



Advancing the Patient Experience in COPD

# Variation in Demographic and Clinical Characteristics of COPD Patients Managed in U.S. Primary Care: Data from a Real-Life COPD Registry

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Conflict of interest statement:



# Study Introduction and Aim



Treatment and disease management can be significantly influenced by patient demographics and clinical characteristics which vary widely between states, cities, and neighborhoods

- May be amplified in the U.S



Aim to compare the demographic and clinical characteristics of COPD patients managed in five large primary care medical groups in the U.S

- Identify underlying factors which contribute to the disparities across the many healthcare systems in the U.S.



An observational registry study using patient data from the COPD Optimum Patient Care Research DARTNet Research Database (COPD-RD) from which the APEX in COPD registry is derived.

- The APEX in COPD registry is the first U.S. primary care, based registry, with both retrospective and prospective electronic health record (EHR) data and patient reported information/outcomes.
- APEX COPD registry contains all COPD-RD variables but also links these with PRIO data



EHR data was extracted from 5 U.S. medical groups, from December 2019 to January 2020

- Patients were included if they had a COPD diagnosis code [ICD9CM, ICD10CM] and were aged  $\geq 35$  years at time of COPD diagnosis and cared for in primary care
- The study population had a total of n=17, 192 patients from COPD-RD with 1,354 being included in the APEX COPD registry
- Texas (n=811), Ohio (n=8,722), Colorado (n=472), New York (n=1,149) and North Carolina (n=6,038)

## Disclosures

Presenter's conflict of interest disclosure: Wilson Pace is on the advisory board for Mylan; stock from Novo Nordisk, Pfizer, Novartis, Johnson & Johnson, Stryker, Amgen, Gilead, and Sanofi.

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# Variation in demographics and clinical characteristics

Figure 1: Overall characteristics of COPD patients in the COPD Optimum Patient Care DARTNet Research Database (COPD-RD) and APEX in COPD registry.

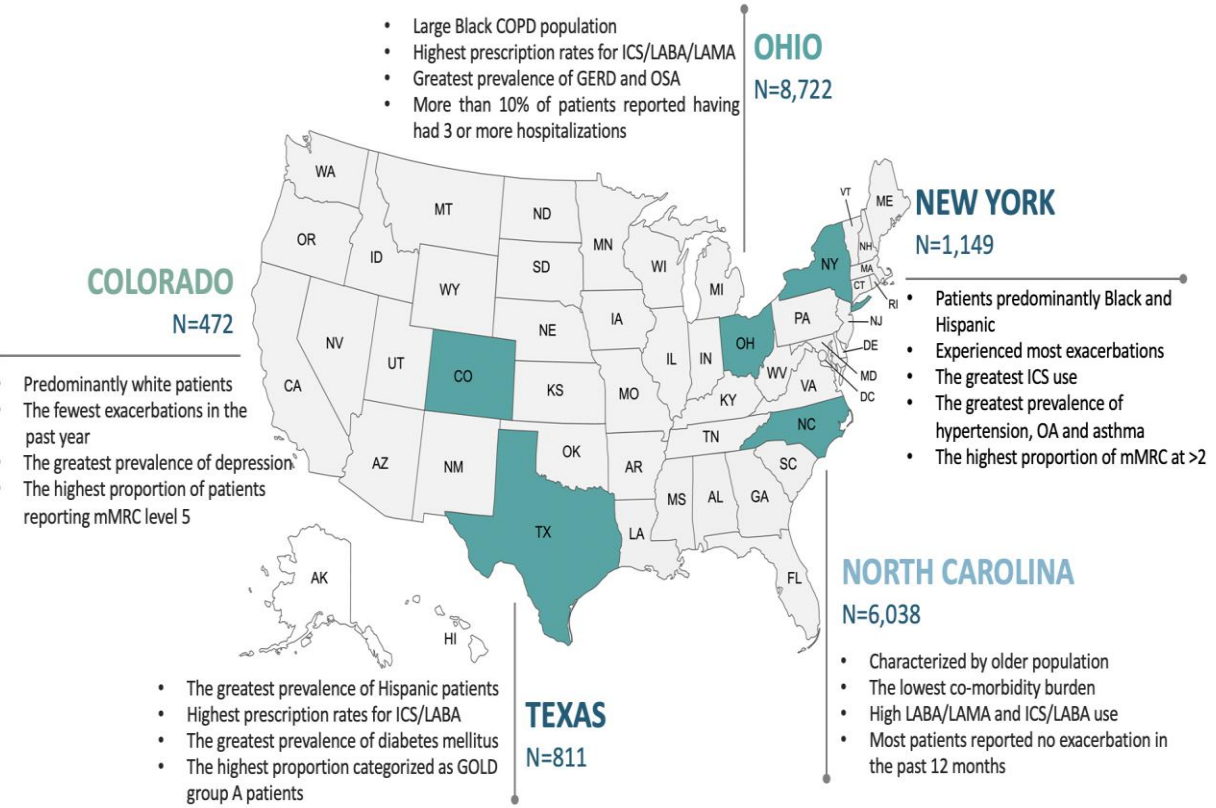


Table 1: Disease monitoring characteristics of COPD patient from COPD-RD

Variable	Texas (N=811)	Ohio (N=8,772)	Colorado (N=472)	New York (N=1,149)	N. Carolina (N=6,038)
<b>Number of exacerbations in the past 12 months</b>					
1	245 (30.2)	2089 (24.0)	139 (29.4)	266 (23.2)	1088 (18.0)
2	71 (8.8)	818 (9.4)	18 (3.8)	91 (7.9)	445 (7.4)
3+	22 (2.7)	771 (8.8)	7 (1.5)	122 (10.6)	387 (6.4)
<b>Steady state Eosinophil count (cells/uL)</b>					
	<b>N =445</b>	<b>N=5,459</b>	<b>N=223</b>	<b>N=642</b>	<b>N=2,113</b>
Mean (SD)	226.7 (168.1)	196.6 (181.8)	231.7 (186.2)	203.3 (239.0)	244.4 (400.6)
Not elevated (<300)	342 (76.9)	4,461 (81.7)	180 (80.7)	531 (82.7)	1650 (78.1)
Elevated (≥300)	103 (23.1)	998 (18.3)	43 (19.3)	111 (17.3)	463 (21.9)
<b>Inhaled therapy within the last 24 months</b>					
None given	67 (8.3)	195 (2.2)	134 (28.4)	123 (10.7)	46 (0.8)
Reliever only	55 (6.8)	778 (8.9)	67 (14.2)	56 (4.9)	631 (10.5)
LAMA <sup>a</sup>	100 (12.3)	1055 (12.1)	37 (7.8)	137 (11.9)	798 (13.2)
LABA + LAMA <sup>a</sup>	64 (7.9)	987 (11.3)	25 (5.3)	158 (13.8)	1031 (17.1)
ICS <sup>a</sup>	11 (1.4)	365 (4.2)	61 (12.9)	65 (5.7)	254 (4.2)
ICS + LABA <sup>a</sup>	<b>370 (45.6)</b>	2404 (27.6)	123 (26.1)	301 (26.2)	1872 (31)
ICS + LABA + LAMA <sup>a</sup>	141 (17.4)	<b>2870 (32.9)</b>	22 (4.7)	251 (21.8)	1374 (22.8)
<b>Comorbidities</b>					
Hypertension	666 (82.1)	6786 (77.8)	354 (75.0)	1010 (87.9)	3672 (60.8)
Diabetes mellitus	529 (65.2)	4748 (54.4)	137 (29.0)	461 (40.1)	1849 (30.6)
Depression	471 (58.1)	4211 (48.3)	410 (86.9)	618 (53.8)	1530 (25.3)
GERD	281 (34.6)	4244 (48.7)	179 (37.9)	486 (42.3)	1568 (26.0)
OSA	239 (29.5)	4116 (47.2)	163 (34.5)	90 (7.8)	1687 (27.9)
Asthma	325 (40.1)	3387 (38.8)	128 (27.1)	708 (61.6)	1165 (19.3)
Anxiety	307 (37.9)	3355 (38.5)	163 (34.5)	337 (29.3)	1241 (20.6)
Osteoporosis	626 (77.2)	2598 (29.8)	130 (27.5)	222 (19.3)	1181 (19.6)
Heart failure	202 (25.0)	2215 (25.4)	81 (17.2)	831 (72.3)	1056 (17.4)
Rhinitis	44 (69.8)	255 (45.1)	28 (45.2)	31 (39.2)	189 (32.3)

<sup>a</sup> with or without reliever/add on; GERD: gastroesophageal reflux disease; OSA: obstructive sleep apnea.

• Inter-site variability was noted in terms of age, race/ethnicity, exacerbation frequency, treatment pattern and co-morbidity prevalence (Figure 1)

- Patients races/ethnicities had the highest variation in comparison to other characteristics.

Table 2: Additional patient reported information/outcome data from the APEX COPD registry

Variable	Texas (N=63)	Ohio (N=565)	Colorado (N=62)	New York (N=79)	N. Carolina (N=585)
<b>COPD Assessment Test (CAT)</b>	N=62	N=552	N=61	N=74	N=573
<10 (low)	16 (25.8)	79 (14.3)	12 (19.7)	17 (23.0)	114 (19.9)
10-20 (Medium)	27 (43.5)	212 (38.4)	21 (34.4)	26 (35.1)	218 (38.0)
21-30 (High)	15 (24.2)	194 (35.2)	21 (34.4)	26 (35.1)	198 (34.4)
>30 (Very high)	4 (6.5)	67 (12.1)	4 (11.5)	5 (6.8)	44 (7.7)
<b>mMRC rated breathlessness</b>	N=62	N=549	N=59	N=77	N=568
Grade 0	21 (33.9)	89 (16.2)	9 (15.2)	17 (22.0)	122 (21.5)
Grade 1	20 (32.3)	195 (35.5)	21 (35.6)	18 (23.4)	215 (37.8)
Grade 2	9 (14.5)	154 (28.1)	8 (13.6)	15 (19.5)	139 (24.5)
Grade 3	7 (11.3)	80 (14.6)	14 (23.7)	20 (26.0)	74 (13.0)
Grade 4	5 (8.1)	31 (5.6)	7 (11.9)	7 (9.1)	18 (3.2)
<b>GOLD Characteristics</b>	N=62	N=502	N=58	N=73	N=541
GOLD A (Fewer symptoms, Low risk)	13 (21.0)	55 (11.0)	10 (17.2)	15 (20.5)	85 (15.7)
GOLD B (More symptoms, Low risk)	25 (40.3)	248 (49.4)	28 (48.3)	31 (42.5)	254 (47.0)
GOLD C (Fewer symptoms, High risk)	3 (4.8)	11 (2.2)	1 (1.7)	2 (2.8)	20 (3.7)
GOLD D (More symptoms, High risk)	21 (33.9)	188 (37.4)	19 (32.8)	25 (34.2)	182 (33.6)

- Majority of patients (68%-74%) reported a medium or high CAT score.

## Findings and Opportunities

- These data show the heterogeneity in demographic and clinical characteristics of patients diagnosed with COPD who are managed in the U.S.
- Differences stem from both real inter-site differences in the patient and disease characteristics or differences in uptake of guideline recommendations.
- Creates opportunities in future studies to investigate deeper into the causes for these differences in order to assist health care stakeholders in improving and standardising COPD patient care in primary care