National COPD Audit Programme

Primary care audit 2015-17

Local health board report

Abertawe Bro Morgannwg

(Winter 2017)

This document contains the local health board and component cluster level results, in comparison to the national results from the 2015-17 primary care audit.

If you have any questions about any of the content, please contact the audit team on copd@rcplondon.ac.uk or 020 3075 1526 / 1566 / 1565.

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British Thoracic Society
British Lung Foundation
PCRS UK Primary Care Respiratory Society UK
RCGP Royal College of General Practitioners

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The National COPD Audit Programme is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit (NCA) Programme. HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement, and in particular to increase the impact that clinical audit has on healthcare quality in England and Wales. HQIP holds the contract to manage and develop the NCA Programme, comprising more than 30 clinical audits that cover care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual audits, also funded by the Health Department of the Scottish Government, DHSSPS Northern Ireland and the Channel Islands.

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About this report

This report is the local health board and component cluster level report for **Abertawe Bro Morgannwg** for the National COPD Audit Programme's primary care audit 2015-2017.

This report presents regional figures in order to support local health boards, clusters and primary care staff to better understand the quality of care received by patients and, consequently, to inform quality improvement projects. It is **designed to be read alongside the national report** *'Planning for every breath'* and, therefore, the **key findings, commentary and methodology have not been duplicated here**. Additionally, section 5 of the national report (displaying the data queries in relation to severe mental illness, smoking status, and socioeconomic deprivation at both health board and national level) has not been replicated here. This decision was taken because of the risk of small numbers in the cluster level analysis.

The following are available on the national report website of the national report (https://www.rcplondon.ac.uk/planningeverybreath):

- Both parts of the national report:
    - The shorter report contains the key findings, recommendations, and quality improvement (QI) opportunities,
    - The longer report contains the results, and analysis methodology employed for the audit.
- Local health board and component cluster level reports for all other Welsh local health boards.
- A key findings infographic.
- A summary slide set of the findings, with a QI focus.

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Participation

The methodology for the National COPD Audit Programme's primary care audit 2015-2017 builds upon the learning from the 2014-15 audit. This audit uses data extracted from general practices (GP) in Wales in June 2017, pertaining to the two years following the last audit (1 April 2015 to 31 March 2017).

Data were extracted directly from GP electronic systems by the NHS Wales Informatics Service (NWIS), for all practices that opted-in. Data cleaning and analysis was conducted by Imperial College London.

The 2017 audit included **407/435** practices, 93.6% of all practices in Wales.

Number of participating practices and clusters, per local health board, in the 2017 primary care audit

Local health board (LHB) / cluster	Total practices	Number participating	Percent participating
Wales	**435**	**407**	**93.6%**
Abertawe Bro Morgannwg (ABMU)	**73**	**69**	**94.5%**
Afan	9	9	100.0%
Bayhealth	9	8	88.9%
Bridgend East Network	6	6	100.0%
Bridgend North Network	8	8	100.0%
Bridgend West Network	4	4	100.0%
Cityhealth	10	8	80.0%
Cwmtawe	5	5	100.0%
Llwchwr	5	5	100.0%
Neath	8	8	100.0%
Penderi	6	5	83.3%
Upper Valleys	4	4	100.0%
Aneurin Bevan (AB)	**80**	**79**	**98.8%**
Blaenau Gwent East	5	5	100.0%
Blaenau Gwent West	6	6	100.0%
Caerphilly East	7	7	100.0%
Caerphilly North	11	11	100.0%
Caerphilly South	7	7	100.0%
Monmouthshire North	8	8	100.0%
Monmouthshire South	5	4	80.0%
Newport East	7	7	100.0%
Newport North	6	6	100.0%
Newport West	5	5	100.0%
Torfaen North	6	6	100.0%
Torfaen South	7	7	100.0%
Betsi Cadwaladr (BCU)	**108**	**105**	**97.2%**
Anglesey	11	11	100.0%
Arfon	11	11	100.0%

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Central & South Denbighshire	8	8	100.0%
Central Wrexham	7	7	100.0%
Conwy East	6	5	83.3%
Conwy West	12	12	100.0%
Dwyfor	5	5	100.0%
Meirionnydd	6	6	100.0%
North & West Wrexham	6	6	100.0%
North Denbighshire	6	6	100.0%
North East Flintshire	8	7	87.5%
North West Flintshire	7	6	85.8%
South Flintshire	7	7	100.0%
South Wrexham	8	8	100.0%
Cardiff & Vale (CVU)	**66**	**53**	**80.3%**
Cardiff East	5	4	80.0%
Cardiff North	11	11	100.0%
Cardiff South East	8	6	75.0%
Cardiff South West	11	7	63.6%
Cardiff West	8	8	100.0%
Central Vale	8	7	87.5%
City & Cardiff South	7	5	71.4%
Eastern Vale	5	3	60.0%
Western Vale	3	2	66.7%
Cwm Taf (CT)	**42**	**38**	**90.5%**
North Cynon	6	5	83.3%
North Merthyr Tydfil	4	4	100.0%
North Rhondda	5	4	80.0%
North Taf Ely	4	4	100.0%
South Cynon	5	5	100.0%
South Merthyr Tydfil	5	5	100.0%
South Rhondda	9	7	77.8%
South Taf Ely	4	4	100.0%
Hywel Dda (HD)	**50**	**50**	**100.0%**
Amman/Gwendraeth	7	7	100.0%
Llanelli	7	7	100.0%
North Ceredigion	7	7	100.0%
North Pembrokeshire	9	9	100.0%
South Ceredigion	7	7	100.0%
South Pembrokeshire	5	5	100.0%
Taf / Tywi	7	7	100.0%
Powys (PT)	**16**	**13**	**81.3%**
Mid Powys	5	4	80.0%
North Powys	7	6	85.7%
South Powys	4	3	75.0%

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Section 1: Demographics and comorbidities

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1.3 Comorbidities*

Rationale for inclusion:

To allow assessment of the percentage of COPD patients with co-morbidities (to better categorise the audited cohort). **NICE CG101: Chronic obstructive pulmonary disease in over 16s: diagnosis and management**[1] recommends that co-morbidities are considered in the management of patients with COPD.

Rationale for inclusion of depression and anxiety screening:

NICE CG91: Depression in adults with a chronic physical health problem: recognition and management[2] / **NICE CG113: Generalised anxiety disorder and panic disorder in adults: management**[3]

NICE guidelines for both depression and anxiety recommend i) primary care to be alert to possible depression (particularly in patients with a past history of depression or a chronic physical health problem with associated functional impairment) and consider asking patients who may have depression two screening questions; and ii) consider the diagnosis of generalised anxiety disorder in people presenting with anxiety or significant worry, and in people who attend primary care frequently who have a chronic physical health problem.

Condition	**Wales N=82,696**	**ABMU N=14,395**	**Afan N=1,665**	**Bay Health N=1,188**	**Bridgend East Network N=1,722**	**Bridgend North Network N=2,009**	**Bridgend West Network N=1,106**	**City Health N=1,357**	**Cwmtawe N=940**	**Llwchwr N=1,018**	**Neath N=1,463**	**Penderi N=895**	**Upper Valleys N=1,032**
Asthma	**34,622 (41.9%)**	6,704 (46.6%)	694 (41.7%)	527 (44.4%)	924 (53.7%)	940 (46.8%)	583 (52.7%)	385 (28.4%)	414 (44.0%)	568 (55.8%)	759 (51.9%)	397 (44.4%)	513 (49.7%)
Bronchiectasis	**3,946 (4.8%)**	578 (4.0%)	58 (3.5%)	49 (4.1%)	53 (3.1%)	81 (4.0%)	58 (5.2%)	62 (4.6%)	36 (3.8%)	52 (5.1%)	62 (4.2%)	33 (3.7%)	34 (3.3%)
Coronary heart disease	**33,054 (40.0%)**	5,880 (40.9%)	708 (42.5%)	475 (40.0%)	747 (43.4%)	713 (35.5%)	495 (44.8%)	553 (40.8%)	393 (41.8%)	460 (45.2%)	537 (36.7%)	352 (39.3%)	447 (43.3%)

* For information on gender (1.1) and age (1.2) of the audit cohort, please refer to the national report.

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Diabetes	**18,685 (22.6%)**	2,969 (20.6%)	395 (23.7%)	221 (18.6%)	410 (23.8%)	423 (21.1%)	221 (20.0%)	250 (18.4%)	198 (21.1%)	192 (18.9%)	265 (18.1%)	169 (18.9%)	225 (21.8%)
Heart failure	**7,443 (9.0%)**	1,270 (8.8%)	108 (6.5%)	121 (10.2%)	167 (9.7%)	184 (9.2%)	108 (9.8%)	111 (8.2%)	90 (9.6%)	121 (11.9%)	100 (6.8%)	67 (7.5%)	93 (9.0%)
Hypertension	**43,588 (52.7%)**	7,299 (50.7%)	898 (53.9%)	584 (49.2%)	905 (52.6%)	1094 (54.4%)	530 (47.9%)	588 (43.3%)	445 (47.3%)	477 (46.9%)	711 (48.6%)	443 (49.5%)	624 (60.5%)
Lung cancer	**1,921 (2.3%)**	305 (2.1%)	34 (2.0%)	19 (1.6%)	28 (1.6%)	56 (2.8%)	29 (2.6%)	32 (2.4%)	22 (2.3%)	27 (2.7%)	27 (1.8%)	13 (1.5%)	18 (1.7%)
Painful conditions[†]	**10,450 (12.6%)**	1,945 (13.5%)	257 (15.4%)	128 (10.8%)	215 (12.5%)	306 (15.2%)	142 (12.8%)	218 (16.1%)	127 (13.5%)	152 (14.9%)	166 (11.3%)	110 (12.3%)	124 (12.0%)
Stroke	**8,623 (10.4%)**	1,628 (11.3%)	151 (9.1%)	108 (9.1%)	230 (13.4%)	234 (11.6%)	168 (15.2%)	135 (9.9%)	96 (10.2%)	124 (12.2%)	157 (10.7%)	106 (11.8%)	119 (11.5%)
Osteoporosis	**10,657 (12.9%)**	2,206 (15.3%)	248 (14.9%)	241 (20.3%)	267 (15.5%)	248 (12.3%)	241 (21.8%)	166 (12.2%)	109 (11.6%)	123 (12.1%)	223 (15.2%)	94 (10.5%)	246 (23.8%)
Mental health conditions													
Schizophrenia, bipolar and other psychotic illness	**6,448 (7.8%)**	1,092 (7.6%)	168 (10.1%)	111 (9.3%)	87 (5.1%)	170 (8.5%)	68 (6.1%)	119 (8.8%)	76 (8.1%)	84 (8.3%)	101 (6.9%)	41 (4.6%)	67 (6.5%)
Anxiety	**25,180 (30.5%)**	4,447 (30.9%)	552 (33.2%)	326 (27.4%)	529 (30.7%)	590 (29.4%)	362 (32.7%)	499 (36.8%)	261 (27.8%)	329 (32.3%)	402 (27.5%)	273 (30.5%)	324 (31.4%)
Screened for anxiety or been diagnosed in the past two years	***4,108 (5.0%)***	*618 (4.3%)*	*79 (4.7%)*	*39 (3.3%)*	*71 (4.1%)*	*94 (4.7%)*	*48 (4.3%)*	*59 (4.3%)*	*37 (3.9%)*	*57 (5.6%)*	*46 (3.1%)*	*44 (4.9%)*	*44 (4.3%)*
Depression	**24,861**	4,467	605	296	529	637	375	445	252	324	483	224	297

[†] Defined as patients who had a record of 4 or more prescription analgesia medications in the last 12 months, OR 4 or more specified anti-epileptics in the absence of an epilepsy Read code in the last 12 months.

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	(30.1%)	(31.0%)	(36.3%)	(24.9%)	(30.7%)	(31.7%)	(33.9%)	(32.8%)	(26.8%)	(31.8%)	(33.0%)	(25.0%)	(28.8%)
Screened for depression or been diagnosed in the past two years	***14,465 (17.5%)***	*1,360 (9.5%)*	*408 (24.5%)*	*81 (6.8%)*	*112 (6.5%)*	*153 (7.6%)*	*117 (10.6%)*	*96 (7.1%)*	*74 (7.9%)*	*93 (9.1%)*	*87 (5.9%)*	*52 (5.8%)*	*87 (8.4%)*

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Section 2: Getting the diagnosis right

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Navigation

This section contains the following tables. If viewing this report on a computer, you can select the table that you wish to see from the list below.

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  - 2.1.1 The percentage of people diagnosed with COPD in the past 2 years who have a post-bronchodilator FEV1/FVC <0.7 (consistent with airways obstruction)
  - 2.1.2 Spirometry: The percentage of people diagnosed with COPD in the past 2 years who have any FEV1/FVC ratio code (including 339m) with a result of >0.2 and <0.7

- 2.2 X-ray
  - 2.2.1 The percentage of people with COPD who had a chest x-ray or CT scan 6 months prior to diagnosis or within 6 months of diagnosis (i.e. when COPD code first added to disease register) (for diagnoses made in the last two years)

2.1 Spirometry

Rationale for inclusion:

NICE CG101 COPD[1] and NICE QS 10 quality statement 1: *People aged over 35 years who present with a risk factor and one or more symptoms of chronic obstructive pulmonary disease (COPD) should have post -bronchodilator spirometry. A post bronchodilator FEV1/ vital capacity (VC)[‡] or FEV1/FVC < 0.7 is required to make a diagnosis of COPD.[4]*

[‡] A post bronchodilator FEV1/Slow or relaxed VC Read code does not exist, so it was not possible to extract information about the frequency with which this particular diagnostic test is conducted.

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COPD can be diagnosed when the patient has been exposed to a known risk factor, they have a typical clinical presentation and when there is an objective measurement of fixed airways obstruction as determined by good quality spirometry. A small minority of patients may need more complex hospital based lung function or they may be diagnosed with emphysema after CT scanning.

2.1.1 The percentage of people diagnosed with COPD in the past 2 years who have a post-bronchodilator FEV1/FVC <0.7 (consistent with airways obstruction)

Spirometry code	Wales N=10,868	ABMU N=2,023	Afan N=229	Bay Health N=180	Bridgend East Network N=201	Bridgend North Network N=268	Bridgend West Network N=156	City Health N=152	Cwmtawe N=162	Llwchwr N=149	Neath N=221	Penderi N=166	Upper Valleys N=139
No 339m code	**9,660 (88.8%)**	1,861 (92.0%)	218 (95.2%)	176 (97.8%)	201 (100%)	207 (77.2%)	144 (92.3%)	151 (99.3%)	130 (85.5%)	149 (100%)	190 (86.0%)	156 (94.0%)	139 (100%)
339m is ≥0.2 and <0.7	**918 (8.5%)**	130 (6.4%)	7 (3.1%)	< 5	< 5	43 (16.0%)	12 (7.7%)	< 5	27 (16.7%)	< 5	28 (12.7%)	9 (5.4%)	< 5
339m invalid or ≥0.7	**290 (2.7%)**	32 (1.6%)	< 5	< 5	< 5	18 (6.7%)	< 5	< 5	5 (3.1%)	< 5	< 5	< 5	< 5

2.1.2 Spirometry: The percentage of people diagnosed with COPD in the past 2 years who have any FEV1/FVC ratio code (including 339m) with a result of ≥0.2 and <0.7

	Wales N=10,868	ABMU N=2,023	Afan N=229	Bay Health N=180	Bridgend East Network N=201	Bridgend North Network N=268	Bridgend West Network N=156	City Health N=152	Cwmtawe N=162	Llwchwr N=149	Neath N=221	Penderi N=166	Upper Valleys N=139
Any spirometry codes ≥0.2 and <0.7	**5,906 (54.3%)**	1,163 (57.5%)	119 (52.0%)	108 (60.0%)	120 (59.7%)	156 (58.2%)	94 (60.3%)	69 (45.4%)	115 (71.0%)	77 (51.7%)	133 (60.2%)	93 (56.0%)	79 (56.8%)

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2.2 X-ray

2.2.1 The percentage of people with COPD who had a chest X-ray or CT scan 6 months prior to diagnosis or within 6 months of diagnosis (for diagnoses made in the last two years)

Rationale for inclusion:

NICE CG101 COPD[1] recommends that at the time of their initial diagnostic evaluation, in addition to spirometry, all patients should have a chest x-ray to exclude other pathologies.

	Wales N=10,868	ABMU N=2,023	Afan N=229	Bay Health N=180	Bridgend East Network N=201	Bridgend North Network N=268	Bridgend West Network N=156	City Health N=152	Cwmtawe N=162	Llwchwr N=149	Neath N=221	Penderi N=166	Upper Valleys N=139
Chest x-ray within 6 months	**4,300 (39.6%)**	899 (44.4%)	110 (48.0%)	63 (35.0%)	83 (41.3%)	128 (47.8%)	84 (53.8%)	55 (36.2%)	67 (41.4%)	70 (47.0%)	87 (39.4%)	91 (54.8%)	61 (43.9%)

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Section 3: Assessing severity and future risk

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This section contains the following tables. If viewing this report on a computer, you can select the table that you wish to see from the list below.

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- 3.2 The proportion of people with COPD who have a measure of FEV1 percent-predicted value recorded in the last year
- 3.3 The proportion and status of people with COPD who were asked about tobacco smoking in the last year
- 3.4 Exacerbation count in the past year
    - 3.4.1 Using validated method
    - 3.4.2 Using GP recorded exacerbation codes
- 3.5 Oxygen: management and treatment

3.1 The proportion of people with COPD with MRC scores 1, 2, 3, 4, 5 and 'not recorded' in the last year

Rationale for inclusion:

NICE CG101 COPD:[1] *One of the primary symptoms of COPD is breathlessness. The Medical Research Council (MRC) breathlessness scale should be used to grade the breathlessness according to the level of exertion required to elicit it.*

Breathlessness of MRC score 3 or more represents a significant functional impairment.[5] Patients with MRC score 3 or more should be receiving the key components of a review. They should be receiving pulmonary rehabilitation as soon as possible. They may also require additional pharmacological interventions and oxygen therapy so a more targeted and intensive review may be required.

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MRC score	**Wales N=82,696**	**ABMU N=14,395**	**Afan N=1,665**	**Bay Health N=1,188**	**Bridgend East Network N=1,722**	**Bridgend North Network N=2,009**	**Bridgend West Network N=1,106**	**City Health N=1,357**	**Cwmtawe N=940**	**Llwchwr N=1,018**	**Neath N=1,463**	**Penderi N=895**	**Upper Valleys N=1,032**
1	**6,368 (7.7%)**	999 (6.9%)	99 (5.9%)	95 (8.0%)	120 (7.0%)	153 (7.6%)	55 (5.0%)	56 (4.1%)	79 (8.4%)	80 (7.9%)	152 (10.4%)	72 (8.0%)	38 (3.7%)
2	**22,144 (26.8%)**	3,737 (26.0%)	396 (23.8%)	303 (25.5%)	457 (26.5)	444 (22.1%)	298 (26.9%)	459 (33.8%)	296 (31.5%)	222 (21.8%)	394 (26.9%)	204 (22.8%)	264 (25.6%)
3	**13,715 (16.6%)**	2,638 (18.3%)	309 (18.6%)	208 (17.5%)	293 (17.0%)	372 (18.5%)	230 (20.8%)	200 (14.7%)	207 (22.0%)	174 (17.1%)	347 (23.7%)	88 (9.8%)	210 (20.3%)
4	**7,021 (8.5%)**	1,487 (10.3%)	207 (12.4%)	142 (12.0%)	174 (10.1%)	269 (13.4%)	92 (8.3%)	100 (7.4%)	70 (7.4%)	109 (10.7%)	125 (8.5%)	97 (10.8%)	102 (9.9%)
5	**1,153 (1.4%)**	261 (1.8%)	23 (1.4%)	19 (1.6%)	28 (1.6%)	73 (3.6%)	13 (1.2%)	15 (1.1%)	8 (0.9%)	24 (2.4%)	17 (1.2%)	18 (2.0%)	23 (2.2%)
Not recorded	**32,295 (39.1%)**	5,273 (36.6%)	631 (37.9%)	421 (35.4%)	650 (37.7%)	698 (34.7%)	418 (37.8%)	527 (38.8%)	280 (29.8%)	409 (40.2%)	428 (29.3%)	416 (46.5%)	395 (38.3%)

Grade 1 – not troubled by breathlessness or strenuous exercise
Grade 2 – short of breath when hurrying or walking up a slight hill
Grade 3 – walks slower than contemporaries on level ground because of breathlessness or has to stop for breath
Grade 4 – stops to breathe after walking 100 metres (109 yards) or after a few minutes walking on level ground
Grade 5 – too breathless to leave the house or breathless when dressing or undressing

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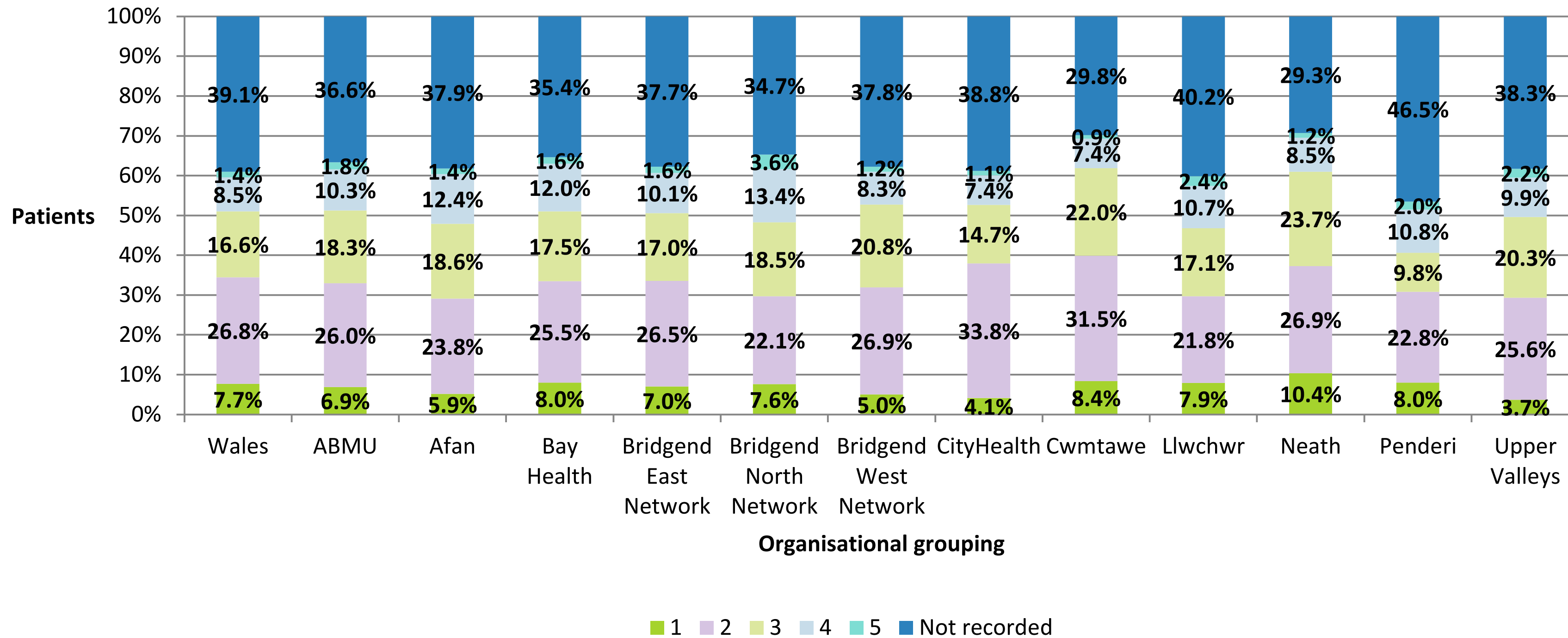
The proportion of patients with each MRC score, or 'not recorded' in the last year



3.2 The proportion of people with COPD who have a measure of FEV1 %-predicted value recorded in the last year

Rationale for inclusion:

NICE CG101 COPD:[1] There is no specific recommendation to measure annually but treatment thresholds for pulmonary rehabilitation, inhaled therapies and assessment for oxygen are determined by FEV1%-predicted and the subsequent classification of severity.

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	Wales N=82,696	ABMU N=14,395	Afan N=1,665	Bay Health N=1,188	Bridgend East Network N=1,722	Bridgend North Network N=2,009	Bridgend West Network N=1,106	City Health N=1,357	Cwmtawe N=940	Llwchwr N=1,018	Neath N=1,463	Penderi N=895	Upper Valleys N=1,032
FEV1 %-predicted value in last year	**22,756 (27.5%)**	3,544 (24.6%)	462 (27.7%)	208 (17.5%)	560 (32.5%)	894 (44.5%)	79 (7.1%)	192 (14.1%)	378 (40.2%)	194 (19.1%)	383 (26.2%)	192 (21.5%)	< 5

3.3 The proportion and status of people with COPD who were asked about tobacco smoking in the last year

Rationale for inclusion:

NICE QS43 – Smoking: supporting people to stop[6] quality statement 1 (linked to NICE QS10): *People are asked if they smoke by their healthcare practitioner, and those who smoke are offered advice on how to stop.*

Tobacco smoking is the cause of COPD in the vast majority of people. Stopping smoking reduces the rate of decline of lung function and reduces exacerbations. Other treatments for COPD work better if tobacco use has ceased.[7,8]

Smoking status	Wales N=82,696	ABMU N=14,395	Afan N=1,665	Bay Health N=1,188	Bridgend East Network N=1,722	Bridgend North Network N=2,009	Bridgend West Network N=1,106	City Health N=1,357	Cwmtawe N=940	Llwchwr N=1,018	Neath N=1,463	Penderi N=895	Upper Valleys N=1,032
Never smoker	**7,574 (9.2%)**	1,239 (8.6%)	145 (8.7%)	117 (9.8%)	172 (10.0%)	157 (7.8%)	129 (11.7%)	54 (4.0%)	102 (10.9%)	82 (8.1%)	126 (8.6%)	61 (6.8%)	94 (9.1%)
Ex-smoker	**34,551 (41.8%)**	6,240 (43.4%)	714 (42.9%)	557 (46.9%)	735 (42.7%)	842 (41.9%)	424 (38.3%)	507 (37.4%)	442 (47.0%)	466 (45.8%)	707 (48.3%)	354 (39.6%)	492 (47.7%)
Current smoker	**21,924 (26.5%)**	4,017 (27.9%)	508 (30.5%)	249 (21.0%)	468 (27.2%)	570 (28.4%)	254 (23.0%)	469 (34.6%)	239 (25.4%)	265 (26.0%)	425 (29.0%)	297 (33.2%)	273 (26.5%)
Not asked about smoking	**18,647 (22.6%)**	2,899 (20.1%)	298 (17.9%)	265 (22.3%)	347 (20.2%)	440 (21.9%)	299 (27.0%)	327 (24.1%)	157 (16.7%)	205 (20.1%)	205 (14.0%)	183 (20.4%)	173 (16.8%)

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3.4 Exacerbation count in the past year

Rationale for inclusion:

NICE CG101 COPD:[1] *A more comprehensive assessment of severity includes … the frequency of exacerbations …* The guideline also advises on treatment thresholds for pulmonary rehabilitation, self-management planning and inhaled therapies according to exacerbation frequency.

Exacerbations accelerate the decline of COPD, impair quality of life during the episode and, if left untreated, can result in hospitalisation and increase risk of death.[9,10,11] Recovery can be prolonged during which time the patient and carer will need additional physical and psychosocial support. Recognising and recording exacerbations should be a key element of risk stratification in a general practice COPD population.

The learning from the first extraction was that exacerbation Read codes (eg 66Yf) are not reliably used. Therefore, in order to ensure that we were able to provide a more comprehensive and accurate breakdown of exacerbation rates at a population level, we have used a validated modelling method with high reliability.[12,13,14,15] LRTI codes and concurrent respiratory antibiotic and oral prednisolone codes are used in this model (for more information, please refer to the methodology in the national report). An analysis solely using extracted exacerbation Read codes is also presented, for comparative purposes (see 3.4.2).

3.4.1 Exacerbation count in the past year – using validated method

Due to absent LRTI codes from some practices, there is a slightly lower COPD population denominator for this measure.[§]

[§] This is due to several practices closing partway through the extraction period.

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Number of exacerbations	**Wales N=82,133**	**ABMU N=14,177**	**Afan N=1,498**	**Bay Health N=1,188**	**Bridgend East Network N=1,722**	**Bridgend North Network N=2,009**	**Bridgend West Network N=1,055**	**City Health N=1,357**	**Cwmtawe N=940**	**Llwchwr N=1,018**	**Neath N=1,463**	**Penderi N=895**	**Upper Valleys N=1,032**
0	**47,724 (58.1%)**	8,265 (58.3%)	830 (55.4%)	770 (64.8%)	927 (53.8%)	1,109 (55.2%)	680 (64.5%)	805 (59.3%)	554 (58.9%)	561 (55.1%)	867 (59.3%)	520 (58.1%)	642 (62.2%)
1	**15,017 (18.3%)**	2,666 (18.8%)	312 (20.8%)	211 (17.8%)	354 (20.6%)	365 (18.2%)	169 (16.0%)	254 (18.7%)	181 (19.3%)	203 (19.9%)	260 (17.8%)	179 (20%)	178 (17.2%)
2	**7,412 (9.0%)**	1,230 (8.7%)	136 (9.1%)	85 (7.2%)	154 (8.9%)	202 (10.1%)	77 (7.3%)	115 (8.5%)	71 (7.6%)	113 (11.1%)	113 (7.7%)	79 (8.8%)	85 (8.2%)
>2	**11,980 (14.6%)**	2,016 (14.2%)	220 (14.7%)	122 (10.3%)	287 (16.7%)	333 (16.6%)	129 (12.2%)	183 (13.5%)	134 (14.3%)	141 (13.9%)	223 (15.2%)	117 (13.1%)	127 (12.3%)

3.4.2 Exacerbation count in the past year – using GP recorded exacerbation codes

Number of exacerbations	**Wales N=82,696**	**ABMU N=14,395**	**Afan N=1,665**	**Bay Health N=1,188**	**Bridgend East Network N=1,722**	**Bridgend North Network N=2,009**	**Bridgend West Network N=1,106**	**City Health N=1,357**	**Cwmtawe N=940**	**Llwchwr N=1,018**	**Neath N=1,463**	**Penderi N=895**	**Upper Valleys N=1,032**
0	**68,458 (82.8%)**	12,369 (85.9%)	1,513 (90.9%)	1,054 (88.7%)	1,387 (80.5%)	1,560 (77.7%)	967 (87.4%)	1,189 (87.6%)	890 (94.7%)	857 (84.2%)	1,301 (88.9%)	737 (82.3%)	914 (88.6%)
1	**8,793 (10.6%)**	1,256 (8.7%)	107 (6.4%)	80 (6.7%)	192 (11.1%)	243 (12.1%)	104 (9.4%)	100 (7.4%)	40 (4.3%)	116 (11.4%)	97 (6.6%)	87 (9.7%)	90 (8.7%)
2	**3,064 (3.7%)**	426 (3.0%)	24 (1.4%)	24 (2.0%)	73 (4.2%)	107 (5.3%)	24 (2.2%)	43 (3.2%)	6 (0.6%)	32 (3.1%)	26 (1.8%)	47 (5.3%)	20 (1.9%)
>2	**2,381 (2.9%)**	344 (2.4%)	21 (1.3%)	30 (2.5%)	70 (4.1%)	99 (4.9%)	11 (1.0%)	25 (1.8%)	< 5	13 (1.3%)	39 (2.7%)	24 (2.7%)	8 (0.8%)

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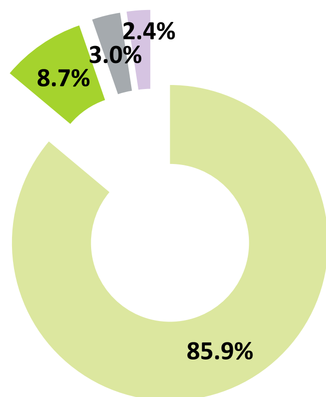
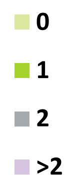
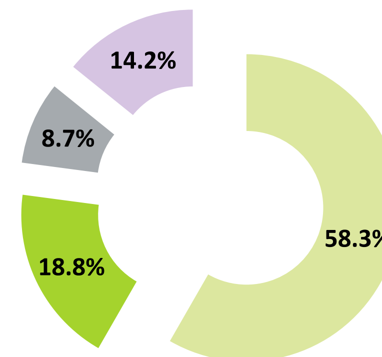
Exacerbation count in the past year in the health board

Abertawe Bro Morgannwg University LHB
Using GP recorded codes





Abertawe Bro Morgannwg University LHB
Using validated method



3.5 Oxygen: management and treatment

Rationale for inclusion:

NICE QS10 - Quality statement 3:[4] *People with stable COPD and a persistent resting stable oxygen saturation level of 92% or less have their arterial blood gases measured to assess whether they need long-term oxygen therapy.*

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Wales	ABMU	Afan	Bay Health	Bridgend East Network	Bridgend North Network	Bridgend West Network	City Health	Cwmtawe	Llwchwr	Neath	Penderi	Upper Valleys
People with stable COPD and a persistent resting stable oxygen saturation level of 92% or less in the last 2 years who have evidence of an arterial blood gas measurement or referral for home oxygen assessment												
N=6,734 **747** **(11.1%)**	**N=1,118** 145 (13.0%)	**N=126** 17 (13.5%)	**N=84** 5 (6.0%)	**N=148** 8 (5.4%)	**N=195** 25 (12.8%)	**N=91** 23 (25.3%)	**N=104** 10 (9.6%)	**N=57** < 5	**N=53** 8 (15.1%)	**N=92** 7 (7.6%)	**N=79** 21 (26.6%)	**N=89** 19 (21.3%)
People with COPD who have a record of oxygen therapy in the past 6 months												
N=82,696 **639** **(0.8%)**	**N=14,395** 129 (0.9%)	**N=1,665** 10 (0.6%)	**N=1,188** < 5	**N=1,722** < 5	**N=2,009** 17 (0.8%)	**N=1,106** 13 (1.2%)	**N=1,357** 8 (0.6%)	**N=940** < 5	**N=1,018** 6 (0.6%)	**N=1,463** 6 (0.4%)	**N=895** 31 (3.5%)	**N=1,032** 35 (3.4%)

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Section 4: Providing high value care

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- 4.2 The proportion of patients with COPD who have had the influenza immunisation in the preceding 1 August to 31 March
- 4.3 The proportion of people with COPD who were recorded as a current smoker at any time in the past 2 years who have received or had a referral to a behavioural change intervention (BCI) and had a stop smoking drug prescribed
- 4.4 Pulmonary rehabilitation
  - 4.4.1 Proportion of people with COPD with MRC scores 3-5 who have been referred to PR in the past 3 years
  - 4.4.2 Proportion of people with COPD who are breathless (any MRC score) and have been referred to PR in the past 3 years
- 4.5 Use of inhaled therapies in the last 6 months of the audit period
  - 4.5.1 Patients issued a prescription for inhaled therapy in the last six months of the audit period
  - 4.5.2 Types of inhaled therapy prescribed to patients in the last six months of the audit period

4.1 People with COPD who are prescribed an inhaler who have evidence of an inhaler technique check in the past year

Rationale for inclusion:

NICE QS10 - Quality statement 2:[4] *People with COPD who are prescribed an inhaler have their inhaler technique assessed when starting treatment and then regularly during treatment.*

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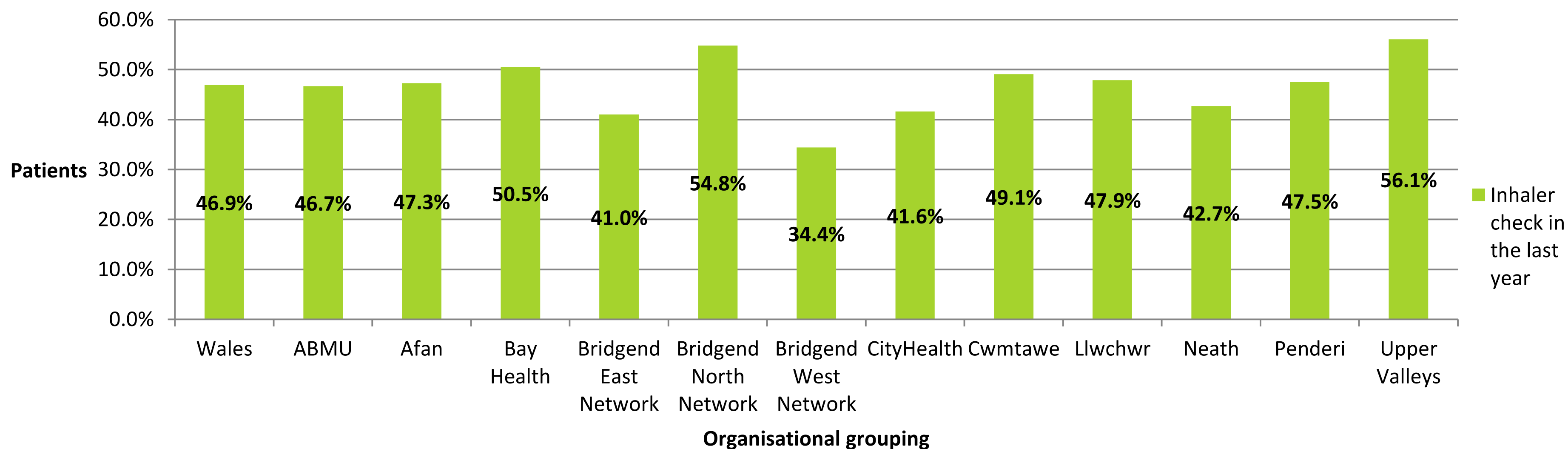
	Wales N=75,923	ABMU N=13,310	Afan N=1,548	Bay Health N=1,078	Bridgend East Network N=1,597	Bridgend North Network N=1,882	Bridgend West Network N=1,055	City Health N=1,274	Cwmtawe N=854	Llwchwr N=929	Neath N=1,302	Penderi N=835	Upper Valleys N=956
Inhaler check in the last year	**35,572 (46.9%)**	6,209 (46.7%)	732 (47.3%)	544 (50.5%)	655 (41.0%)	1,032 (54.8%)	363 (34.4%)	530 (41.6%)	419 (49.1%)	445 (47.9%)	556 (42.7%)	397 (47.5%)	536 (56.1%)

The percentage of patients with evidence of an inhaler check in the last year



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4.2 The proportion of patients with COPD who have had the influenza immunisation in the preceding 1 August to 31 March

Rationale for inclusion:

NICE CG101 COPD:[1] *Pneumococcal vaccination and an annual influenza vaccination should be offered to all patients with COPD as recommended by the Chief Medical Officer.*

	Wales N=82,696	ABMU N=14,395	Afan N=1,665	Bay Health N=1,188	Bridgend East Network N=1,722	Bridgend North Network N=2,009	Bridgend West Network N=1,106	City Health N=1,357	Cwmtawe N=940	Llwchwr N=1,018	Neath N=1,463	Penderi N=895	Upper Valleys N=1,032
Influenza immunisation received	**54,602 (66.0%)**	9,273 (64.4%)	1,156 (69.4%)	784 (66.0%)	1,189 (69.0%)	1,149 (57.2%)	695 (62.8%)	824 (60.7%)	603 (64.1%)	656 (64.4%)	988 (67.5%)	557 (62.2%)	672 (65.1%)

4.3 The proportion of people with COPD who were recorded as a current smoker at any time in the past 2 years who have received or had a referral to a behavioural change intervention (BCI) and had a stop smoking drug prescribed

Rationale for inclusion:

NICE QS10 is linked to **QS43 - Smoking: supporting people to stop:**[6]

- **NICE QS43 - Quality statement 2:** *People who smoke are offered a referral to an evidence-based smoking cessation service.*
- **NICE QS43 - Quality statement 3:** *People who smoke are offered behavioural support with pharmacotherapy by an evidence-based smoking cessation service.*
- **NICE QS43 - Quality statement 4:** *People who seek support to stop smoking and who agree to take pharmacotherapy are offered a full course.*
- **NICE QS43 - Quality statement 5:** *People who smoke who have set a quit date with an evidence-based smoking cessation service are assessed for carbon monoxide levels 4 weeks after the quit date.*

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	Wales N=35,045	ABMU N=6,152	Afan N=778	Bay Health N=347	Bridgend East Network N=789	Bridgend North Network N=791	Bridgend West Network N=360	City Health N=647	Cwmtawe N=359	Llwchwr N=363	Neath N=735	Penderi N=464	Upper Valleys N=519
Current smokers who received BCI referral/smoking-cessation pharmacotherapy	**4,383 (12.5%)**	467 (7.6%)	67 (8.6%)	27 (7.8%)	66 (8.4%)	86 (10.9%)	58 (16.1%)	50 (7.7%)	12 (3.3%)	17 (4.7%)	44 (6%)	21 (4.5%)	19 (3.7%)

4.4 Pulmonary rehabilitation (PR)

Rationale for inclusion:

NICE QS10 - Quality statement 4:[4] *People with stable COPD and exercise limitation due to breathlessness are referred to a PR programme.*

4.4.1 Proportion of people with COPD with MRC scores 3-5 who have been referred to PR in the past 3 years

	Wales N=15,190	ABMU N=2,825	Afan N=346	Bay Health N=201	Bridgend East Network N=281	Bridgend North Network N=422	Bridgend West Network N=340	City Health N=237	Cwmtawe N=109	Llwchwr N=244	Neath N=313	Penderi N=166	Upper Valleys N=166
MRC score 3-5 and referred for PR	**7,621 (50.2%)**	1,470 (52.0%)	231 (66.8%)	115 (57.2%)	136 (48.4%)	152 (36%)	110 (32.4%)	102 (43%)	65 (59.6%)	174 (71.3%)	199 (63.6%)	94 (56.6%)	92 (55.4%)

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4.4.2 Proportion of people with COPD who are breathless (any MRC score) and have been referred to PR in the past 3 years

	Wales N=47,974	ABMU N=8,409	Afan N=980	Bay Health N=616	Bridgend East Network N=719	Bridgend North Network N=1,147	Bridgend West Network N=815	City Health N=899	Cwmtawe N=507	Llwchwr N=650	Neath N=893	Penderi N=591	Upper Valleys N=592
Any MRC score and referred to PR	**10,179 (21.2%)**	1,850 (22.0%)	305 (31.1%)	146 (23.7%)	191 (26.6%)	175 (15.3%)	133 (16.3%)	135 (15.0%)	88 (17.4%)	217 (33.4%)	240 (26.9%)	109 (18.4%)	111 (18.8%)

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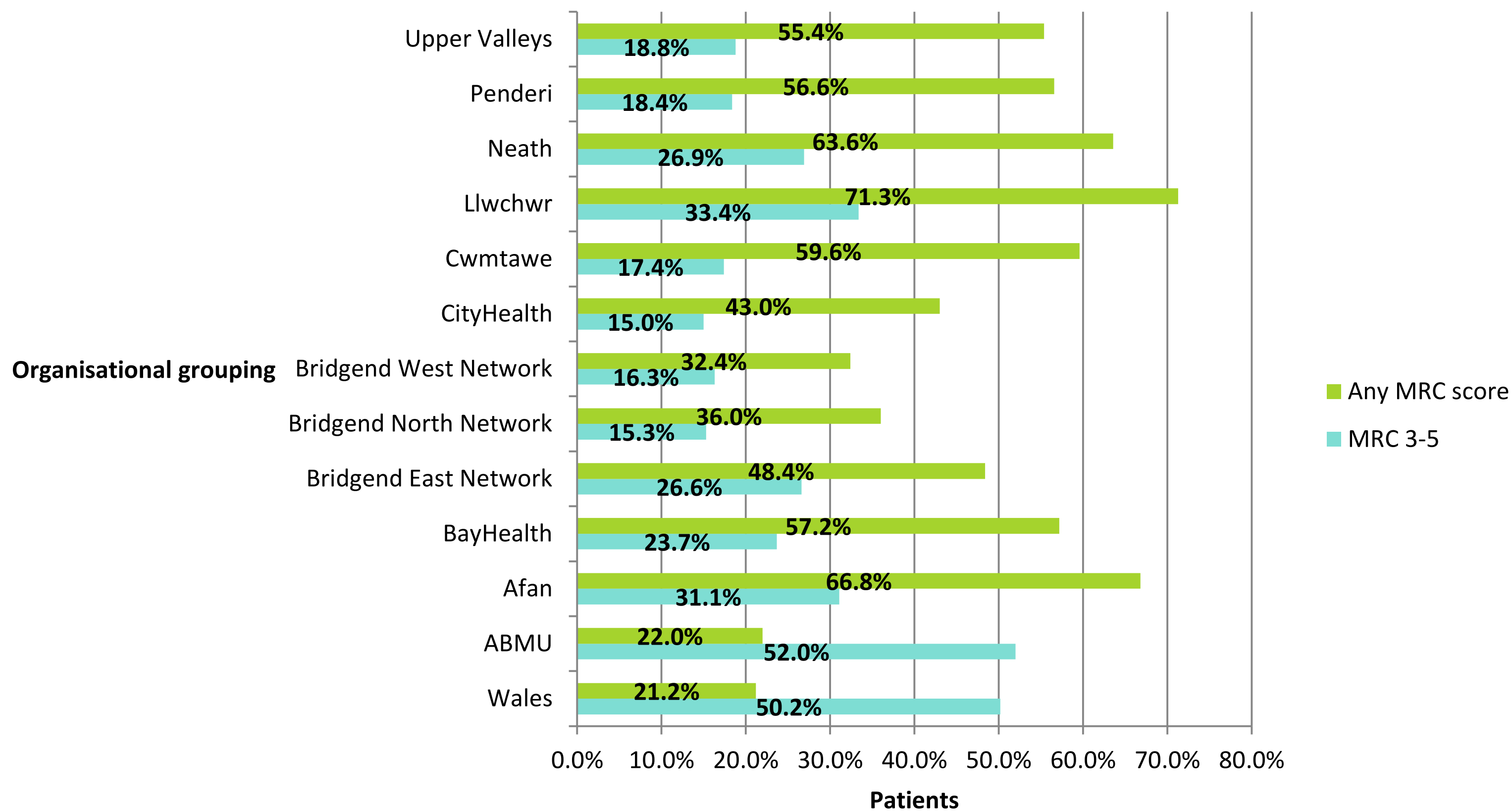
Patients with COPD who have been referred for PR



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4.5 Use of inhaled therapies in the last 6 months of the audit period

Rationale for inclusion:

NICE CG101 COPD[1]

- *In people with stable COPD who remain breathless or have exacerbations despite use of short acting bronchodilators as required, offer the following as maintenance therapy: if FEV1 ≥ 50% predicted: either long-acting beta2 agonist (LABA) or long-acting muscarinic antagonist (LAMA) if FEV1 < 50% predicted: either LABA with an inhaled corticosteroid (ICS) in a combination inhaler, or LAMA.*
- *Offer LAMA in addition to LABA+ICS to people with COPD who remain breathless or have exacerbations despite taking LABA+ICS, irrespective of their FEV1.*
- *In people with stable COPD and an FEV1 ≥ 50% who remain breathless or have exacerbations despite maintenance therapy with a LABA: consider LABA+ICS in a combination inhaler, consider LAMA in addition to LABA where ICS is declined or not tolerated.*
- *Offer LAMA in addition to LABA+ICS to people with COPD who remain breathless or have exacerbations despite taking LABA+ICS, irrespective of their FEV1.*
- *Consider LABA+ICS in a combination inhaler in addition to LAMA for people with stable COPD who remain breathless or have exacerbations despite maintenance therapy with LAMA irrespective of their FEV1.*
- *The choice of drug(s) should take into account the person's symptomatic response and preference, and the drug's potential to reduce exacerbations, it side effects and cost.*

4.5.1 Patients issued a prescription for inhaled therapy in the last six months of the audit period

	Wales	ABMU	Afan	Bay Health	Bridgend East Network	Bridgend North Network	Bridgend West Network	City Health	Cwmtawe	Llwchwr	Neath	Penderi	Upper Valleys
Patients on inhaled therapy	**55,434 (67.0%)**	9,822 (68.2%)	1,248 (75.0%)	732 (61.6%)	1,156 (67.1%)	1,400 (69.7%)	768 (69.4%)	882 (65.0%)	606 (64.5%)	672 (66.0%)	990 (67.7%)	621 (69.4%)	747 (72.4%)

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4.5.2 Types of inhaled therapy prescribed to patients in the last six months of the audit period

Inhaled therapy	**Wales N=55,434**	**ABMU N=9,822**	**Afan N=1,248**	**Bay Health N=732**	**Bridgend East Network N=1,156**	**Bridgend North Network N=1,400**	**Bridgend West Network N=768**	**City Health N=882**	**Cwmtawe N=606**	**Llwchwr N=672**	**Neath N=990**	**Penderi N=621**	**Upper Valleys N=747**
ICS	**4,493 (8.1%)**	717 (7.3%)	88 (7.1%)	65 (8.9%)	67 (5.8%)	63 (4.5%)	45 (5.9%)	59 (6.7%)	41 (6.8%)	47 (7.0%)	122 (12.3%)	51 (8.2%)	69 (9.2%)
LABA	**2,075 (3.7%)**	353 (3.6%)	16 (1.3%)	27 (3.7%)	47 (4.1%)	51 (3.6%)	12 (1.6%)	17 (1.9%)	30 (5.0%)	15 (2.2%)	31 (3.1%)	14 (2.3%)	93 (12.4%)
LABA + ICS	**16,351 (29.5%)**	2,241 (22.8%)	384 (30.8%)	166 (22.7%)	223 (19.3%)	294 (21.0%)	172 (22.4%)	211 (23.9%)	137 (22.6%)	164 (24.4%)	238 (24.0%)	99 (15.9%)	153 (20.5%)
LAMA	**10,899 (19.7%)**	2,774 (28.2%)	211 (16.9%)	246 (33.6%)	361 (31.2%)	359 (25.6%)	191 (24.9%)	233 (26.4%)	241 (39.8%)	206 (30.7%)	328 (33.1%)	246 (39.6%)	152 (20.3%)
LABA + LAMA	**1,699 (3.1%)**	295 (3.0%)	19 (1.5%)	10 (1.4%)	43 (3.7%)	61 (4.4%)	33 (4.3%)	17 (1.9%)	20 (3.3%)	10 (1.5%)	19 (1.9%)	< 5	61 (8.2%)
Triple therapy	**19,917 (35.9%)**	3,442 (35.0%)	530 (42.5%)	218 (29.8%)	415 (35.9%)	572 (40.9%)	315 (41.0%)	345 (39.1%)	137 (22.6%)	230 (34.2%)	252 (25.5%)	209 (33.7%)	219 (29.3%)

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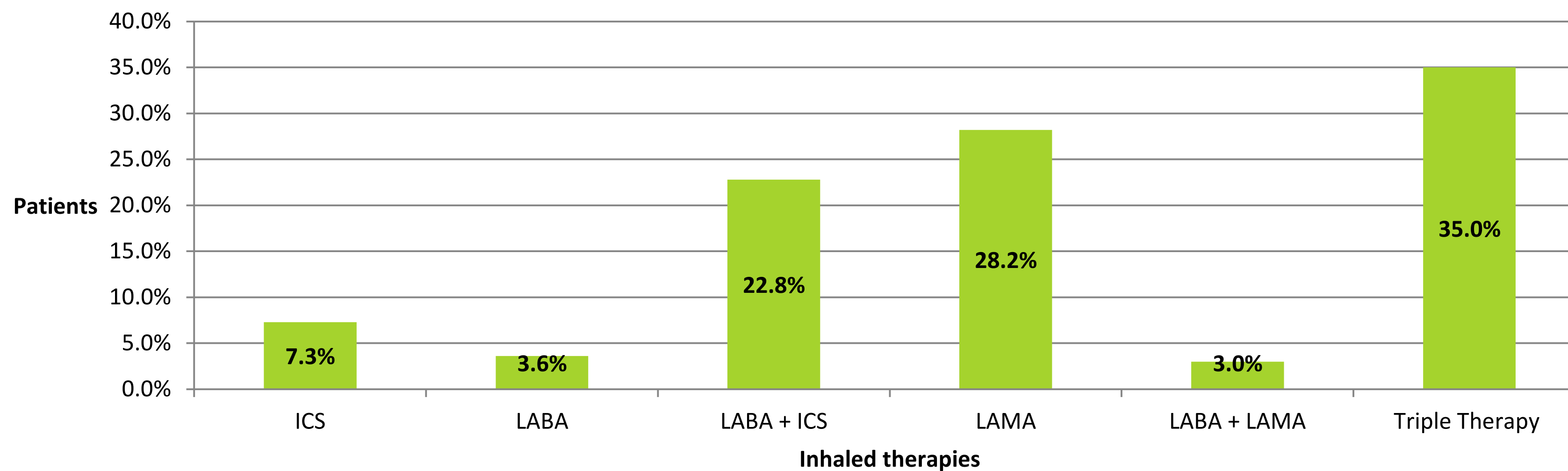
Inhaled therapies prescribed to patients in the last six months in your health board



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Appendix A: Report preparation

This report was written by the following, on behalf of the National COPD Audit Programme's primary care workstream group.

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Appendix B: Participating clusters and practices in your health board

For the full list of participating practices and clusters, please refer to the national report.

Abertawe Bro Morgannwg University Health Board		
Cluster	**Practices**	
Afan	Afan Valley Group Practice	Cwmavon Health Centre (Dr Huw Browning)
	Cwmavon Health Centre (Dr Penney)	Cymmer Surgery
	Fairfield Medical Centre	King's Surgery
	Mount Surgery	Riverside Surgery
BayHealth	Gower Medical Practice	Kings Road Surgery (Swansea)
	St Thomas Surgery (Swansea)	The Grove Medical Centre
	The Mumbles Medical Practice	The Surgery (Sketty)
	Uplands Surgery	
Bridgend East Network	Ashfield Surgery	Newcastle Surgery
	Oak Tree Surgery	Riversdale House
	The Medical Centre (Pencoed)	The New Surgery (Pencoed)
Bridgend North Network	Bron y Garn Surgery	Llynfi Surgery
	New Street Surgery	New Surgery (Pontycymmer)
	Ogmore Vale Surgery	The Surgery (Nantymoel)
	Tynycoed Surgery	Woodlands Surgery
Bridgend West Network	Dr T D Eales Surgery	Heathbridge House
	The Portway Surgery	The Surgery (North Cornelly)
CityHealth	Brunswick Health Centre	Greenhill Medical Centre
	High Street Surgery	Kingsway Surgery
	Mayhill Surgery	Nicholl St Medical Centre
	SA Medical Centre	The Harbourside Health Centre
Cwmtawe	Clydach Primary Care Centre	Llwyn Brwydrau Surgery
	New Cross Surgery	Strawberry Place Surgery
	Sway Road Surgery	
Llwchwr	Gowerton Medical Centre	Pen y Bryn Surgery
	Princess Street Surgery	Talybont Surgery
	Ty'r Felin Surgery	
Neath	Alfred Street Surgery	Briton Ferry Health Centre (Dr H Wilkes & Partners)
	Castle Surgery	Dyfed Road Health Centre
	Skewen Medical Centre	Tabernacle Surgery
	Victoria Gardens Surgery	Waterside Medical Practice
Penderi	Cheriton Medical Centre	Cwmfelin Medical Centre
	Fforestfach Medical Centre (Dr Powell)	Fforestfach Medical Centre (Dr Rees)
	Manselton Surgery	
Upper Valleys	Amman Tawe Partnership (Cwm)	Dulais Valley Primary Care Centre
	Pontardawe Health Centre	Vale of Neath Practice

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Appendix C: References

[1] National Institute for Health and Care Excellence. *Chronic obstructive pulmonary disease: Management of chronic obstructive pulmonary disease in adults in primary and secondary care (partial update) (CG101)*. London: NICE, 2010. www.nice.org.uk/guidance/CG101

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