

Health care utilization in COPD: the burden carried by primary care practitioners

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- 210 million people worldwide are known to have COPD and prevalence rates are rising¹
- The true prevalence of COPD is likely to be higher as over half the population with COPD estimated to be undiagnosed²
- COPD kills 3 million people per annum¹
- By 2020 COPD is predicted to become the third leading cause of death worldwide³

- COPD is increasingly being managed within primary care
- The last global survey was undertaken ten years ago and did not focus specifically on the under 68 year age group¹:
 - That study reported health care provider usage within the last year as:
 - 12.8% hospital inpatients
 - 13.8% hospital emergency department
 - No primary care data was reported

- ‘COPD Uncovered’ is an international study that has investigated the consequences of COPD from the perspective of the younger working age population (45–68 years) from six countries
- Sub-analyses presented here were performed to assess health care utilization by COPD patients in primary and secondary care settings, and examine the relationship with severity of COPD

- Cross-sectional survey undertaken in Germany, USA, UK (telephone interviews), China and Turkey (face-to-face interviews) and Brazil (telephone and face-to-face interviews)
- Target sample size = 400 respondents in each country (based on a confidence level of 95%, a confidence interval of 5% and 80% power)
- The questionnaire was developed using established instruments together with additional questions on the impact of COPD on income and lifestyle
- Disease severity was measured using the MRC dyspnoea scale (mild: 1–2; moderate: 3–4; severe: 5)

- 45–68 years
- Reported a physician-diagnosis of COPD
- >10 pack-year smoking history
- Risk from indoor fires/fuel in China/Brazil was also used if pack years were less than 10 in these countries
- History of taking respiratory medications in the preceding 3 months

Results: Demographic and clinical data

COPD
UNCOVERED

Total sample (n:2426)	n (%)
Gender	
Male	1180 (49%)
Female	1246 (51%)
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Age (m: 56.38 years)	
45–49 years	546 (23%)
50–59 years	927 (38%)
60–68 years	953 (39%)
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Brazil	408 (17%)
USA	404 (17%)
Germany	400 (16%)
UK	400 (16%)
China	398 (16%)
Turkey	416 (17%)

Results: Demographic and clinical data

Total sample (n:2426)	n (%)
Mild (MRC 1–2)	849 (35%)
Moderate (MRC 3–4)	1102 (42%)
Severe (MRC 5)	521 (22%)
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Ever smoked on a daily basis	2311 (95%)
Currently smoke	1366 (59%)
Smoking mean pack year history	37.8
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Number of co-morbidities by number of respondents (n:2404): M=1.72 (se=0.034)	
0	595
1	753
2	443
3	265
≥4	348

Health care utilization by disease severity

Health care resource used in preceding 4 weeks due to their COPD	All Severity levels	Mild <i>Mean % (se)</i> <i>n:849</i>	Moderate <i>Mean % (se)</i> <i>n:1012</i>	Severe <i>Mean % (se)</i> <i>n:521</i>
Family Practitioner	50.0 (1.0) n:1214	34.3 (1.6)	55.0 (1.6)	67.4 (2.1)
Out-patient clinic/specialist	37.7 (1.0) n:915	25.9 (1.5)	39.6 (1.5)	54.3 (2.2)
Emergency Department	10.8 (0.6) n:262	3.3 (0.6)	11.4 (1.0)	22.5 (1.8)
Hospital in-patient	11.9 (0.7) n:289	4.5 (0.7)	11.5 (1.0)	25.3 (1.9)
Pulmonary rehabilitation	12.3 (0.7) n:298	4.7 (0.7)	12.5 (1.0)	25.0 (1.9)

2426 people with COPD participants; 2382 disease severity assessed

Health care utilization

Respondents using health care resource in last month

Health care resource used due to COPD	USA	UK	Brazil	Turkey	Germany	China	Total
Family practitioner	48% n:193	63% n:251	53% n:216	46% n:193	51% n:204	39% n:157	50% n:1214
Out-patient specialist	27% n:108	29% n:114	49% n:200	61% n:254	27% n:109	33% n:130	38% n:915
Emergency Department	4% n:17	10% n:40	25% n:101	22% n:92	2% n:7	1% n:5	11% n:261
Hospital in-patient	4% n:16	12% n:48	37% n:151	14% n:57	3% n:13	1% n:4	12% n:289
Pulmonary rehabilitation	11% n:44	8% n:33	22% n:91	24% n:101	5% n:18	3% n:11	12% n:298
MRC 5 (severe)	23%	28%	37%	33%	8%	0%	
Total	404	400	408	416	400	398	2426

- To illustrate the impact of these utilization rates on health provider care costs, available standard UK unit costs were applied to each type of resource as a reference point
- Pulmonary rehabilitation was not costed due to local provision variations
- The average monthly cost per total patient number in the study was £362 (~x 2.25 UK national average)
- In the month preceding the survey, this cohort's total health care cost was estimated to be £878,846

Health care resource burden

Healthcare resource	Cost per resource	COPD population	Proportion who require resource	Total cost
GP visits	£52	2,424	50.1%	£63,128
Hospital out-patients	£132	2,425	37.7%	£120,780
Emergency departments	£111	2,425	10.8%	£29,082
Hospital in-patients	£2,304	2,426	11.9%	£665,856

* Monthly economic burden

- Self reported data
- Recruitment methods may lead to some selection bias
- Severity assessed by MRC dyspnoea score, not FEV1

- 50% of the respondents reported visiting a family practitioner for their COPD with the 4 week period prior to the survey
 - Data was not available on the number of visits, so actual demands may be greater
- Use of family practitioner services was consistently high across all disease severity groups in this younger working age population (45–68 years)
- The number of visits increases with the severity of COPD
- The monthly cost for these patients alone was calculated as being over £875,000
- Family practitioner and primary care provision of care is a relatively low cost option

- The provision of care is dependent on the specific country's health care system
- Family practitioner services are delivering a large percentage of health care to COPD patients
- As the numbers of patients with COPD rise and diagnosis is made earlier, demands are likely to increase
- Community based health care professionals need to build the capacity and capability to cope with this demand
- Efforts needed to increase integration between primary care and hospital care to reduce duplication of effort and costs