$1,852	
99203	Level 3 outpatient visit for evaluation and management of new patient with problem of moderate severity, including detailed history and physical examination, and medical decision making of low complexity - typical time with patient and/or family 30 minutes	15	12	8	\$955	\$955	
90834	Psychotherapy with family member - 45 minutes	13	11	8	\$3,775	\$3,775	
99308	Level 2 subsequent nursing facility care for evaluation and management of patient, including expanded problem focused interval history and medical decision making of low complexity - typical time 15 minutes	12	12	1	\$575	\$575	
99202	Level 2 outpatient visit for evaluation and management of new patient with problem of low to moderate severity, including expanded problem-focused history and physical examination, and straightforward medical decision-making - typical time with patient and/or family 20 minutes	8	5	3	\$447	\$447	

**Table 10A: Beneficiaries with COPD and/or Asthma for Whom Telemonitoring Was Billed, by HCPCS Code and Claim Type, 2015**

HCPCS Code and Description of Code, by descending number of beneficiaries		Unique number of beneficiaries	Number of beneficiaries with COPD or Asthma		Total Reimbursement		
			COPD	Asthma	Total (Physician & Outpatient)	Physician	Outpatient
99211	Level 1 outpatient visit for evaluation and management of established patient with minimal presenting problem, without history, physical examination, or medical decision making - typical time less than 5 minutes	7	3	5	\$113	\$113	
99307	Level 1 subsequent nursing facility care for evaluation and management of patient, including problem focused interval history and physical examination - typical time 10 minutes	7	4	5	\$488	\$488	
G0463	Hospital outpatient clinic visit for assessment and management of a patient	7	6	3	\$598		\$598
90960	ESRD related monthly services	6	6	3	\$6,173	\$6,173	
99231	Level 1 subsequent hospital care for evaluation and management of patient, including detailed history and physical examination, and medical decision making of low complexity - typical time 15 minutes	6	5	2	\$259	\$259	
99310	Level 4 subsequent nursing facility care for evaluation and management of patient, including comprehensive interval history and medical decision making of high complexity - typical time 35 minutes	6	6	2	\$678	\$678	
G0459	Inpatient telehealth pharmacologic management, including prescription, use, and review of medication with no more than minimal medical psychotherapy	6	5	3	\$513	\$513	
G0467	Federally qualified health center (fqhc) visit, established patient; a medically-necessary, face-to-face encounter (one-on-one) between an established patient and a fqhc practitioner during which time one or more fqhc services are rendered and includes a typical bundle of Medicare-covered services that would be furnished per diem to a patient receiving a fqhc visit	5	5	2	\$544		\$544
90836	Psychotherapy with family member - 45 minutes with evaluation and management service	4	3	2	\$441	\$441	\$0
99201	Level 1 outpatient visit for evaluation and management of new patient with self-limited and/or minor problem, including problem-focused history and physical examination, and straightforward medical decision-making - typical time with patient and/or family 10 minutes or less	3	2	1	\$103	\$103	
90961	ESRD related monthly services	2	2	0	\$1,757	\$1,757	
80048	Basic metabolic panel	1	0	1	\$11		\$11

**Table 10A: Beneficiaries with COPD and/or Asthma for Whom Telemonitoring Was Billed, by HCPCS Code and Claim Type, 2015**

HCPCS Code and Description of Code, by descending number of beneficiaries		Unique number of beneficiaries	Number of beneficiaries with COPD or Asthma		Total Reimbursement		
			COPD	Asthma	Total (Physician & Outpatient)	Physician	Outpatient
97012	Application of mechanical traction	1	1	0	\$0	\$0	
97014	Application of electrical stimulation	1	0	1	\$0	\$0	
97110	Therapeutic exercises to develop strength and endurance, range of motion and flexibility	1	1	0	\$0	\$0	
97802	Medical nutrition therapy, initial assessment and intervention	1	1	0	\$83	\$83	
99220	Level 3 initial observation care for evaluation and management of patient with problem of high severity, including comprehensive history and physical examination, and medical decision making of high complexity - typical time 70 minutes	1	1	0	\$141		\$141
99401	Preventive medicine counseling and risk factor reduction intervention for individual - approximately 15 minutes	1	0	1	\$0	\$0	
99406	Intermediate tobacco use cessation counseling for individual - 3-10 minutes	1	1	0	\$18	\$18	
99495	Transitional care management service including communication with patient and/or caregiver within 2 business days of discharge, medical decision making of moderate complexity, and face to face visit with 14 days after discharge	1	1	1	\$121	\$121	
99496	Transitional care management service including communication with patient and/or caregiver, medical decision making of high complexity, and face to face visit after discharge	1	1	0	\$179	\$179	

Source: Medicare 5-percent Limited Dataset

Notes: Number of events not inflated to national level. Includes Medicare Part A & B, FFS beneficiaries. Beneficiary population is that with a diagnosis prior to 2015 and used by the CCW to identify the condition. Unique number of beneficiaries is that with COPD and/or asthma. Telemedicine is indicated by a modifier of GT or GQ for CPT/HCPCS codes or HCPCS codes G0406-G0408, G0425-G0427, or Q3014.

**Table 10B: Medicare Reimbursement for Beneficiaries with COPD and/or Asthma, by Receipt of Telemedicine Services, 2015**

Condition	Number of beneficiaries			Total reimbursement						Telemedicine share of reimbursement
	Total	With telemedicine services	Percent with telemedicine services	Telemedicine			Total			
				Total	Physician	Outpatient	Total	Physician	Outpatient	
All	326,679	1,175	0.4	\$193,745	\$179,284	\$14,461	\$4,929,325,421	\$1,040,735,840	\$707,426,200	3.4%
COPD	252,999	946	0.4	\$163,122	\$150,049	\$13,072	\$4,185,539,925	\$840,417,962	\$566,106,526	3.5%
COPD but not asthma	180,231	606	0.3	\$106,032	\$96,760	\$9,272	\$2,759,671,486	\$556,435,000	\$386,054,434	3.9%
Asthma	146,448	569	0.4	\$87,713	\$82,524	\$5,189	\$2,169,653,935	\$484,300,840	\$321,371,766	2.9%
Asthma but not COPD	73,680	229	0.3	\$30,623	\$29,235	\$1,389	\$743,785,496	\$200,317,877	\$141,319,675	3.1%
COPD and asthma	72,768	340	0.5	\$57,090	\$53,290	\$3,800	\$1,425,868,439	\$283,982,962	\$180,052,091	2.7%

**Source:** Medicare 5-percent Limited Dataset

**Notes:** Number of events not inflated to national level. Includes Medicare Part A & B, FFS beneficiaries. Beneficiary population is that with a diagnosis prior to 2015 and used by the CCW to identify the condition. Telemedicine is indicated by a modifier of GT or GQ for CPT/HCPCS codes or HCPCS codes G0406-G0408, G0425-G0427, or Q3014.

**Table 10C: Distribution of Medicare Reimbursement for Beneficiaries with COPD or Asthma, by Receipt of Telemedicine Services, 2015**

		COPD		Asthma	
		Without telemedicine	With telemedicine	Without telemedicine	With telemedicine
Number of beneficiaries		252,053	946	145,879	569
Total payments	Mean	\$16,477	\$34,397	\$14,741	\$33,818
	25th percentile	\$0	\$5,896	\$0	\$5,961
	Median	\$3,979	\$18,222	\$3,262	\$17,080
	75th percentile	\$18,984	\$47,909	\$15,897	\$45,821
Inpatient payments	Mean	\$7,030	\$16,371	\$6,061	\$16,061
	25th percentile	\$0	\$0	\$0	\$0
	Median	\$0	\$5,430	\$0	\$4,741
	75th percentile	\$5,571	\$23,292	\$3,587	\$22,004
Outpatient payments	Mean	\$2,226	\$5,201	\$2,181	\$5,601
	25th percentile	\$0	\$913	\$0	\$1,173
	Median	\$259	\$2,475	\$233	\$2,762
	75th percentile	\$1,870	\$5,834	\$1,888	\$6,507
Physician/ supplier payments	Mean	\$3,313	\$5,624	\$3,295	\$6,270
	25th percentile	\$0	\$1,765	\$0	\$2,015
	Median	\$1,399	\$3,785	\$1,411	\$4,181
	75th percentile	\$4,255	\$7,189	\$4,329	\$8,179

**Source:** Medicare 5-percent Limited Dataset

**Notes:** Number of events not inflated to national level. Includes Medicare Part A & B, FFS beneficiaries. Beneficiary population is that with a diagnosis prior to 2015 and used by the CCW to identify the condition. Telemedicine is indicated by a modifier of GT or GQ for CPT/HCPCS codes or HCPCS codes G0406-G0408, G0425-G0427, or Q3014.



**Physician-Focused Payment Model Technical Advisory Committee  
LOI: Environmental Scan & Relevant Literature**

**Pulmonary Medicine Associates  
Letter Dated: 10/25/2016  
Letter Received: 10/25/2016**

The COPD and Asthma Monitoring Project (CAMP) is a proposed care model to address inefficiencies in the care of patients with COPD, Asthma and other chronic lung diseases. A population based solution, CAMP will improve patient safety, improve patient care quality and will reduce the cost of care to CMS for this high risk population. We propose to build a sustainable continuous quality improvement infrastructure centered on improved monitoring for patients with COPD and Asthma. We propose to do this by expanding the expertise of an office and hospital based pulmonary and allergy practice, Pulmonary Medicine Associates.

Pulmonary Medicine Associates (PMA) is seeking approval to participate in MACRA using the Oncology Model AAPM as a template. This program is seeking funds for Bluetooth Peak Flow Meter for participants, and a monthly remote monitoring management fee per patient in order to participant in a two-tailed risk sharing model of reimbursement. PMA wishes to qualify CAMP for AAPM designation for us and future medical providers of this service. Risk adjusted targets will be based upon public data contained in the Chronic Conditions database. This service will not replace existing payment methods under MACRA but will be an added new service. PMA is seeking an agreement that does not require a co-payment from Medicare participants of this proposed payment model. The program seeks an exemption for Pharmaceutical Companies and device manufacturers that would allow them to directly provide discount pricing or dispense coupons for heavily discounted medications for Medicare recipients who are participants of this program. Finally, we seek a safe harbor designation from state and federal Stark anti-self referral laws.

Sheet	Table	Contents
Environmental Scan	<a href="#">Table 1</a>	Key documents, timely reports and briefs focusing on Oncology Care Model, PMA, telehealth/telemonitoring, COPD and asthma
Relevant Literature	<a href="#">Table 2</a>	Relevant and related literature materials.

<b>Table 1. Environmental Scan</b>		
<i>Key words: Oncology Care Model; Pulmonary Medicine Associates; PMA telemedicine; Remote Monitoring Asthma; Remote Monitoring OCPD</i>		
<b>Organization</b>	<b>Title</b>	<b>Date</b>
Pulmonary Medicine Associates	<a href="#">Tele ICU Care</a>	Accessed on: 11/2/2016
<b>Purpose/Abstract</b>		
<p><b>Background:</b> According to PMA the total number of intensivists only meets about one eighth of the need, Tele-ICU helps close such gap by providing the technology to hospitals and medical centers to have access to intensivist even if it is not on site. Through this model intensivists can more efficiently see more patients in different locations cuttings costs and saving resources.</p> <p><b>Summary:</b> PMA is one of the pioneer organizations to test and apply the Tele-ICU health care delivery model. Intensivists provide care for up to 170 patients in 10 hospitals from their local hub through Tele-ICU services since 2003. Additionally, some of the services offered by PMA are transition care including home health services.</p>		
<b>Additional Notes/Comments</b>		
<p>This resource is not a specific document or report. The link will direct you to the PMA Tele-ICU Care website.</p>		

<b>Table 1. Environmental Scan</b>		
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<b>Organization</b>	<b>Title</b>	<b>Date</b>
Centers for Medicare & Medicaid Services	Oncology Care Model Methodology	11/1/2016
<b>Purpose/Abstract</b>		
<p><b>Background:</b> The Oncology Care Model (OCM) AAPM is an alternative payment model designed exclusively to improve the health of the Medicare Beneficiaries that are diagnosed and treated for Cancer in the United States. The model aims to align financial incentives in order to improve care coordination, appropriateness of care and access to care for Medicare Beneficiaries that are undergoing chemotherapy.</p> <p><b>Summary:</b> This CMS publication explains the Oncology Care Model (OCM). The OCM is an episode based payment model in which providers must offer enhanced services such as patient navigation and a 24-hour-a-day 7 day-a-week patient access to clinicians with their full medical records among others. The OCM model is a two-tailed risk sharing model of reimbursement. Under the OCM, the incentives are paid in two ways; there is a Monthly Enhanced Oncology Services (MEOS) payment for the duration of an episode; as well as the second payment which is a performance-based payment for episodes of chemotherapy care. One of the main features included in the OCM model is the constant use of data and medical records to drive continuous quality improvement.</p>		
<b>Additional Notes/Comments</b>		

**Table 1. Environmental Scan**

*Key words: Oncology Care Model; Pulmonary Medicine Associates; PMA telemedicine; Remote Monitoring Asthma; Remote Monitoring OCPD*

Organization	Title	Date
Centers for Medicare & Medicaid Services	Oncology Care Model Key Drivers and Changes	8/4/2016

**Purpose/Abstract**

**Background:** Practitioners in OCM will need to make changes in how they organize and deliver care to be successful and achieve the aims of the model, incorporating evidence and best practices in their approaches to these changes.

**Summary:** The Key Drivers and Changes provides a framework for change and improvement for OCM and encourages key corridors (or focus areas) of work. It is not intended to be a checklist for what practices or payers must do, but instead is a starting point for participants to assess and begin redesigning their approach to care to achieve the OCM aims. The Key Drivers and Changes give an overview of how we expect OCM to work and suggest corridors of work for practices and payers. As the model progresses, changes to this document will reflect how practices and payers improve the quality and experience of care and reduce costs in OCM.

**Additional Notes/Comments**

<b>Table 1. Environmental Scan</b>		
<i>Key words: Oncology Care Model; Pulmonary Medicine Associates; PMA telemedicine; Remote Monitoring Asthma; Remote Monitoring OCPD</i>		
<b>Organization</b>	<b>Title</b>	<b>Date</b>
Centers for Medicare & Medicaid Services	<a href="#">Health Care Innovation Awards: Project Profile</a>	Award Year: 2015
<b>Purpose/Abstract</b>		
<p><b>Background:</b> Le Bonheur Children’s Hospital, Division of Community Health and Well Being and the University of Tennessee Health Science Center are collaborating to serve children with high-risk asthma in Memphis/Shelby County, Tennessee.</p> <p><b>Summary:</b> CHAMP features an asthma registry, a repository of critical information on all CHAMP patients that will be accessed by a variety of providers caring for the patients. Additionally, the registry is a means to document all CHAMP activities, track all elements of the CHAMP monitoring plan, and produce reports for use in the PDSA process. Patients receive medical care and assessment by CHAMP physician sub-specialists. The Community Coordination team, comprised of two Asthma Care Coordinators and 4 Community Health Workers who are supervised by a Licensed Clinical Social Worker, provides asthma education; environmental assessment; coordination with schools and child care; and provides help with barriers to asthma management. The final component is the collaboration with the primary care physicians, school health, and other community partners. The self-monitoring aspects of CHAMP are managed by a program evaluator and a data analyst. CHAMP aims to reduce emergency room visits, avoidable hospitalizations, school absence due to asthma, and child deaths due to asthma. Additionally CHAMP seeks to improve school attendance, improve quality of life, and improve the experience of health care, all at a lower cost of care.</p>		
<b>Additional Notes/Comments</b>		
HCIA Award with a focus on asthma		

**Table 1. Environmental Scan**

*Key words: Oncology Care Model; Pulmonary Medicine Associates; PMA telemedicine; Remote Monitoring Asthma; Remote Monitoring OCPD*

Organization	Title	Date
RTI International	Evaluation of the Extended Medicare Care Management for High Cost Beneficiaries (CMHCB) Demonstration: Health Buddy® Program at Montefiore	10/1/2013

**Purpose/Abstract**

**Background:** The program Health Buddy Project implemented by the Health Hero Network was a CMS demonstration which involved tele monitoring of certain high cost beneficiaries with chronic diseases using a tele monitoring device. CMS selected six care management organizations to operate the program in the demonstration in the year 2005 and granted a three year extension to the program in 2009.

**Summary:** Under the demonstration project, beneficiaries selected for the demonstration used their devices to exchange information with their caregivers. While beneficiaries obtained dieting, exercise, medication usage, and behavioral advice to live with the condition; caregivers would at the same time be able to identify gaps in care or knowledge of the beneficiaries. Such procedure would lead to a timely and appropriate intervention avoiding costly hospitalizations and poor health outcomes. The evaluation report found statistically significant lower mortality rates in the intervention group. Additionally, the rates of acute care utilization increased among both, the control group and the intervention group with no statistically significant difference among the two.

**Additional Notes/Comments**

<https://www.rti.org/sites/default/files/resources/cmhcb-healthbuddymontefiore.pdf>

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<b>Organization</b>	<b>Title</b>	<b>Date</b>
Institute of Medicine	The Role of Telehealth in an Evolving Health Care Environment - Workshop Summary	11/20/2012
<b>Purpose/Abstract</b>		
<p><b>Background:</b> Since the 1996 IOM report, Telemedicine: A Guide to Assessing Telecommunications for Health Care, attention to telehealth has continued to grow in both the public and private sectors. Peer-reviewed journals and professional societies are devoted to telehealth, the federal government provides grant funding to promote the use of telehealth, and the private technology industry continues to develop new applications for telehealth. However, barriers remain to the use of telehealth.</p> <p><b>Summary:</b> The IOM held a workshop August 8-9, 2012, to examine how the use of telehealth technology can fit into the U.S. health care system. The workshop focused on the potential for health care to serve geographically isolated individuals and extend the reach of scarce resources while also emphasizing the quality and value in the delivery of health care services. This document summarizes the workshop.</p>		
<b>Additional Notes/Comments</b>		
Chapter 5 may be of particular interest "Telehealth and Payment" where it discusses Medicare, traditional payment models and regulation, private payment, CMMI, and provides a summary of reactions and discussions		

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<b>Organization</b>	<b>Title</b>	<b>Date</b>
National Quality Forum	The Current State of Cancer Quality Measurement: Towards a Comprehensive Cancer Measure Set -- Value- Based Episodes of Care	9/24/2008
<b>Purpose/Abstract</b>		
<p><b>Background:</b> The goal of this project was to identify a comprehensive cancer measure set and to potentially apply the NQF measure framework for assessing “episode efficiency” for chronic conditions to cancer care.</p> <p><b>Summary:</b> An NQF workshop was convened to guide the development and endorsement of future cancer quality measures. This white paper illustrates the unique challenges of cancer quality measurement, previous efforts to develop and catalogue cancer quality measures, and approaches to cancer quality measurement. The white paper also makes seven recommendations regarding the future direction of cancer quality measurement.</p>		
<b>Additional Notes/Comments</b>		



<b>Table 2. Relevant Literature</b>		
<i>Key words: Remote Monitoring Asthma; Remote Monitoring OCPD; Telemonitoring outcomes</i>		
<b>Journal</b>	<b>Title</b>	<b>Date</b>
National Taiwan University	Effectiveness of Telemonitoring in Patients with Chronic Obstructive Pulmonary Disease in Taiwan-A Randomized Controlled Trial	3/31/2016
<b>Purpose/Abstract</b>		
<p><b>Background:</b> Chronic obstructive pulmonary disease (COPD) is the leading cause of death worldwide, and poses a substantial economic and social burden. Telemonitoring has been proposed as a solution to this growing problem, but its impact on patient outcome is equivocal. Objective: This randomized controlled trial aimed to investigate effectiveness of telemonitoring in improving COPD patient outcome.</p> <p><b>Methods:</b> 106 subjects were randomly assigned to the telemonitoring (n = 53) or usual care (n = 53) group. During the two months following discharge, telemonitoring group patients had to report their symptoms daily using an electronic diary. The primary outcome measure was time to first re-admission for COPD exacerbation within six months of discharge.</p> <p><b>Results:</b> During the follow-up period, time to first re-admission for COPD exacerbation was significantly increased in the telemonitoring group than in the usual care group (p = 0.026). Telemonitoring was also associated with a reduced number of all-cause re-admissions (0.23 vs. 0.68/patient; p = 0.002) and emergency room visits (0.36 vs. 0.91/patient; p = 0.006).</p> <p><b>Conclusions:</b> In conclusion, telemonitoring intervention was associated with improved outcomes among COPD patients admitted for exacerbation in a country characterized by a small territory and high accessibility to medical services. The findings are encouraging and add further support to implementation of telemonitoring as part of COPD care.</p>		
<b>Additional Notes/Comments</b>		
<p><a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4814821/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4814821/</a></p>		

<b>Table 2. Relevant Literature</b>		
<i>Key words: Remote Monitoring Asthma; Remote Monitoring OCPD; Telemonitoring outcomes</i>		
<b>Journal</b>	<b>Title</b>	<b>Date</b>
International Journal of Clinical Practice	Home telemonitoring effectiveness in COPD: a systematic review	1/28/2014
<b>Purpose/Abstract</b>		
<p><b>Objective:</b> Adequate symptom control is a problem for many people with asthma. The authors asked whether weekly email reports on monitored use of inhaled, short-acting bronchodilators might improve scores on composite asthma-control measures.</p> <p><b>Methods:</b> Through an investigational electronic medication sensor attached to each participant's inhaler, researchers monitored 4 months' use of inhaled, short-acting bronchodilators. Participants completed surveys, including the Asthma Control Test™ (ACT), to assess asthma control at entry and monthly thereafter. After the first month, participants received weekly email reports for 3 months. The reports summarized inhaled bronchodilator use during the preceding week and provided suggestions derived from National Asthma Education and Prevention Program (NAEPP) guidelines. Paired t-tests and random-effects mixed models were implemented to assess changes in primary asthma endpoints.</p> <p><b>Results:</b> Thirty individuals participated in the 4-month study; 29 provided complete asthma control information. Mean age was 36.8 years (range: 19–74 years); 52% of respondents were female. Mean ACT scores were 17.6 (Standard Deviation [SD] = 3.35) at entry and 18.4 (SD = 3.60) at completion of the first month. No significant difference appeared between ACT values at entry and completion of the first month (<math>p=0.66</math>); however, after participants began receiving email reports and online information about their inhaler use, mean ACT scores increased 1.40 points (95% CI: 0.61, 2.18) for each subsequent study month. Significant decreases occurred in 2-week histories of daytime symptoms (<math>\beta=-1.35</math>, 95% CI: <math>-2.65</math>, <math>-0.04</math>) and nighttime symptoms (<math>\beta=-0.84</math>, 95% CI: <math>-1.25</math>, <math>-0.44</math>); no significant change in activity limitation (<math>\beta=-0.21</math>, 95% CI: <math>-0.69</math>, <math>0.26</math>) was observed. Participants reported increased awareness and understanding of asthma patterns, level of control, bronchodilator use (timing, location) and triggers, and improved preventive practices.</p> <p><b>Conclusions:</b> Weekly email reports and access to online charts summarizing remote monitoring of inhaled bronchodilator frequency and location were associated with improved asthma control and a decline in day-to-day asthma symptoms.</p>		
<b>Additional Notes/Comments</b>		
<p><a href="http://onlinelibrary.wiley.com/doi/10.1111/ijcp.12345/abstract">http://onlinelibrary.wiley.com/doi/10.1111/ijcp.12345/abstract</a></p>		

<b>Table 2. Relevant Literature</b>		
<i>Key words: Remote Monitoring Asthma; Remote Monitoring OCPD; Telemonitoring outcomes</i>		
<b>Journal</b>	<b>Title</b>	<b>Date</b>
Cochrane Collaboration: Cochrane Database of Systematic Reviews	Systematic Review: Smartphone and tablet self management apps for asthma	11/27/2013
<b>Purpose/Abstract</b>		
<p><b>Background:</b> Self management programmes have been advocated as a means to help people with asthma achieve better levels of asthma control and better asthma-related outcomes. However, there are a number of barriers affecting the successful implementation and uptake of these programmes. These barriers call for innovative approaches for the delivery of self management programmes. Of particular interest is the use of consumer devices such as smartphones and tablet computers as a means of delivering these programmes within the existing healthcare configuration.</p> <p><b>Objective:</b> This systematic review assessed whether smartphone and tablet computer apps are effective tools for supporting patients with asthma to self manage their own condition.</p> <p><b>Methods:</b> The authors included parallel randomized controlled trials (RCTs) that compared self-management interventions for patients with clinician-diagnosed asthma delivered via smartphone apps to self management interventions delivered via traditional methods (e.g. paper-based asthma diaries). The primary outcomes examined were symptom scores; frequency of healthcare visits due to asthma exacerbations or complications and health-related quality of life.</p> <p><b>Results:</b> Two RCTs with a total of 408 participants were included and both studies evaluated the effect of a mobile phone-based asthma self management intervention on asthma control by comparing it to traditional, paper-based asthma self management. A meta-analysis of the data extracted was not conducted due to the considerable dress of heterogeneity between these studies. Overall, the results were inconclusive. One study showed that the use of a smartphone app can result in better asthma-related quality of life and lung function, and reduced visits to the emergency department. The other study failed to show any significant improvements in asthma-related outcomes after using a smartphone app as a delivery mechanism. The current evidence base is not sufficient to advise clinical practitioners, policy-makers and the general public with regards to the use of smartphone and tablet computer apps for the delivery of asthma self management programmes.</p>		
<b>Additional Notes/Comments</b>		
<p><a href="http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010013.pub2/full">http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010013.pub2/full</a></p>		

<b>Table 2. Relevant Literature</b>		
<i>Key words: Remote Monitoring Asthma; Remote Monitoring OCPD; Telemonitoring outcomes</i>		
<b>Journal</b>	<b>Title</b>	<b>Date</b>
PLoS One	Remote Monitoring of Inhaled Bronchodilator Use and Weekly Feedback about Asthma Management: An Open-Group, Short-Term Pilot Study of the Impact on Asthma Control	2/27/2013
<b>Purpose/Abstract</b>		
<p><b>Objective:</b> Adequate symptom control is a problem for many people with asthma. We asked whether weekly email reports on monitored use of inhaled, short-acting bronchodilators might improve scores on composite asthma-control measures.</p> <p><b>Methods:</b> Through an investigational electronic medication sensor attached to each participant's inhaler, we monitored 4 months' use of inhaled, short-acting bronchodilators. Participants completed surveys, including the Asthma Control Test™ (ACT), to assess asthma control at entry and monthly thereafter. After the first month, participants received weekly email reports for 3 months. The reports summarized inhaled bronchodilator use during the preceding week and provided suggestions derived from National Asthma Education and Prevention Program (NAEPP) guidelines. Paired t-tests and random-effects mixed models were implemented to assess changes in primary asthma endpoints.</p> <p><b>Results:</b> Thirty individuals participated in the 4-month study; 29 provided complete asthma control information. Mean age was 36.8 years (range: 19–74 years); 52% of respondents were female. Mean ACT scores were 17.6 (Standard Deviation [SD] = 3.35) at entry and 18.4 (SD = 3.60) at completion of the first month. No significant difference appeared between ACT values at entry and completion of the first month (<math>p=0.66</math>); however, after participants began receiving email reports and online information about their inhaler use, mean ACT scores increased 1.40 points (95% CI: 0.61, 2.18) for each subsequent study month. Significant decreases occurred in 2-week histories of daytime symptoms (<math>\beta = -1.35</math>, 95% CI: <math>-2.65, -0.04</math>) and nighttime symptoms (<math>\beta = -0.84</math>, 95% CI: <math>-1.25, -0.44</math>); no significant change in activity limitation (<math>\beta = -0.21</math>, 95% CI: <math>-0.69, 0.26</math>) was observed. Participants reported increased awareness and understanding of asthma patterns, level of control, bronchodilator use (timing, location) and triggers, and improved preventive practices.</p> <p><b>Conclusions:</b> Weekly email reports and access to online charts summarizing remote monitoring of inhaled bronchodilator frequency and location were associated with improved asthma control and a decline in day-to-day asthma symptoms.</p>		
<b>Additional Notes/Comments</b>		
<p><a href="https://www.ncbi.nlm.nih.gov/pubmed/23460785">https://www.ncbi.nlm.nih.gov/pubmed/23460785</a></p>		

<b>Table 2. Related Literature</b>		
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<b>Journal</b>	<b>Title</b>	<b>Date</b>
American Society of Clinical Oncology	The Oncology Care Model: A Critique.	2016
<b>Purpose/Abstract</b>		
<p><b>Background:</b> Rapidly increasing national health care expenditures are a major area of concern as threats to the integrity of the health care system. Significant increases in the cost of care for patients with cancer are driven by numerous factors, most importantly the cost of hospital care and escalating pharmaceutical costs. The current fee-for-service system (FFS) has been identified as a potential driver of the increasing cost of care, and multiple stakeholders are interested in replacing FFS with a system that improves the quality of care while at the same time reducing cost.</p> <p><b>Summary:</b> Several models have been piloted, including a Center for Medicare &amp; Medicaid Innovation (CMMI)–sponsored medical home model (COME HOME) for patients with solid tumors that was able to generate savings by integrating a phone triage system, pathways, and seamless patient care 7 days a week to reduce overall cost of care, mostly by decreasing patient admissions to hospitals and referrals to emergency departments. CMMI is now launching a new pilot model, the Oncology Care Model (OCM), which differs from COME HOME in several important ways. It does not abolish FFS but provides an additional payment in 6-month increments for each patient on active cancer treatment. It also allows practices to participate in savings if they can decrease the overall cost of care, to include all chemotherapy and supportive care drugs, and fulfill certain quality metrics. A critical discussion of the proposed model, which is scheduled to start in 2016, will be provided at the 2016 American Society of Clinical Oncology (ASCO) Annual Meeting with practicing oncologists and a Centers for Medicare &amp; Medicaid Services (CMS) representative.</p>		
<b>Additional Notes/Comments</b>		