

Online Supplement

Trends and Characteristics of Global Initiative for Chronic Obstructive Lung Disease Guidelines-Discordant Prescribing of Triple Therapy Among Patients with COPD

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SUPPLEMENTARY FILES

Table S1. Characteristics of Exacerbation-Discordant TT Initiators, by Index Year

	Index Year						2018 Subset: Closed TT (n=1,488; 35.5% of 2018) ^a
	Total (N=13,435)	2014 (n=2,309; 17.2% of Total)	2015 (n=2,022; 15.1% of Total)	2016 (n=2,076; 15.5% of Total)	2017 (n=2,838; 21.1% of Total)	2018 (n=4,190; 31.2% of Total)	
Demographic Characteristics							
Age, years, mean (SD)	69.5 (9.6)	68.8 (9.5)	69.9 (9.7)	69.2 (9.8)	69.4 (9.5)	69.8 (9.6)	69.7 (9.6)
Age group, n (%)							
40-49	256 (1.9)	45 (2.0)	37 (1.8)	46 (2.2)	55 (1.9)	73 (1.7)	25 (1.7)
50-59	1972 (14.7)	363 (15.7)	294 (14.5)	322 (15.5)	406 (14.3)	587 (14.0)	209 (14.1)
60-64	1893 (14.2)	322 (14.0)	264 (13.1)	311 (15.0)	407 (14.3)	589 (14.1)	233 (15.7)
65-69	2415 (18.0)	450 (19.5)	370 (18.3)	381 (18.4)	501 (17.7)	713 (17.0)	214 (14.4)
70-74	2736 (20.4)	508 (22.0)	377 (18.6)	387 (18.6)	606 (21.4)	858 (20.5)	324 (21.8)
75+	4163 (31.0)	621 (26.9)	680 (33.6)	629 (30.3)	863 (30.4)	1370 (32.7)	483 (32.5)
Male gender, n (%)	7005 (52.1)	1221 (52.9)	1075 (53.2)	1100 (53.0)	1463 (51.6)	2146 (51.2)	789 (53.0)
Region, n (%)							
Northeast	1957 (14.6)	433 (18.8)	356 (17.6)	304 (14.6)	347 (12.2)	517 (12.3)	141 (9.5)
Midwest	3910 (29.1)	721 (31.2)	665 (32.9)	646 (31.1)	791 (27.9)	1087 (25.9)	348 (23.4)
South	6299 (46.9)	914 (39.6)	792 (39.2)	920 (44.3)	1429 (50.4)	2244 (53.6)	896 (60.2)
West	1269 (9.5)	241 (10.4)	209 (10.3)	206 (9.9)	271 (9.6)	342 (8.2)	103 (6.9)
Insurance type, n (%)							
Commercial	3285 (24.5)	719 (31.1)	533 (26.4)	644 (31.0)	588 (20.7)	801 (19.1)	316 (21.2)
Medicare Advantage Part D	10150 (75.6)	1590 (68.9)	1489 (73.6)	1432 (69.9)	2250 (79.3)	3389 (80.9)	1172 (78.8)
Baseline Clinical Characteristics							
Elixhauser Score, excluding COPD, mean (SD) ^b	5.67 (8.41)	5.41 (8.30)	5.73 (8.08)	5.50 (8.38)	5.93 (8.57)	5.69 (8.51)	5.3 (8.1)
Comorbid conditions, n (%)							
Allergic rhinitis	1548 (11.5)	231 (10.0)	196 (9.7)	236 (11.4)	328 (11.6)	557 (13.3)	212(14.2)
Anxiety	2589 (19.3)	332 (14.4)	306 (15.1)	405 (19.5)	628 (22.1)	918 (21.9)	306 (20.6)
Arrhythmia	2767 (20.6)	464 (20.1)	431 (21.3)	410 (19.8)	589 (20.8)	873 (20.8)	301 (20.2)
Atrial fibrillation	1841 (13.7)	287 (12.4)	280 (13.9)	270 (13.0)	412 (14.5)	592 (14.1)	198 (13.3)
Congestive heart failure	2476 (18.4)	365 (15.8)	366 (18.1)	349 (16.8)	576 (20.3)	820 (19.6)	262 (17.6)
Depression	3077 (22.9)	461 (20.0)	403 (19.9)	450 (21.7)	698 (24.6)	1065 (25.4)	334 (22.5)
Dyspnea	7481 (55.7)	1250 (54.1)	1121 (55.4)	1190 (57.3)	1567 (55.2)	2353 (56.2)	859 (57.7)
Ischemic heart disease	4321 (32.2)	700 (30.3)	602 (29.8)	620 (29.9)	945 (33.3)	1454 (34.7)	538 (36.2)
Metabolic syndrome	11714 (87.2)	1981 (85.8)	1703 (84.2)	1772 (85.4)	2510 (88.4)	2748 (89.5)	1322 (88.8)
Obesity	2471 (18.4)	303 (13.1)	291 (14.4)	394 (19.0)	587 (20.7)	896 (21.4)	319 (21.4)
Hypercholesterolemia	9014 (67.1)	1545 (66.9)	1302 (64.4)	1347 (64.9)	1918 (67.6)	2902 (69.3)	1029 (69.2)
Hypertension	10041 (74.7)	1659 (71.9)	1451 (71.7)	1497 (72.1)	2164 (76.3)	3280 (78.0)	1141 (76.7)
Type II diabetes, including insulin resistance	5191 (38.6)	841 (36.4)	731 (36.2)	742 (35.7)	1140 (40.2)	1737 (41.5)	605 (40.7)
Peripheral vascular disease	3480 (25.9)	521 (22.6)	513 (25.4)	515 (24.8)	790 (27.8)	114 (27.2)	422 (28.4)
Peptic ulcer/GERD	3680 (27.4)	583 (25.3)	471 (23.3)	568 (27.4)	833 (29.4)	1225 (29.2)	416 (28.0)
Renal disease	3397 (25.3)	576 (25.0)	521 (25.8)	478 (23.0)	737 (26.0)	1085 (25.9)	362 (24.3)
Sleep apnea	2698 (20.1)	378 (16.4)	342 (16.9)	414 (19.9)	624 (22.0)	940 (22.4)	370 (24.9)
Stroke	538 (4.0)	63 (2.7)	81 (4.0)	75 (3.6)	127 (4.5)	192 (4.6)	65 (4.4)
Pneumonia or acute bronchitis/bronchiolitis	3288 (24.5)	602 (26.1)	494 (24.4)	504 (24.3)	687 (24.2)	1001 (23.9)	341 (22.9)
Baseline COPD Severity, n (%)							
1 moderate exacerbation and no severe	4205 (31.3)	639(27.7)	609(30.1)	660(31.8)	922(32.5)	1375(32.8)	498 (33.5)
≥2 moderate or ≥1 severe exacerbations	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0 (0.0)
Oxygen therapy	2793 (20.8)	527 (22.8)	441 (21.8)	410 (19.8)	609 (21.5)	806 (19.2)	297 (20.0)

Evidence of tobacco use	7854 (58.5)	1047 (45.3)	936 (46.3)	1244 (59.9)	1844 (65.0)	2783 (66.4)	952 (64.0)
Pulmonologist visit within 30 days prior to index date	3491 (26.0)	534 (23.1)	512 (25.1)	564 (27.2)	714 (25.2)	1167 (27.9)	446 (30.0)
Baseline Medication Use, n (%)							
Naïve to maintenance therapy	4818 (35.9)	857 (37.1)	709 (35.1)	733 (35.3)	996 (35.1)	1523 (36.4)	638 (42.9)
Naïve to long-acting bronchodilation therapy	5044 (37.5)	894 (38.7)	743 (36.8)	769 (37.0)	1051 (37.0)	1587 (37.9)	655 (44.0)
Controller medications, in any combination, n (%)							
Any LAMA	4465 (33.2)	808 (35.0)	696 (34.4)	730 (35.2)	920 (32.4)	1311 (31.3)	456 (30.7)
Any LABA	5445 (40.5)	769 (33.3)	716 (35.4)	767 (37.0)	1207 (42.5)	1986 (47.4)	708 (47.6)
Any ICS	5113 (38.1)	833 (36.1)	768 (38.0)	774 (37.3)	1147 (40.4)	1591 (38.0)	439 (29.5)
Rescue medications, in any combination, n (%)							
Any SABA	8442 (62.8)	1367 (59.2)	1215 (60.1)	1302 (62.7)	1860 (65.5)	2698 (64.4)	956 (64.3)
Any SAMA	2395 (17.8)	391 (16.9)	340 (16.8)	360 (17.3)	546 (19.2)	758 (18.1)	253 (17.0)
Oral corticosteroids	5010 (37.3)	765 (33.1)	759 (37.5)	796 (38.3)	1073 (37.8)	1617 (38.6)	581 (39.1)
Adjunct therapy, n (%)							
Methylxanthines	210 (1.6)	41 (1.8)	32 (1.6)	35 (1.7)	43 (1.5)	59 (1.4)	21 (1.4)
PDE-4 inhibitors	81 (0.6)	19 (0.8)	20 (1.0)	10 (0.5)	15 (0.5)	17 (0.4)	10 (0.7)
Respiratory antibiotics	6448 (48.0)	1034 (44.8)	966 (47.8)	1026 (49.4)	1367 (48.2)	2055 (49.1)	743 (49.9)
Index Medication, n (%)							
Closed TT	1489 (11.1)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.04)	1488 (35.5)	1,488 (100.0)
Open TT							
ICL/LABA + LAMA	10547 (88.3)	2233 (96.7)	1871 (92.5)	1837 (88.5)	2410 (84.9)	2196 (81.3)	–
LAMA/LABA + ICS	518 (4.3)	9 (0.4)	42 (2.1)	77 (3.7)	179 (6.3)	211 (7.8)	–
ICS + LABA + LAMA	77 (0.6)	22 (1.0)	17 (0.8)	23 (1.1)	10 (0.4)	5 (0.2)	–
ICS/LABA + LAMA/LABA	466 (3.9)	1 (0.04)	35 (1.7)	80 (3.9)	159 (5.6)	191 (7.1)	–
Other combinations	338 (2.8)	44 (1.9)	57 (2.8)	59 (2.8)	79 (2.8)	99 (3.7)	–
Index Prescribing Provider Specialty, n (%)^c							
Pulmonology	4078 (30.4)	624 (27.0)	578 (28.6)	663 (31.9)	865 (30.5)	1348 (32.2)	563 (37.8)
Primary care	4274 (31.8)	805 (34.9)	679 (33.6)	625 (30.1)	968 (34.1)	1197 (28.6)	369 (24.8)
Internal medicine	3720 (27.7)	723 (31.3)	649 (32.1)	596 (28.7)	737 (26.0)	1015 (24.2)	297 (20.0)
Allied health professional ^e	1987 (14.8)	283 (12.3)	276 (13.7)	317 (15.3)	424 (14.9)	687 (16.4)	223 (15.0)
Cardiology	96 (0.7)	23 (1.0)	16 (0.8)	21 (1.0)	16 (0.6)	20 (0.5)	6 (0.4)
Other specialty	689 (5.1)	133 (5.8)	114 (5.6)	132 (6.4)	116 (4.1)	194 (4.6)	64 (4.3)
Unknown specialty	1077 (8.0)	101 (4.4)	90 (4.5)	109 (5.3)	291 (10.3)	486 (11.6)	69 (4.6)