Sg2 Service Kit

COPD Care Pathway Redesign

November 2010

health care intelligence

Welcome to the Sg2 COPD Service Kit

Sg2 forecasts that a proactive approach to COPD care pathway management will reduce COPD inpatient activity by 46% over the next 10 years. This equates to national savings of over £800m in COPD inpatient care alone.

On a local level, our latest research identifies that some PCTs can reduce their current COPD spend by over 40% by 2014. Work on care pathway redesign must begin today in order to achieve the scale of savings required by 2014. These types of care model innovations will remain paramount moving forward, regardless of the commissioning body empowered to drive change.

How much can you save?

This service kit is designed to help you:

Identify what opportunity there is within your organisation to save money through reducing COPD inpatient activity—while improving both quality and patient experience.

Plan an action strategy, including who to involve, what steps to take, timelines for success and likely impact.

Manage the change, by understanding metrics to guide progress, operational insights, management considerations, and global lessons learned.

In this kit you'll find:

Sg2's Impact of Change Forecast for COPD, all of England

Sg2's Impact of Change Forecast for COPD by PCT

Sg2's Improvement Guide for COPD management

Sg2 Global Practice Summaries on COPD management

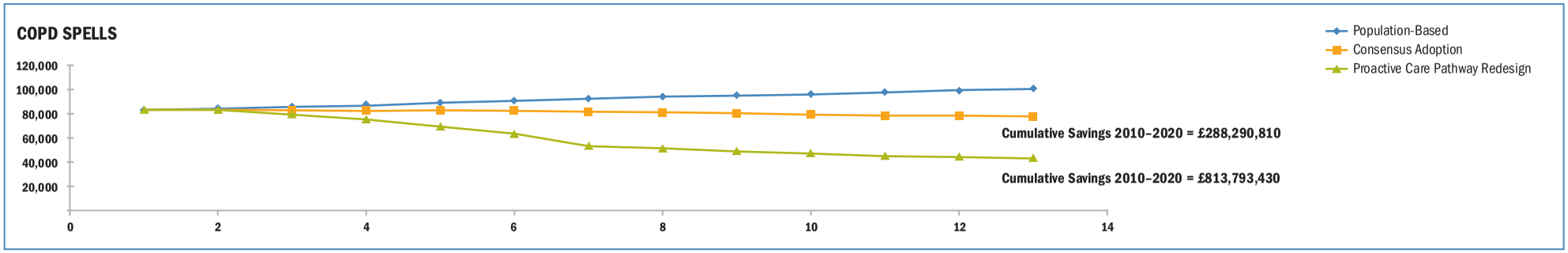
A Sg2 Case Study on COPD Care Pathway Redesign

Use this resource to:

- Craft the case for change in COPD management
- Identify opportunity
- Develop metrics to guide progress
- Define your action strategy
- Manage change
- Leverage global lessons learned
- Understand application of concepts within the NHS

A Case for Change in COPD Management

The impact of proactive care pathway redesign on spell utilisation and savings in England



SPELL CHANGE

REGION	FORECAST	HES 0809	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	10-YEAR % CHANGE (2010-2020)
England	Population-Based	84,155	85,230	86,485	87,828	89,758	91,541	93,105	94,561	95,912	97,237	98,594	99,928	101,234	17%
England	Consensus Adoption	84,155	83,754	83,379	83,001	83,110	82,948	82,425	81,656	80,718	79,793	79,069	78,591	78,343	-6%
England	Proactive Care Pathway Redesign	84,155	84,155	80,090	76,024	69,926	63,828	53,665	51,632	49,600	47,567	45,534	44,721	43,502	-46%

ASSOCIATED SAVINGS, COMPARED TO POPULATION FORECAST

REGION	FORECAST	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	CUMULATIVE SAVINGS (2010-2020)
England	Consensus Adoption	£0	£2,989,590	£6,290,068	£9,767,834	£13,442,866	£17,360,774	£21,554,423	£26,019,073	£30,605,176	£35,102,567	£39,262,771	£42,887,548	£45,997,711	£288,290,810
England	Proactive Care Pathway Redesign	£0	£2,177,528	£12,721,639	£23,443,906	£39,361,885	£54,982,351	£78,148,299	£85,108,226	£91,847,082	£98,542,770	£105,308,226	£109,628,282	£114,700,764	£813,793,430

Baseline figures for COPD utilization, are taken from the 2008-09 HES feed (the latest full year data set to be published). Sg2 understands that trusts will have access to more up-to-date data sources and we are happy to work with you to understand how indivdualised data sets influence the forecast output. COPD spells are defined as all admissions coded with HRGs D39 and D40.

Total savings are calculated by multiplying a) the number of spells that the model predicts could be avoided using each consensus and proactive care pathway remodeling strategies altering the care pathway, by b) 2008/09 Admitted Patient Care Mandatory Tariffs, HRGs D39, D40, adjusted for regional Market Force Factors within England. The model assumes all COPD spells are non-elective and thus the non-elective tariff and non-elective Market Force Factor-adjusted tariff is applied to all calculations, including spells with a LOS exceeding the HRG specific non-elective long stay trim-point.

Sg2 has calculated COPD savings due to reduced secondary utilization assuming that clinical dis-investment in secondary care is transferred to, and fully supports, primary care investments required to achieve care pathway re-design.

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A Case for Change in COPD Management

The impact of proactive care pathway redesign on spell utilisation and savings by PCT

PCT NAME	FORECAST	COPD SMR	COPD UTILISATION AS PROPORTION OF ALL SPELLS	HES BASELINE (2008-2009)	SPELLS 2010	SPELLS 2014	SPELL CHANGE (2010-2014)	TOTAL SAVINGS (2010-2014)	2014 SAVINGS/ POPULATION (1,000)	2014 SAVINGS/ 2008-9 SPEND	SPELLS 2020	SPELL CHANGE (2010-2020)	TOTAL SAVINGS (2010-2020)	2020 SAVINGS/ POPULATION (1,000)	2020 SAVINGS/ 2008-9 SPEND
South Gloucestershire	Population-Based	75.2	0.9%	252	265	292	10%				323	22%			
South Gloucestershire	Consensus Adoption	75.2	0.9%	252	255	259	1%	£206,252	£252	11%	250	-2%	£883,675	£547	23%
South Gloucestershire	Proactive Care Pathway Redesign	75.2	0.9%	252	240	165	-31%	£686,797	£945	40%	136	-43%	£2,599,716	£1,397	59%
Havering	Population-Based	118.9	1.4%	430	437	467	7%				496	13%			0%
Havering	Consensus Adoption	118.9	1.4%	430	421	413	-2%	£349,165	£473	11%	381	-10%	£1,461,853	£998	23%
Havering	Proactive Care Pathway Redesign	118.9	1.4%	430	408	265	-35%	£1,061,575	£1,731	40%	210	-49%	£4,107,471	£2,452	57%
Kingston	Population-Based	87.6	1.0%	172	177	192	9%				213	21%			0%
Kingston	Consensus Adoption	87.6	1.0%	172	170	170	0%	£150,604	£288	10%	166	-2%	£635,743	£618	22%
Kingston	Proactive Care Pathway Redesign	87.6	1.0%	172	164	113	-31%	£441,786	£1,016	36%	93	-43%	£1,761,113	£1,554	55%
Bromley	Population-Based	80.7	1.0%	364	372	399	7%				426	15%			0%
Bromley	Consensus Adoption	80.7	1.0%	364	358	353	-2%	£304,940	£312	11%	329	-8%	£1,278,870	£660	23%
Bromley	Proactive Care Pathway Redesign	80.7	1.0%	364	346	228	-34%	£923,419	£1,132	39%	182	-47%	£3,583,744	£1,624	56%
Greenwich Teaching	Population-Based	147.1	1.3%	399	400	413	3%				432	8%			0%
Greenwich Teaching	Consensus Adoption	147.1	1.3%	399	386	364	-6%	£316,370	£442	11%	329	-15%	£1,307,066	£919	22%
Greenwich Teaching	Proactive Care Pathway Redesign	147.1	1.3%	399	377	233	-38%	£899,894	£1,580	38%	177	-53%	£3,581,745	£2,237	54%
Barnet	Population-Based	64.7	0.8%	313	323	350	8%				386	19%			0%
Barnet	Consensus Adoption	64.7	0.8%	313	312	311	0%	£273,552	£255	11%	300	-4%	£1,155,572	£547	23%
Barnet	Proactive Care Pathway Redesign	64.7	0.8%	313	298	204	-32%	£832,018	£913	38%	168	-44%	£3,252,478	£1,368	57%
Hillingdon	Population-Based	93.0	1.0%	318	325	347	7%				372	14%			0%
Hillingdon	Consensus Adoption	93.0	1.0%	318	313	307	-2%	£266,492	£325	11%	286	-9%	£1,116,047	£687	23%
Hillingdon	Proactive Care Pathway Redesign	93.0	1.0%	318	302	198	-35%	£804,282	£1,178	40%	158	-48%	£3,124,350	£1,695	57%
Enfield	Population-Based	76.4	1.0%	320	327	346	6%				369	13%			0%
Enfield	Consensus Adoption	76.4	1.0%	320	315	306	-3%	£265,311	£288	11%	284	-10%	£1,109,041	£608	23%
Enfield	Proactive Care Pathway Redesign	76.4	1.0%	320	304	198	-35%	£796,428	£1,045	39%	157	-48%	£3,090,269	£1,495	56%
Barking and Dagenham	Population-Based	158.3	1.6%	391	383	386	1%				385	0%			0%
Barking and Dagenham	Consensus Adoption	158.3	1.6%	391	369	339	-8%	£308,100	£557	10%	289	-22%	£1,248,789	£1,128	21%
Barking and Dagenham	Proactive Care Pathway Redesign	158.3	1.6%	391	368	216	-41%	£812,667	£1,976	37%	158	-57%	£3,286,662	£2,642	49%
City and Hackney Teaching	Population-Based	120.3	0.9%	259	262	274	4%				292	11%			0%
City and Hackney Teaching	Consensus Adoption	120.3	0.9%	259	253	242	-4%	£228,649	£319	10%	224	-11%	£945,353	£664	20%
City and Hackney Teaching	Proactive Care Pathway Redesign	120.3	0.9%	259	246	159	-35%	£639,848	£1,110	33%	126	-49%	£2,546,440	£1,613	48%
Tower Hamlets	Population-Based	171.8	1.8%	518	514	524	2%				561	9%			0%
Tower Hamlets	Consensus Adoption	171.8	1.8%	518	495	461	-7%	£423,941	£582	9%	429	-13%	£1,741,785	£1,206	20%
Tower Hamlets	Proactive Care Pathway Redesign	171.8	1.8%	518	489	303	-38%	£1,102,167	£1,990	32%	231	-53%	£4,620,879	£2,962	48%

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PCT NAME	FORECAST	COPD SMR	COPD UTILISATION AS PROPORTION OF ALL SPELLS	HES BASELINE (2008-2009)	SPELLS 2010	SPELLS 2014	SPELL CHANGE (2010-2014)	TOTAL SAVINGS (2010-2014)	2014 SAVINGS/ POPULATION (1,000)	2014 SAVINGS/ 2008-9 SPEND	SPELLS 2020	SPELL CHANGE (2010-2020)	TOTAL SAVINGS (2010-2020)	2020 SAVINGS/ POPULATION (1,000)	2020 SAVINGS/ 2008-9 SPEND
Newham	Population-Based	139.9	0.8%	296	293	295	1%				301	3%			0%
Newham	Consensus Adoption	139.9	0.8%	296	282	260	-8%	£257,753	£329	10%	230	-19%	£1,042,137	£666	21%
Newham	Proactive Care Pathway Redesign	139.9	0.8%	296	280	174	-38%	£657,236	£1,111	35%	133	-52%	£2,681,196	£1,543	49%
Haringey Teaching	Population-Based	82.8	0.8%	235	239	251	5%				265	11%			0%
Haringey Teaching	Consensus Adoption	82.8	0.8%	235	230	222	-4%	£202,252	£281	11%	203	-12%	£839,728	£588	22%
Haringey Teaching	Proactive Care Pathway Redesign	82.8	0.8%	235	223	144	-35%	£592,800	£1,007	38%	114	-49%	£2,302,892	£1,423	54%
Blackburn With Darwen	Population-Based	159.3	1.6%	340	343	363	6%				384	12%			0%
Blackburn With Darwen	Consensus Adoption	159.3	1.6%	340	330	320	-3%	£261,137	£588	12%	294	-11%	£1,090,909	£1,240	25%
Blackburn With Darwen	Proactive Care Pathway Redesign	159.3	1.6%	340	322	206	-36%	£766,114	£2,142	43%	161	-50%	£3,045,859	£3,055	62%
Herefordshire	Population-Based	69.1	1.0%	205	214	236	10%				265	24%			0%
Herefordshire	Consensus Adoption	69.1	1.0%	205	206	209	1%	£164,174	£290	11%	207	0%	£702,407	£633	23%
Herefordshire	Proactive Care Pathway Redesign	69.1	1.0%	205	196	137	-30%	£519,900	£1,061	39%	114	-42%	£2,027,367	£1,629	60%
Milton Keynes	Population-Based	116.1	1.2%	371	395	456	15%				542	37%			0%
Milton Keynes	Consensus Adoption	116.1	1.2%	371	381	406	7%	£302,269	£406	12%	428	12%	£1,333,608	£924	27%
Milton Keynes	Proactive Care Pathway Redesign	116.1	1.2%	371	357	263	-26%	£1,024,560	£1,529	45%	227	-36%	£4,050,309	£2,513	74%
Newcastle	Population-Based	133.1	1.8%	662	667	689	3%			0%	717	7%			0%
Newcastle	Consensus Adoption	133.1	1.8%	662	643	609	-5%	£544,216	£611	11%	551	-14%	£2,230,736	£1,255	23%
Newcastle	Proactive Care Pathway Redesign	133.1	1.8%	662	628	406	-35%	£1,519,292	£2,117	39%	321	-49%	£5,941,729	£2,965	54%
North Tyneside	Population-Based	117.6	1.6%	499	510	540	6%				582	14%			0%
North Tyneside	Consensus Adoption	117.6	1.6%	499	491	477	-3%	£402,048	£644	12%	450	-8%	£1,677,568	£1,357	24%
North Tyneside	Proactive Care Pathway Redesign	117.6	1.6%	499	475	317	-33%	£1,181,292	£2,269	41%	256	-46%	£4,627,220	£3,325	59%
Hartlepool	Population-Based	138.0	2.0%	276	280	300	7%				323	15%			0%
Hartlepool	Consensus Adoption	138.0	2.0%	276	270	265	-2%	£214,155	£741	12%	249	-8%	£899,324	£1,576	25%
Hartlepool	Proactive Care Pathway Redesign	138.0	2.0%	276	262	171	-35%	£634,348	£2,711	43%	136	-48%	£2,522,170	£3,940	63%
Stockton-On-Tees Teaching	Population-Based	138.0	1.6%	437	452	494	9%				546	21%			0%
Stockton-On-Tees Teaching	Consensus Adoption	138.0	1.6%	437	436	438	1%	£349,469	£582	11%	424	-3%	£1,488,736	£1,261	25%
Stockton-On-Tees Teaching	Proactive Care Pathway Redesign	138.0	1.6%	437	417	284	-32%	£1,095,371	£2,144	42%	233	-44%	£4,293,509	£3,199	62%
North Lincolnshire	Population-Based	119.4	1.4%	308	320	352	10%				395	23%			0%
North Lincolnshire	Consensus Adoption	119.4	1.4%	308	309	313	1%	£250,427	£506	12%	308	0%	£1,068,417	£1,098	26%
North Lincolnshire	Proactive Care Pathway Redesign	119.4	1.4%	308	295	207	-30%	£781,160	£1,818	43%	174	-41%	£3,056,134	£2,787	66%
Nottingham City	Population-Based	152.7	1.5%	623	627	646	3%				678	8%			0%
Nottingham City	Consensus Adoption	152.7	1.5%	623	604	570	-6%	£494,639	£520	12%	519	-14%	£2,035,802	£1,077	24%
Nottingham City	Proactive Care Pathway Redesign	152.7	1.5%	623	590	375	-37%	£1,379,731	£1,822	41%	292	-51%	£5,485,558	£2,593	58%
Bassetlaw	Population-Based	117.1	1.3%	180	188	209	11%				228	21%			0%
Bassetlaw	Consensus Adoption	117.1	1.3%	180	181	185	2%	£145,835	£415	12%	177	-2%	£623,041	£901	25%
Bassetlaw	Proactive Care Pathway Redesign	117.1	1.3%	180	172	120	-30%	£479,732	£1,568	44%	100	-42%	£1,819,089	£2,262	64%
Plymouth Teaching	Population-Based	95.2	1.1%	372	382	409	7%				437	14%			0%
Plymouth Teaching	Consensus Adoption	95.2	1.1%	372	368	362	-2%	£291,758	£360	12%	336	-9%	£1,227,611	£765	25%
Plymouth Teaching	Proactive Care Pathway Redesign	95.2	1.1%	372	353	231	-35%	£907,022	£1,334	44%	184	-48%	£3,496,296	£1,897	63%
Salford	Population-Based	157.6	1.5%	541	545	567	4%				590	8%			0%
Salford	Consensus Adoption	157.6	1.5%	541	526	501	-5%	£444,979	£623	11%	454	-14%	£1,830,724	£1,287	23%
Salford	Proactive Care Pathway Redesign	157.6	1.5%	541	513	332	-35%	£1,246,704	£2,185	39%	262	-49%	£4,916,014	£3,057	54%
Stockport	Population-Based	98.8	1.2%	519	532	569	7%				605	14%			0%

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Stockport	Consensus Adoption	98.8	1.2%	519	513	503	-2%	£417,371	£465	11%	465	-9%	£1,752,586	£986	23%
Stockport	Proactive Care Pathway Redesign	98.8	1.2%	519	493	322	-35%	£1,284,210	£1,714	41%	257	-48%	£4,962,004	£2,428	58%
Portsmouth City Teaching	Population-Based	126.6	1.3%	339	347	366	5%				387	11%			0%
Portsmouth City Teaching	Consensus Adoption	126.6	1.3%	339	335	323	-3%	£284,277	£447	11%	298	-11%	£1,181,492	£935	24%
Portsmouth City Teaching	Proactive Care Pathway Redesign	126.6	1.3%	339	322	212	-34%	£847,261	£1,597	40%	170	-47%	£3,255,214	£2,260	57%
Bath and North East Somerset	Population-Based	79.1	1.0%	200	203	216	6%				230	13%			0%
Bath and North East Somerset	Consensus Adoption	79.1	1.0%	200	196	191	-3%	£161,468	£286	11%	177	-10%	£673,771	£601	23%
Bath and North East Somerset	Proactive Care Pathway Redesign	79.1	1.0%	200	190	123	-35%	£481,162	£1,034	39%	98	-49%	£1,871,746	£1,482	56%
Luton	Population-Based	136.7	0.9%	233	239	255	7%				272	14%			0%
Luton	Consensus Adoption	136.7	0.9%	233	230	225	-2%	£194,093	£320	11%	210	-9%	£812,845	£677	24%
Luton	Proactive Care Pathway Redesign	136.7	0.9%	233	221	146	-34%	£591,470	£1,164	41%	117	-47%	£2,275,965	£1,665	58%
Hammersmith and Fulham	Population-Based	103.3	1.0%	206	205	213	4%				220	7%			0%
Hammersmith and Fulham	Consensus Adoption	103.3	1.0%	206	198	188	-5%	£190,709	£352	10%	169	-14%	£779,789	£722	21%
Hammersmith and Fulham	Proactive Care Pathway Redesign	103.3	1.0%	206	195	126	-36%	£509,803	£1,217	36%	99	-49%	£2,039,732	£1,691	50%
Rotherham	Population-Based	110.9	2.6%	945	979	1,053	7%				1,133	16%			0%
Rotherham	Consensus Adoption	110.9	2.6%	945	944	930	-1%	£729,595	£911	12%	869	-8%	£3,092,097	£1,956	26%
Rotherham	Proactive Care Pathway Redesign	110.9	2.6%	945	897	584	-35%	£2,360,562	£3,449	46%	464	-48%	£9,030,150	£4,928	66%
Ashton, Leigh and Wigan	Population-Based	125.2	1.3%	561	585	643	10%				698	19%			0%
Ashton, Leigh and Wigan	Consensus Adoption	125.2	1.3%	561	564	570	1%	£453,654	£470	11%	541	-4%	£1,933,626	£1,017	25%
Ashton, Leigh and Wigan	Proactive Care Pathway Redesign	125.2	1.3%	561	535	366	-32%	£1,475,465	£1,767	43%	302	-44%	£5,628,249	£2,544	62%
Blackpool	Population-Based	131.7	2.0%	418	421	436	4%				447	6%			0%
Blackpool	Consensus Adoption	131.7	2.0%	418	406	385	-5%	£321,938	£716	11%	340	-16%	£1,328,275	£1,482	23%
Blackpool	Proactive Care Pathway Redesign	131.7	2.0%	418	395	246	-38%	£943,662	£2,613	40%	189	-52%	£3,659,871	£3,540	54%
Bolton	Population-Based	128.9	1.3%	490	503	543	8%				581	16%			0%
Bolton	Consensus Adoption	128.9	1.3%	490	484	481	-1%	£389,605	£466	11%	448	-7%	£1,642,341	£993	24%
Bolton	Proactive Care Pathway Redesign	128.9	1.3%	490	466	310	-34%	£1,209,566	£1,724	42%	249	-46%	£4,677,362	£2,455	60%
Ealing	Population-Based	79.3	0.8%	352	356	374	5%				398	12%			0%
Ealing	Consensus Adoption	79.3	0.8%	352	344	331	-4%	£309,249	£310	10%	306	-11%	£1,280,694	£647	22%
Ealing	Proactive Care Pathway Redesign	79.3	0.8%	352	334	219	-35%	£881,063	£1,086	37%	174	-48%	£3,466,319	£1,562	53%
Hounslow	Population-Based	108.7	1.2%	339	344	369	7%				403	17%			0%
Hounslow	Consensus Adoption	108.7	1.2%	339	332	327	-2%	£287,661	£393	10%	311	-6%	£1,207,750	£836	22%
Hounslow	Proactive Care Pathway Redesign	108.7	1.2%	339	322	213	-34%	£841,795	£1,398	37%	172	-47%	£3,354,968	£2,084	55%
Warrington	Population-Based	106.6	1.1%	293	305	335	10%			0%	370	21%			0%
Warrington	Consensus Adoption	106.6	1.1%	293	294	298	1%	£251,161	£404	12%	290	-1%	£1,063,630	£868	25%
Warrington	Proactive Care Pathway Redesign	106.6	1.1%	293	281	200	-29%	£775,894	£1,442	42%	169	-40%	£2,992,816	£2,156	63%
Knowsley	Population-Based	195.7	2.4%	613	621	651	5%				693	12%			0%
Knowsley	Consensus Adoption	195.7	2.4%	613	598	574	-4%	£486,591	£1,017	11%	532	-11%	£2,022,319	£2,136	24%
Knowsley	Proactive Care Pathway Redesign	195.7	2.4%	613	581	374	-36%	£1,409,633	£3,621	40%	294	-49%	£5,594,268	£5,225	58%
Oldham	Population-Based	132.4	1.4%	485	497	530	7%				567	14%			0%
Oldham	Consensus Adoption	132.4	1.4%	485	479	468	-2%	£382,982	£552	12%	437	-9%	£1,606,746	£1,170	25%
Oldham	Proactive Care Pathway Redesign	132.4	1.4%	485	461	302	-34%	£1,167,941	£2,020	43%	241	-48%	£4,532,227	£2,897	62%
Calderdale	Population-Based	128.3	1.7%	441	456	499	10%				549	20%			0%
Calderdale	Consensus Adoption	128.3	1.7%	441	439	443	1%	£350,723	£554	12%	426	-3%	£1,493,770	£1,200	25%

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PCT NAME	FORECAST	COPD SMR	COPD UTILISATION AS PROPORTION OF ALL SPELLS	HES BASELINE (2008-2009)	SPELLS 2010	SPELLS 2014	SPELL CHANGE (2010-2014)	TOTAL SAVINGS (2010-2014)	2014 SAVINGS/ POPULATION (1,000)	2014 SAVINGS/ 2008-9 SPEND	SPELLS 2020	SPELL CHANGE (2010-2020)	TOTAL SAVINGS (2010-2020)	2020 SAVINGS/ POPULATION (1,000)	2020 SAVINGS/ 2008-9 SPEND
Calderdale	Proactive Care Pathway Redesign	128.3	1.7%	441	420	286	-32%	£1,102,158	£2,053	43%	234	-44%	£4,312,035	£3,038	64%
Darlington	Population-Based	105.2	1.7%	245	251	273	9%				300	20%			0%
Darlington	Consensus Adoption	105.2	1.7%	245	241	242	0%	£193,081	£609	12%	232	-4%	£819,860	£1,314	25%
Darlington	Proactive Care Pathway Redesign	105.2	1.7%	245	233	157	-33%	£588,377	£2,233	43%	128	-45%	£2,342,625	£3,318	64%
Barnsley	Population-Based	132.1	2.4%	884	914	1,000	9%				1,104	21%			0%
Barnsley	Consensus Adoption	132.1	2.4%	884	881	885	0%	£684,491	£962	12%	854	-3%	£2,921,882	£2,089	26%
Barnsley	Proactive Care Pathway Redesign	132.1	2.4%	884	841	564	-33%	£2,184,398	£3,608	45%	457	-46%	£8,513,608	£5,369	66%
Bury	Population-Based	132.6	1.2%	320	329	353	7%				379	15%			0%
Bury	Consensus Adoption	132.6	1.2%	320	317	313	-1%	£265,666	£460	12%	294	-7%	£1,112,283	£972	25%
Bury	Proactive Care Pathway Redesign	132.6	1.2%	320	305	208	-32%	£799,310	£1,644	42%	170	-44%	£3,086,698	£2,367	60%
Swindon	Population-Based	104.4	1.0%	254	267	298	11%				340	27%			0%
Swindon	Consensus Adoption	104.4	1.0%	254	258	265	3%	£216,267	£341	11%	267	3%	£929,021	£748	25%
Swindon	Proactive Care Pathway Redesign	104.4	1.0%	254	244	175	-28%	£686,356	£1,235	41%	149	-39%	£2,675,611	£1,932	64%
Brent Teaching	Population-Based	58.6	0.8%	288	289	298	3%				310	7%			0%
Brent Teaching	Consensus Adoption	58.6	0.8%	288	279	263	-6%	£243,810	£299	10%	237	-15%	£1,003,835	£619	22%
Brent Teaching	Proactive Care Pathway Redesign	58.6	0.8%	288	272	171	-37%	£688,605	£1,054	37%	132	-51%	£2,715,921	£1,480	52%
Harrow	Population-Based	61.5	0.9%	212	219	235	7%				259	18%			0%
Harrow	Consensus Adoption	61.5	0.9%	212	211	208	-1%	£179,914	£251	11%	201	-5%	£758,124	£537	24%
Harrow	Proactive Care Pathway Redesign	61.5	0.9%	212	202	137	-32%	£539,553	£894	39%	112	-45%	£2,120,587	£1,348	59%
Camden	Population-Based	109.3	1.4%	341	347	369	6%				393	13%			0%
Camden	Consensus Adoption	109.3	1.4%	341	334	327	-2%	£316,881	£439	10%	304	-9%	£1,318,488	£920	22%
Camden	Proactive Care Pathway Redesign	109.3	1.4%	341	324	216	-34%	£915,090	£1,551	36%	174	-46%	£3,592,607	£2,223	52%
Islington	Population-Based	127.7	1.3%	318	319	327	3%				329	3%			0%
Islington	Consensus Adoption	127.7	1.3%	318	307	289	-6%	£283,739	£469	10%	250	-19%	£1,157,611	£955	20%
Islington	Proactive Care Pathway Redesign	127.7	1.3%	318	300	185	-39%	£802,271	£1,686	35%	140	-53%	£3,088,186	£2,231	47%
Croydon	Population-Based	106.8	1.0%	399	410	436	7%				473	15%			0%
Croydon	Consensus Adoption	106.8	1.0%	399	395	387	-2%	£355,646	£327	11%	367	-7%	£1,483,912	£689	22%
Croydon	Proactive Care Pathway Redesign	106.8	1.0%	399	380	259	-32%	£1,048,741	£1,140	37%	212	-44%	£4,060,476	£1,681	55%
Gateshead	Population-Based	151.6	1.7%	543	551	580	5%				607	10%			0%
Gateshead	Consensus Adoption	151.6	1.7%	543	531	513	-3%	£436,244	£720	12%	467	-12%	£1,810,588	£1,503	24%
Gateshead	Proactive Care Pathway Redesign	151.6	1.7%	543	515	335	-35%	£1,278,693	£2,592	42%	265	-48%	£4,968,356	£3,618	59%
South Tyneside	Population-Based	142.6	1.9%	437	443	465	5%				492	11%			0%
South Tyneside	Consensus Adoption	142.6	1.9%	437	427	410	-4%	£348,700	£721	12%	378	-11%	£1,446,437	£1,507	24%
South Tyneside	Proactive Care Pathway Redesign	142.6	1.9%	437	415	269	-35%	£1,008,450	£2,558	41%	214	-48%	£3,962,875	£3,658	59%
Sunderland Teaching	Population-Based	159.6	1.8%	803	820	871	6%				928	13%			0%
Sunderland Teaching	Consensus Adoption	159.6	1.8%	803	790	771	-3%	£646,008	£722	11%	716	-9%	£2,698,253	£1,522	24%
Sunderland Teaching	Proactive Care Pathway Redesign	159.6	1.8%	803	763	505	-34%	£1,922,842	£2,594	41%	406	-47%	£7,493,348	£3,712	59%
Middlesbrough	Population-Based	162.5	2.1%	469	472	499	6%				530	12%			0%
Middlesbrough	Consensus Adoption	162.5	2.1%	469	455	441	-3%	£368,925	£826	12%	407	-11%	£1,536,924	£1,736	24%
Middlesbrough	Proactive Care Pathway Redesign	162.5	2.1%	469	445	285	-36%	£1,073,019	£2,971	42%	224	-50%	£4,250,589	£4,261	60%
Southampton City	Population-Based	127.6	1.4%	427	433	454	5%				483	12%			0%
Southampton City	Consensus Adoption	127.6	1.4%	427	418	401	-4%	£339,723	£455	11%	370	-11%	£1,414,388	£956	23%
Southampton City	Proactive Care Pathway Redesign	127.6	1.4%	427	405	258	-36%	£996,774	£1,636	39%	202	-50%	£3,919,262	£2,355	56%

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Medway	Population-Based	132.9	1.3%	387	401	438	9%				479	19%			0%
Medway	Consensus Adoption	132.9	1.3%	387	387	388	0%	£317,950	£397	11%	371	-4%	£1,350,291	£854	24%
Medway	Proactive Care Pathway Redesign	132.9	1.3%	387	369	251	-32%	£1,006,414	£1,462	41%	206	-44%	£3,874,044	£2,146	61%
Kensington and Chelsea	Population-Based	61.4	1.0%	181	188	209	11%				227	21%			0%
Kensington and Chelsea	Consensus Adoption	61.4	1.0%	181	182	186	2%	£176,097	£325	11%	177	-2%	£747,469	£700	23%
Kensington and Chelsea	Proactive Care Pathway Redesign	61.4	1.0%	181	173	122	-30%	£561,280	£1,196	40%	102	-41%	£2,131,858	£1,716	58%
Westminster	Population-Based	70.7	1.0%	236	244	265	9%				290	19%			0%
Westminster	Consensus Adoption	70.7	1.0%	236	235	235	0%	£221,662	£283	10%	226	-4%	£935,279	£606	21%
Westminster	Proactive Care Pathway Redesign	70.7	1.0%	236	225	155	-31%	£676,864	£1,016	36%	128	-43%	£2,621,893	£1,497	53%
Lambeth	Population-Based	129.9	0.8%	293	294	306	4%				324	10%			0%
Lambeth	Consensus Adoption	129.9	0.8%	293	283	270	-5%	£247,254	£275	10%	249	-12%	£1,022,154	£572	21%
Lambeth	Proactive Care Pathway Redesign	129.9	0.8%	293	277	176	-37%	£690,462	£965	36%	137	-51%	£2,762,803	£1,392	51%
Southwark	Population-Based	147.0	1.4%	437	441	465	5%				498	13%			0%
Southwark	Consensus Adoption	147.0	1.4%	437	425	411	-3%	£393,434	£435	11%	385	-10%	£1,628,084	£906	22%
Southwark	Proactive Care Pathway Redesign	147.0	1.4%	437	415	273	-34%	£1,093,873	£1,506	37%	219	-47%	£4,355,190	£2,199	54%
Lewisham	Population-Based	138.7	1.0%	331	335	351	5%				377	12%			0%
Lewisham	Consensus Adoption	138.7	1.0%	331	323	310	-4%	£282,461	£338	11%	290	-10%	£1,171,898	£706	22%
Lewisham	Proactive Care Pathway Redesign	138.7	1.0%	331	314	205	-35%	£802,292	£1,178	37%	162	-48%	£3,188,340	£1,723	55%
Wandsworth	Population-Based	108.8	1.1%	351	349	357	2%				367	5%			0%
Wandsworth	Consensus Adoption	108.8	1.1%	351	336	314	-6%	£296,584	£325	10%	279	-17%	£1,211,530	£666	21%
Wandsworth	Proactive Care Pathway Redesign	108.8	1.1%	351	331	204	-38%	£797,836	£1,141	35%	155	-53%	£3,206,053	£1,583	49%
Tameside and Glossop	Population-Based	159.3	1.8%	607	623	677	9%				736	18%			0%
Tameside and Glossop	Consensus Adoption	159.3	1.8%	607	601	600	0%	£489,392	£623	12%	570	-5%	£2,069,159	£1,333	25%
Tameside and Glossop	Proactive Care Pathway Redesign	159.3	1.8%	607	578	391	-32%	£1,513,680	£2,273	43%	319	-45%	£5,879,620	£3,318	63%
Brighton and Hove City	Population-Based	101.8	1.2%	386	386	400	4%				416	8%			0%
Brighton and Hove City	Consensus Adoption	101.8	1.2%	386	372	353	-5%	£320,068	£393	11%	318	-14%	£1,314,175	£810	22%
Brighton and Hove City	Proactive Care Pathway Redesign	101.8	1.2%	386	366	232	-36%	£884,835	£1,378	38%	181	-50%	£3,505,369	£1,930	53%
South Birmingham	Population-Based	119.7	1.3%	645	650	670	3%				695	7%			0%
South Birmingham	Consensus Adoption	119.7	1.3%	645	627	591	-6%	£534,954	£490	11%	532	-15%	£2,194,729	£1,009	22%
South Birmingham	Proactive Care Pathway Redesign	119.7	1.3%	645	611	389	-36%	£1,497,903	£1,717	37%	304	-50%	£5,883,518	£2,395	52%
Shropshire County	Population-Based	81.1	1.2%	431	451	499	11%				571	27%			0%
Shropshire County	Consensus Adoption	81.1	1.2%	431	435	442	2%	£336,520	£368	11%	445	2%	£1,450,129	£810	24%
Shropshire County	Proactive Care Pathway Redesign	81.1	1.2%	431	412	285	-31%	£1,092,299	£1,363	41%	236	-43%	£4,273,233	£2,137	64%
Walsall Teaching	Population-Based	135.3	1.4%	513	523	549	5%				573	10%			0%
Walsall Teaching	Consensus Adoption	135.3	1.4%	513	504	485	-4%	£412,676	£506	12%	440	-13%	£1,709,789	£1,056	24%
Walsall Teaching	Proactive Care Pathway Redesign	135.3	1.4%	513	487	317	-35%	£1,221,241	£1,821	42%	251	-48%	£4,707,891	£2,532	58%
Richmond and Twickenham	Population-Based	75.8	0.9%	174	181	200	11%				221	22%			0%
Richmond and Twickenham	Consensus Adoption	75.8	0.9%	174	175	178	2%	£151,052	£255	11%	172	-1%	£644,171	£554	23%
Richmond and Twickenham	Proactive Care Pathway Redesign	75.8	0.9%	174	166	115	-31%	£473,411	£941	40%	95	-43%	£1,844,292	£1,406	59%
Sutton and Merton	Population-Based	82.8	1.2%	511	520	554	6%				601	15%			0%
Sutton and Merton	Consensus Adoption	82.8	1.2%	511	502	490	-2%	£438,822	£351	11%	465	-7%	£1,833,040	£741	22%
Sutton and Merton	Proactive Care Pathway Redesign	82.8	1.2%	511	486	324	-33%	£1,275,703	£1,236	37%	261	-46%	£5,027,040	£1,830	55%
North Somerset	Population-Based	75.0	0.9%	217	228	254	12%				287	26%			0%

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North Somerset	Consensus Adoption	75.0	0.9%	217	220	226	3%	£184,629	£283	11%	225	2%	£792,501	£619	24%
North Somerset	Proactive Care Pathway Redesign	75.0	0.9%	217	208	150	-28%	£594,637	£1,025	41%	128	-38%	£2,288,734	£1,574	62%
Coventry Teaching	Population-Based	125.9	1.2%	499	505	524	4%				550	9%			0%
Coventry Teaching	Consensus Adoption	125.9	1.2%	499	487	463	-5%	£407,100	£410	11%	421	-13%	£1,681,045	£851	22%
Coventry Teaching	Proactive Care Pathway Redesign	125.9	1.2%	499	473	301	-36%	£1,168,819	£1,455	38%	235	-50%	£4,578,834	£2,056	53%
Telford and Wrekin	Population-Based	95.3	1.3%	273	287	318	11%				360	25%			0%
Telford and Wrekin	Consensus Adoption	95.3	1.3%	273	277	281	2%	£213,719	£420	12%	280	1%	£922,345	£926	27%
Telford and Wrekin	Proactive Care Pathway Redesign	95.3	1.3%	273	261	180	-31%	£705,543	£1,574	46%	149	-43%	£2,744,106	£2,424	70%
Wolverhampton City	Population-Based	112.8	1.3%	410	412	429	4%				452	10%			0%
Wolverhampton City	Consensus Adoption	112.8	1.3%	410	397	379	-5%	£320,080	£420	11%	346	-13%	£1,325,352	£877	23%
Wolverhampton City	Proactive Care Pathway Redesign	112.8	1.3%	410	388	246	-37%	£912,233	£1,499	39%	191	-51%	£3,630,199	£2,135	55%
Heart Of Birmingham Teaching	Population-Based	115.3	0.8%	301	305	312	2%				323	6%			0%
Heart Of Birmingham Teaching	Consensus Adoption	115.3	0.8%	301	294	276	-6%	£249,669	£283	11%	248	-16%	£1,022,892	£583	23%
Heart Of Birmingham Teaching	Proactive Care Pathway Redesign	115.3	0.8%	301	285	182	-36%	£697,419	£992	39%	142	-50%	£2,735,214	£1,381	54%
Leeds	Population-Based	119.0	1.5%	1,506	1,532	1,628	6%				1,736	13%			0%
Leeds	Consensus Adoption	119.0	1.5%	1,506	1,477	1,439	-3%	£1,194,163	£481	11%	1,334	-10%	£4,998,303	£1,018	24%
Leeds	Proactive Care Pathway Redesign	119.0	1.5%	1,506	1,429	927	-35%	£3,573,702	£1,754	41%	733	-49%	£14,006,924	£2,511	59%
Kirklees	Population-Based	120.7	1.3%	672	691	749	8%				822	19%			0%
Kirklees	Consensus Adoption	120.7	1.3%	672	666	662	0%	£520,006	£407	11%	634	-5%	£2,209,610	£879	24%
Kirklees	Proactive Care Pathway Redesign	120.7	1.3%	672	639	423	-34%	£1,622,103	£1,510	41%	340	-47%	£6,382,832	£2,241	61%
Wakefield District	Population-Based	143.9	1.9%	927	960	1,049	9%				1,163	21%			0%
Wakefield District	Consensus Adoption	143.9	1.9%	927	926	928	0%	£722,112	£708	12%	900	-3%	£3,085,274	£1,540	25%
Wakefield District	Proactive Care Pathway Redesign	143.9	1.9%	927	882	591	-33%	£2,311,936	£2,647	43%	479	-46%	£9,017,429	£3,968	65%
Sheffield	Population-Based	104.5	1.5%	1,137	1,157	1,219	5%				1,284	11%			0%
Sheffield	Consensus Adoption	104.5	1.5%	1,137	1,115	1,076	-3%	£889,489	£517	11%	983	-12%	£3,707,360	£1,086	23%
Sheffield	Proactive Care Pathway Redesign	104.5	1.5%	1,137	1,077	690	-36%	£2,672,577	£1,889	40%	541	-50%	£10,365,685	£2,660	56%
Doncaster	Population-Based	142.7	1.7%	705	724	774	7%				827	14%			0%
Doncaster	Consensus Adoption	142.7	1.7%	705	698	684	-2%	£550,652	£599	11%	636	-9%	£2,315,440	£1,274	24%
Doncaster	Proactive Care Pathway Redesign	142.7	1.7%	705	669	438	-35%	£1,711,365	£2,216	42%	349	-48%	£6,598,689	£3,159	60%
Derbyshire County	Population-Based	95.6	1.2%	1,135	1,182	1,300	10%				1,453	23%			0%
Derbyshire County	Consensus Adoption	95.6	1.2%	1,135	1,140	1,153	1%	£904,152	£395	12%	1,132	-1%	£3,865,609	£860	25%
Derbyshire County	Proactive Care Pathway Redesign	95.6	1.2%	1,135	1,084	750	-31%	£2,885,166	£1,455	43%	622	-43%	£11,212,324	£2,205	65%
Derby City	Population-Based	98.7	1.3%	484	497	528	6%				567	14%			0%
Derby City	Consensus Adoption	98.7	1.3%	484	479	466	-3%	£376,088	£487	12%	435	-9%	£1,580,888	£1,035	26%
Derby City	Proactive Care Pathway Redesign	98.7	1.3%	484	459	298	-35%	£1,162,748	£1,792	44%	235	-49%	£4,506,290	£2,583	64%
Nottinghamshire County Teaching	Population-Based	102.3	1.1%	932	967	1,058	9%				1,174	21%			0%
Nottinghamshire County Teaching	Consensus Adoption	102.3	1.1%	932	933	939	1%	£756,358	£361	12%	915	-2%	£3,214,450	£780	26%
Nottinghamshire County Teaching	Proactive Care Pathway Redesign	102.3	1.1%	932	890	619	-31%	£2,362,747	£1,309	44%	514	-42%	£9,171,541	£1,968	66%
Lincolnshire Teaching	Population-Based	88.2	1.1%	1,042	1,089	1,202	10%				1,354	24%			0%
Lincolnshire Teaching	Consensus Adoption	88.2	1.1%	1,042	1,050	1,066	1%	£825,313	£375	12%	1,055	0%	£3,541,033	£820	26%
Lincolnshire Teaching	Proactive Care Pathway Redesign	88.2	1.1%	1,042	995	692	-30%	£2,661,416	£1,384	44%	575	-42%	£10,347,736	£2,121	67%
Redbridge	Population-Based	74.3	0.9%	254	258	269	4%				288	12%			0%
Redbridge	Consensus Adoption	74.3	0.9%	254	248	237	-4%	£205,565	£244	11%	221	-11%	£854,763	£512	22%

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Redbridge	Proactive Care Pathway Redesign	74.3	0.9%	254	241	154	-36%	£594,923	£866	38%	121	-50%	£2,356,083	£1,265	55%
Waltham Forest	Population-Based	112.4	1.0%	299	300	309	3%				325	9%			
Waltham Forest	Consensus Adoption	112.4	1.0%	299	289	272	-6%	£242,854	£342	10%	248	-14%	£1,000,506	£710	22%
Waltham Forest	Proactive Care Pathway Redesign	112.4	1.0%	299	283	177	-37%	£673,844	£1,204	37%	136	-52%	£2,701,214	£1,724	52%
County Durham	Population-Based	157.3	1.8%	1,319	1,362	1,475	8%				1,608	18%			
County Durham	Consensus Adoption	157.3	1.8%	1,319	1,313	1,308	0%	£1,068,154	£667	12%	1,250	-5%	£4,507,953	£1,426	25%
County Durham	Proactive Care Pathway Redesign	157.3	1.8%	1,319	1,258	862	-31%	£3,271,924	£2,410	43%	710	-44%	£12,704,773	£3,541	63%
Cumbria Teaching	Population-Based	98.2	1.6%	1,137	1,175	1,283	9%				1,402	19%			
Cumbria Teaching	Consensus Adoption	98.2	1.6%	1,137	1,133	1,137	0%	£894,196	£570	12%	1,084	-4%	£3,807,062	£1,233	25%
Cumbria Teaching	Proactive Care Pathway Redesign	98.2	1.6%	1,137	1,082	727	-33%	£2,841,983	£2,133	43%	591	-45%	£11,048,059	£3,120	63%
North Lancashire Teaching	Population-Based	95.1	1.8%	752	774	840	8%				914	18%			
North Lancashire Teaching	Consensus Adoption	95.1	1.8%	752	746	743	0%	£585,928	£567	12%	706	-5%	£2,484,585	£1,220	25%
North Lancashire Teaching	Proactive Care Pathway Redesign	95.1	1.8%	752	715	475	-34%	£1,845,325	£2,107	43%	383	-46%	£7,161,255	£3,081	63%
Central Lancashire	Population-Based	118.7	1.4%	878	911	990	9%				1,080	19%			
Central Lancashire	Consensus Adoption	118.7	1.4%	878	878	879	0%	£721,296	£497	12%	841	-4%	£3,050,170	£1,065	25%
Central Lancashire	Proactive Care Pathway Redesign	118.7	1.4%	878	838	580	-31%	£2,243,685	£1,799	42%	481	-43%	£8,637,947	£2,639	61%
East Lancashire Teaching	Population-Based	120.9	1.5%	763	786	848	8%				919	17%			
East Lancashire Teaching	Consensus Adoption	120.9	1.5%	763	758	751	-1%	£602,580	£499	12%	711	-6%	£2,546,146	£1,068	26%
East Lancashire Teaching	Proactive Care Pathway Redesign	120.9	1.5%	763	726	486	-33%	£1,869,922	£1,836	44%	394	-46%	£7,259,494	£2,667	64%
Sefton	Population-Based	129.3	2.0%	801	814	858	5%				898	10%			
Sefton	Consensus Adoption	129.3	2.0%	801	785	758	-3%	£627,820	£718	12%	688	-12%	£2,610,838	£1,503	24%
Sefton	Proactive Care Pathway Redesign	129.3	2.0%	801	759	486	-36%	£1,877,438	£2,628	42%	381	-50%	£7,257,248	£3,659	59%
Wirral	Population-Based	124.0	1.3%	650	660	690	5%				723	10%			
Wirral	Consensus Adoption	124.0	1.3%	650	636	610	-4%	£521,165	£529	10%	554	-13%	£2,158,678	£1,102	22%
Wirral	Proactive Care Pathway Redesign	124.0	1.3%	650	616	397	-36%	£1,526,572	£1,896	37%	313	-49%	£5,937,365	£2,655	52%
Liverpool	Population-Based	181.3	2.2%	1,589	1,591	1,633	3%				1,687	6%			
Liverpool	Consensus Adoption	181.3	2.2%	1,589	1,533	1,439	-6%	£1,265,787	£894	11%	1,287	-16%	£5,190,558	£1,841	22%
Liverpool	Proactive Care Pathway Redesign	181.3	2.2%	1,589	1,503	943	-37%	£3,513,117	£3,141	37%	727	-52%	£13,945,517	£4,371	52%
Halton and St Helens	Population-Based	155.0	1.4%	658	672	725	8%				783	17%			
Halton and St Helens	Consensus Adoption	155.0	1.4%	658	647	642	-1%	£538,259	£573	11%	607	-6%	£2,262,360	£1,221	24%
Halton and St Helens	Proactive Care Pathway Redesign	155.0	1.4%	658	627	423	-32%	£1,596,000	£2,064	40%	345	-45%	£6,314,525	£3,007	59%
Western Cheshire	Population-Based	92.0	1.2%	374	384	412	7%				439	14%			
Western Cheshire	Consensus Adoption	92.0	1.2%	374	370	364	-2%	£302,955	£410	11%	338	-9%	£1,273,755	£871	24%
Western Cheshire	Proactive Care Pathway Redesign	92.0	1.2%	374	355	234	-34%	£938,311	£1,514	41%	187	-47%	£3,620,366	£2,147	58%
Central and Eastern Cheshire	Population-Based	89.9	1.2%	701	730	803	10%				888	22%			
Central and Eastern Cheshire	Consensus Adoption	89.9	1.2%	701	704	712	1%	£567,425	£395	11%	691	-2%	£2,424,136	£857	25%
Central and Eastern Cheshire	Proactive Care Pathway Redesign	89.9	1.2%	701	669	461	-31%	£1,829,941	£1,465	43%	380	-43%	£7,044,780	£2,178	63%
Heywood, Middleton and Rochdale	Population-Based	147.4	1.5%	475	482	514	7%				555	15%			
Heywood, Middleton and Rochdale	Consensus Adoption	147.4	1.5%	475	464	455	-2%	£377,321	£580	11%	429	-8%	£1,579,950	£1,228	24%
Heywood, Middleton and Rochdale	Proactive Care Pathway Redesign	147.4	1.5%	475	452	300	-34%	£1,101,750	£2,062	41%	241	-47%	£4,381,036	£3,027	60%
Trafford	Population-Based	109.6	0.9%	255	261	277	6%				294	12%			
Trafford	Consensus Adoption	109.6	0.9%	255	252	245	-3%	£217,152	£319	11%	228	-10%	£902,861	£667	23%
Trafford	Proactive Care Pathway Redesign	109.6	0.9%	255	243	162	-33%	£639,286	£1,131	38%	132	-46%	£2,473,536	£1,611	54%

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Manchester	Population-Based	151.3	1.6%	1,199	1,199	1,236	3%				1,291	8%			
Manchester	Consensus Adoption	151.3	1.6%	1,199	1,155	1,090	-6%	£964,166	£635	10%	988	-14%	£3,961,786	£1,312	21%
Manchester	Proactive Care Pathway Redesign	151.3	1.6%	1,199	1,134	715	-37%	£2,632,911	£2,223	36%	553	-51%	£10,589,402	£3,154	51%
North Yorkshire and York	Population-Based	84.0	1.1%	1,054	1,096	1,207	10%				1,347	23%			
North Yorkshire and York	Consensus Adoption	84.0	1.1%	1,054	1,056	1,071	1%	£850,657	£342	11%	1,050	-1%	£3,634,369	£743	25%
North Yorkshire and York	Proactive Care Pathway Redesign	84.0	1.1%	1,054	1,007	699	-31%	£2,689,892	£1,252	42%	581	-42%	£10,477,539	£1,897	63%
East Riding Of Yorkshire	Population-Based	87.5	1.7%	677	709	793	12%				899	27%			
East Riding Of Yorkshire	Consensus Adoption	87.5	1.7%	677	684	704	3%	£536,826	£508	12%	702	3%	£2,319,280	£1,121	26%
East Riding Of Yorkshire	Proactive Care Pathway Redesign	87.5	1.7%	677	647	453	-30%	£1,768,564	£1,909	45%	379	-41%	£6,871,350	£2,926	69%
Hull Teaching	Population-Based	158.7	2.4%	1,031	1,039	1,101	6%				1,182	14%			
Hull Teaching	Consensus Adoption	158.7	2.4%	1,031	1,001	970	-3%	£775,242	£934	11%	905	-10%	£3,253,948	£1,983	24%
Hull Teaching	Proactive Care Pathway Redesign	158.7	2.4%	1,031	976	619	-37%	£2,290,226	£3,415	41%	481	-51%	£9,182,182	£4,978	60%
Bradford and Airedale Teaching	Population-Based	149.7	1.1%	834	850	903	6%				976	15%			
Bradford and Airedale Teaching	Consensus Adoption	149.7	1.1%	834	819	799	-2%	£680,024	£425	12%	757	-8%	£2,837,191	£897	25%
Bradford and Airedale Teaching	Proactive Care Pathway Redesign	149.7	1.1%	834	794	534	-33%	£1,966,475	£1,491	41%	434	-45%	£7,783,846	£2,197	60%
South East Essex	Population-Based	105.0	1.2%	500	516	561	9%				615	19%			
South East Essex	Consensus Adoption	105.0	1.2%	500	498	498	0%	£416,201	£392	12%	479	-4%	£1,756,972	£838	25%
South East Essex	Proactive Care Pathway Redesign	105.0	1.2%	500	477	330	-31%	£1,272,687	£1,403	42%	273	-43%	£4,928,579	£2,083	62%
Bedfordshire	Population-Based	89.1	1.3%	621	651	725	11%				816	25%			
Bedfordshire	Consensus Adoption	89.1	1.3%	621	628	644	3%	£528,885	£410	12%	639	2%	£2,269,146	£897	25%
Bedfordshire	Proactive Care Pathway Redesign	89.1	1.3%	621	595	424	-29%	£1,696,879	£1,494	42%	359	-40%	£6,561,940	£2,288	64%
East and North Hertfordshire	Population-Based	97.5	1.0%	616	639	696	9%				765	20%			
East and North Hertfordshire	Consensus Adoption	97.5	1.0%	616	616	616	0%	£505,409	£295	10%	592	-4%	£2,148,460	£637	22%
East and North Hertfordshire	Proactive Care Pathway Redesign	97.5	1.0%	616	587	395	-33%	£1,606,854	£1,092	39%	322	-45%	£6,193,056	£1,615	57%
West Hertfordshire	Population-Based	86.9	0.9%	552	567	610	7%				664	17%			
West Hertfordshire	Consensus Adoption	86.9	0.9%	552	547	540	-1%	£466,774	£271	11%	514	-6%	£1,965,444	£578	23%
West Hertfordshire	Proactive Care Pathway Redesign	86.9	0.9%	552	525	352	-33%	£1,416,247	£975	39%	285	-46%	£5,518,260	£1,440	58%
Surrey	Population-Based	71.8	1.0%	1,169	1,209	1,313	9%				1,435	19%			
Surrey	Consensus Adoption	71.8	1.0%	1,169	1,166	1,163	0%	£999,823	£290	11%	1,112	-5%	£4,230,718	£622	23%
Surrey	Proactive Care Pathway Redesign	71.8	1.0%	1,169	1,114	754	-32%	£3,115,734	£1,057	39%	616	-45%	£12,028,501	£1,556	57%
West Sussex	Population-Based	76.2	1.0%	971	1,006	1,094	9%				1,211	20%			
West Sussex	Consensus Adoption	76.2	1.0%	971	970	970	0%	£814,388	£326	11%	943	-3%	£3,447,861	£700	24%
West Sussex	Proactive Care Pathway Redesign	76.2	1.0%	971	927	640	-31%	£2,500,713	£1,168	39%	530	-43%	£9,733,560	£1,761	59%
East Sussex Downs and Weald	Population-Based	65.0	1.2%	523	541	587	9%				650	20%			
East Sussex Downs and Weald	Consensus Adoption	65.0	1.2%	523	522	521	0%	£435,037	£412	12%	508	-3%	£1,837,855	£883	25%
East Sussex Downs and Weald	Proactive Care Pathway Redesign	65.0	1.2%	523	500	348	-30%	£1,323,935	£1,462	41%	289	-42%	£5,151,228	£2,209	62%
Hastings and Rother	Population-Based	83.1	1.5%	354	366	397	8%				436	19%			
Hastings and Rother	Consensus Adoption	83.1	1.5%	354	353	351	0%	£283,951	£503	11%	339	-4%	£1,202,707	£1,081	24%
Hastings and Rother	Proactive Care Pathway Redesign	83.1	1.5%	354	337	230	-32%	£873,926	£1,824	40%	189	-44%	£3,411,721	£2,723	60%
West Kent	Population-Based	90.9	1.1%	834	869	959	10%				1,064	23%			
West Kent	Consensus Adoption	90.9	1.1%	834	838	851	2%	£708,684	£333	11%	831	-1%	£3,019,164	£720	25%
West Kent	Proactive Care Pathway Redesign	90.9	1.1%	834	798	561	-30%	£2,237,200	£1,208	41%	470	-41%	£8,616,650	£1,816	62%
Leicestershire County and Rutland	Population-Based	74.2	1.1%	818	859	958	11%				1,077	25%			

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Leicestershire County and Rutland	Consensus Adoption	74.2	1.1%	818	829	852	3%	£689,736	£322	11%	845	2%	£2,955,104	£702	25%
Leicestershire County and Rutland	Proactive Care Pathway Redesign	74.2	1.1%	818	784	566	-28%	£2,212,895	£1,169	42%	482	-39%	£8,523,133	£1,781	63%
Leicester City	Population-Based	119.1	1.2%	544	548	575	5%				627	14%			
Leicester City	Consensus Adoption	119.1	1.2%	544	528	508	-4%	£435,178	£448	11%	485	-8%	£1,807,941	£942	24%
Leicester City	Proactive Care Pathway Redesign	119.1	1.2%	544	517	341	-34%	£1,190,246	£1,534	39%	274	-47%	£4,876,038	£2,327	59%
Northamptonshire Teaching	Population-Based	89.9	1.2%	951	999	1,124	13%				1,278	28%			
Northamptonshire Teaching	Consensus Adoption	89.9	1.2%	951	964	999	4%	£786,248	£368	11%	1,001	4%	£3,401,170	£814	24%
Northamptonshire Teaching	Proactive Care Pathway Redesign	89.9	1.2%	951	911	652	-28%	£2,580,969	£1,368	41%	552	-39%	£10,015,142	£2,110	63%
Dudley	Population-Based	106.6	1.3%	496	510	548	7%				592	16%			
Dudley	Consensus Adoption	106.6	1.3%	496	492	484	-1%	£390,364	£402	12%	456	-7%	£1,646,804	£858	25%
Dudley	Proactive Care Pathway Redesign	106.6	1.3%	496	471	311	-34%	£1,214,373	£1,483	44%	249	-47%	£4,711,710	£2,146	63%
Sandwell	Population-Based	140.2	1.3%	579	585	606	4%				634	8%			
Sandwell	Consensus Adoption	140.2	1.3%	579	564	534	-5%	£450,846	£488	11%	484	-14%	£1,864,338	£1,016	24%
Sandwell	Proactive Care Pathway Redesign	140.2	1.3%	579	548	344	-37%	£1,296,305	£1,752	41%	266	-51%	£5,114,933	£2,468	58%
Birmingham East and North	Population-Based	120.8	1.5%	831	836	860	3%				894	7%			
Birmingham East and North	Consensus Adoption	120.8	1.5%	831	805	758	-6%	£667,902	£515	10%	683	-15%	£2,745,240	£1,063	21%
Birmingham East and North	Proactive Care Pathway Redesign	120.8	1.5%	831	786	494	-37%	£1,878,607	£1,818	36%	382	-51%	£7,413,963	£2,547	50%
North Staffordshire	Population-Based	108.3	1.4%	330	340	369	9%				405	19%			
North Staffordshire	Consensus Adoption	108.3	1.4%	330	328	327	0%	£261,084	£390	11%	314	-4%	£1,106,732	£838	23%
North Staffordshire	Proactive Care Pathway Redesign	108.3	1.4%	330	314	212	-32%	£813,227	£1,425	39%	173	-45%	£3,165,575	£2,112	58%
Stoke On Trent	Population-Based	143.1	1.8%	589	597	626	5%				659	10%			
Stoke On Trent	Consensus Adoption	143.1	1.8%	589	576	552	-4%	£450,447	£572	11%	503	-13%	£1,876,573	£1,201	24%
Stoke On Trent	Proactive Care Pathway Redesign	143.1	1.8%	589	558	353	-37%	£1,341,716	£2,082	42%	275	-51%	£5,256,308	£2,942	59%
South Staffordshire	Population-Based	91.3	1.0%	672	704	781	11%				877	25%			
South Staffordshire	Consensus Adoption	91.3	1.0%	672	679	693	2%	£548,489	£287	12%	686	1%	£2,351,977	£626	26%
South Staffordshire	Proactive Care Pathway Redesign	91.3	1.0%	672	643	456	-29%	£1,763,882	£1,046	43%	384	-40%	£6,813,732	£1,600	66%
Worcestershire	Population-Based	71.9	1.1%	783	816	896	10%				994	22%			
Worcestershire	Consensus Adoption	71.9	1.1%	783	787	794	1%	£635,452	£362	11%	774	-2%	£2,711,142	£786	24%
Worcestershire	Proactive Care Pathway Redesign	71.9	1.1%	783	748	517	-31%	£2,029,439	£1,332	41%	428	-43%	£7,834,039	£1,996	62%
Warwickshire	Population-Based	76.5	1.0%	641	672	742	10%				825	23%			
Warwickshire	Consensus Adoption	76.5	1.0%	641	648	659	2%	£537,505	£320	11%	644	-1%	£2,298,224	£695	24%
Warwickshire	Proactive Care Pathway Redesign	76.5	1.0%	641	613	432	-30%	£1,730,575	£1,169	41%	362	-41%	£6,643,547	£1,759	62%
Peterborough	Population-Based	90.6	1.1%	234	241	261	8%				287	19%			
Peterborough	Consensus Adoption	90.6	1.1%	234	232	231	0%	£189,483	£352	11%	222	-4%	£801,706	£756	25%
Peterborough	Proactive Care Pathway Redesign	90.6	1.1%	234	223	150	-33%	£585,187	£1,280	42%	122	-45%	£2,282,911	£1,905	62%
Cambridgeshire	Population-Based	72.6	1.1%	721	757	846	12%				961	27%			
Cambridgeshire	Consensus Adoption	72.6	1.1%	721	730	751	3%	£603,183	£319	12%	753	3%	£2,599,627	£702	25%
Cambridgeshire	Proactive Care Pathway Redesign	72.6	1.1%	721	691	493	-29%	£1,953,982	£1,171	42%	416	-40%	£7,594,678	£1,814	66%
Norfolk	Population-Based	69.8	1.2%	1,051	1,093	1,196	9%				1,326	21%			
Norfolk	Consensus Adoption	69.8	1.2%	1,051	1,054	1,060	1%	£834,636	£352	12%	1,030	-2%	£3,559,741	£762	26%
Norfolk	Proactive Care Pathway Redesign	69.8	1.2%	1,051	1,002	686	-32%	£2,665,806	£1,298	44%	564	-44%	£10,313,622	£1,945	66%
Great Yarmouth and Waveney	Population-Based	93.4	1.5%	416	432	472	9%				522	21%			
Great Yarmouth and Waveney	Consensus Adoption	93.4	1.5%	416	416	418	1%	£331,726	£491	12%	405	-3%	£1,412,719	£1,062	26%

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Great Yarmouth and Waveney	Proactive Care Pathway Redesign	93.4	1.5%	416	397	272	-31%	£1,046,556	£1,798	44%	225	-43%	£4,066,554	£2,691	67%
Suffolk	Population-Based	61.0	1.3%	831	871	972	12%				1,097	26%			
Suffolk	Consensus Adoption	61.0	1.3%	831	840	863	3%	£679,023	£364	12%	858	2%	£2,924,639	£800	26%
Suffolk	Proactive Care Pathway Redesign	61.0	1.3%	831	795	562	-29%	£2,211,641	£1,347	44%	472	-41%	£8,572,639	£2,063	67%
West Essex	Population-Based	105.6	1.1%	363	374	407	9%				443	18%			
West Essex	Consensus Adoption	105.6	1.1%	363	361	360	0%	£306,212	£345	11%	343	-5%	£1,293,577	£737	23%
West Essex	Proactive Care Pathway Redesign	105.6	1.1%	363	346	235	-32%	£950,964	£1,256	39%	192	-45%	£3,660,986	£1,837	57%
North East Essex	Population-Based	77.0	1.2%	442	460	510	11%				575	25%			
North East Essex	Consensus Adoption	77.0	1.2%	442	444	453	2%	£352,854	£348	11%	448	1%	£1,515,906	£762	25%
North East Essex	Proactive Care Pathway Redesign	77.0	1.2%	442	422	293	-31%	£1,131,063	£1,288	42%	243	-42%	£4,426,747	£1,973	65%
Mid Essex	Population-Based	74.5	0.9%	356	376	425	13%				483	29%			
Mid Essex	Consensus Adoption	74.5	0.9%	356	363	378	4%	£292,273	£253	12%	378	4%	£1,267,892	£561	26%
Mid Essex	Proactive Care Pathway Redesign	74.5	0.9%	356	341	244	-28%	£980,215	£949	45%	207	-39%	£3,765,126	£1,463	69%
South West Essex	Population-Based	113.6	1.5%	697	721	791	10%				870	21%			
South West Essex	Consensus Adoption	113.6	1.5%	697	695	700	1%	£564,846	£447	11%	674	-3%	£2,407,762	£966	23%
South West Essex	Proactive Care Pathway Redesign	113.6	1.5%	697	664	448	-32%	£1,803,519	£1,663	39%	365	-45%	£6,975,065	£2,459	58%
Eastern and Coastal Kent	Population-Based	107.2	1.2%	1,062	1,106	1,220	10%				1,348	22%			
Eastern and Coastal Kent	Consensus Adoption	107.2	1.2%	1,062	1,066	1,083	2%	£876,816	£381	12%	1,050	-2%	£3,740,366	£827	25%
Eastern and Coastal Kent	Proactive Care Pathway Redesign	107.2	1.2%	1,062	1,015	707	-30%	£2,795,324	£1,404	43%	589	-42%	£10,773,017	£2,085	64%
Hampshire	Population-Based	78.4	1.0%	1,444	1,509	1,662	10%				1,849	23%			
Hampshire	Consensus Adoption	78.4	1.0%	1,444	1,455	1,476	1%	£1,220,053	£301	11%	1,442	-1%	£5,205,673	£653	24%
Hampshire	Proactive Care Pathway Redesign	78.4	1.0%	1,444	1,380	966	-30%	£3,903,231	£1,099	41%	806	-42%	£14,985,926	£1,653	61%
Buckinghamshire	Population-Based	69.0	1.0%	522	544	598	10%				665	22%			
Buckinghamshire	Consensus Adoption	69.0	1.0%	522	524	530	1%	£436,976	£274	10%	517	-1%	£1,865,394	£594	23%
Buckinghamshire	Proactive Care Pathway Redesign	69.0	1.0%	522	498	342	-31%	£1,399,870	£1,009	38%	282	-43%	£5,400,775	£1,518	58%
Oxfordshire	Population-Based	80.3	1.0%	685	713	778	9%				866	22%			
Oxfordshire	Consensus Adoption	80.3	1.0%	685	687	689	0%	£557,678	£289	10%	672	-2%	£2,379,222	£627	22%
Oxfordshire	Proactive Care Pathway Redesign	80.3	1.0%	685	653	443	-32%	£1,770,240	£1,062	36%	363	-44%	£6,889,485	£1,608	55%
Berkshire West	Population-Based	82.9	0.9%	429	448	497	11%				557	24%			
Berkshire West	Consensus Adoption	82.9	0.9%	429	432	442	2%	£374,700	£258	11%	435	1%	£1,601,558	£561	24%
Berkshire West	Proactive Care Pathway Redesign	82.9	0.9%	429	410	290	-29%	£1,194,095	£936	40%	243	-41%	£4,602,311	£1,424	61%
Berkshire East	Population-Based	88.7	1.1%	467	483	527	9%				584	21%			
Berkshire East	Consensus Adoption	88.7	1.1%	467	466	467	0%	£398,187	£319	11%	454	-3%	£1,690,544	£689	23%
Berkshire East	Proactive Care Pathway Redesign	88.7	1.1%	467	445	303	-32%	£1,231,572	£1,160	39%	249	-44%	£4,811,787	£1,748	59%
Gloucestershire	Population-Based	82.4	1.1%	833	864	945	9%				1,052	22%			
Gloucestershire	Consensus Adoption	82.4	1.1%	833	834	838	1%	£680,289	£367	11%	819	-2%	£2,894,716	£794	24%
Gloucestershire	Proactive Care Pathway Redesign	82.4	1.1%	833	795	549	-31%	£2,115,187	£1,330	40%	455	-43%	£8,263,245	£2,017	61%
Bristol	Population-Based	113.1	1.3%	693	703	732	4%				783	11%			
Bristol	Consensus Adoption	113.1	1.3%	693	678	646	-5%	£565,225	£415	10%	603	-11%	£2,341,225	£867	21%
Bristol	Proactive Care Pathway Redesign	113.1	1.3%	693	657	426	-35%	£1,604,484	£1,449	36%	337	-49%	£6,362,844	£2,119	52%
Wiltshire	Population-Based	76.4	0.9%	479	501	555	11%				626	25%			
Wiltshire	Consensus Adoption	76.4	0.9%	479	483	493	2%	£397,238	£277	11%	490	1%	£1,703,343	£606	25%
Wiltshire	Proactive Care Pathway Redesign	76.4	0.9%	479	458	324	-29%	£1,271,027	£1,013	41%	272	-41%	£4,938,310	£1,555	63%

PCT NAME	FORECAST	COPD SMR	COPD UTILISATION AS PROPORTION OF ALL SPELLS	HES BASELINE (2008-2009)	SPELLS 2010	SPELLS 2014	SPELL CHANGE (2010-2014)	TOTAL SAVINGS (2010-2014)	2014 SAVINGS/ POPULATION (1,000)	2014 SAVINGS/ 2008-9 SPEND	SPELLS 2020	SPELL CHANGE (2010-2020)	TOTAL SAVINGS (2010-2020)	2020 SAVINGS/ POPULATION (1,000)	2020 SAVINGS/ 2008-9 SPEND
Somerset	Population-Based	76.9	1.1%	745	775	855	10%				959	24%			
Somerset	Consensus Adoption	76.9	1.1%	745	747	758	1%	£600,343	£363	11%	749	0%	£2,567,109	£790	25%
Somerset	Proactive Care Pathway Redesign	76.9	1.1%	745	712	498	-30%	£1,891,967	£1,322	41%	415	-42%	£7,401,242	£2,023	63%
Dorset	Population-Based	64.5	1.2%	651	673	727	8%				807	20%			
Dorset	Consensus Adoption	64.5	1.2%	651	649	644	-1%	£520,551	£405	11%	628	-3%	£2,203,467	£870	24%
Dorset	Proactive Care Pathway Redesign	64.5	1.2%	651	621	423	-32%	£1,598,490	£1,454	39%	347	-44%	£6,244,094	£2,207	60%
Bournemouth and Poole Teaching	Population-Based	81.8	1.3%	620	631	663	5%				701	11%			
Bournemouth and Poole Teaching	Consensus Adoption	81.8	1.3%	620	608	585	-4%	£492,078	£505	11%	537	-12%	£2,048,116	£1,060	23%
Bournemouth and Poole Teaching	Proactive Care Pathway Redesign	81.8	1.3%	620	588	377	-36%	£1,461,776	£1,830	39%	297	-50%	£5,690,895	£2,596	56%
Cornwall and Isles Of Scilly	Population-Based	92.1	1.2%	810	841	921	9%				1,022	22%			
Cornwall and Isles Of Scilly	Consensus Adoption	92.1	1.2%	810	811	817	1%	£643,805	£383	11%	797	-2%	£2,737,715	£827	24%
Cornwall and Isles Of Scilly	Proactive Care Pathway Redesign	92.1	1.2%	810	774	538	-30%	£2,018,565	£1,392	40%	448	-42%	£7,831,492	£2,094	60%
Devon	Population-Based	66.8	1.0%	975	1,012	1,107	9%				1,235	22%			
Devon	Consensus Adoption	66.8	1.0%	975	976	982	1%	£778,323	£330	12%	963	-1%	£3,312,137	£713	25%
Devon	Proactive Care Pathway Redesign	66.8	1.0%	975	931	647	-30%	£2,424,365	£1,191	43%	538	-42%	£9,458,797	£1,812	65%
Redcar and Cleveland	Population-Based	127.3	2.0%	372	383	407	6%				436	14%			
Redcar and Cleveland	Consensus Adoption	127.3	2.0%	372	370	360	-3%	£300,544	£686	12%	336	-9%	£1,260,051	£1,453	24%
Redcar and Cleveland	Proactive Care Pathway Redesign	127.3	2.0%	372	353	233	-34%	£926,696	£2,495	42%	186	-47%	£3,565,530	£3,581	60%
Isle of Wight NHS	Population-Based	85.8	1.1%	182	190	206	9%				227	19%			
Isle of Wight NHS	Consensus Adoption	85.8	1.1%	182	183	182	0%	£146,222	£330	11%	176	-4%	£621,760	£712	23%
Isle of Wight NHS	Proactive Care Pathway Redesign	85.8	1.1%	182	173	118	-32%	£469,373	£1,214	39%	97	-44%	£1,795,352	£1,800	58%
Northumberland Care Trust	Population-Based	110.8	1.6%	694	720	789	10%				878	22%			
Northumberland Care Trust	Consensus Adoption	110.8	1.6%	694	694	700	1%	£557,618	£567	12%	684	-1%	£2,374,148	£1,228	25%
Northumberland Care Trust	Proactive Care Pathway Redesign	110.8	1.6%	694	663	459	-31%	£1,742,903	£2,064	43%	381	-42%	£6,795,807	£3,117	65%
Bexley Care Trust	Population-Based	95.7	1.3%	330	338	362	7%				385	14%			
Bexley Care Trust	Consensus Adoption	95.7	1.3%	330	326	320	-2%	£266,962	£374	11%	296	-9%	£1,120,951	£792	24%
Bexley Care Trust	Proactive Care Pathway Redesign	95.7	1.3%	330	313	204	-35%	£829,728	£1,387	41%	161	-48%	£3,179,599	£1,959	58%
Torbay Care Trust	Population-Based	77.9	1.2%	241	250	270	8%				294	18%			
Torbay Care Trust	Consensus Adoption	77.9	1.2%	241	241	239	-1%	£188,449	£444	13%	228	-6%	£796,947	£951	27%
Torbay Care Trust	Proactive Care Pathway Redesign	77.9	1.2%	241	229	155	-33%	£593,524	£1,628	46%	126	-45%	£2,282,524	£2,388	68%
Solihull Care Trust	Population-Based	76.5	1.3%	313	325	350	8%				372	15%			
Solihull Care Trust	Consensus Adoption	76.5	1.3%	313	313	311	-1%	£268,596	£414	11%	288	-8%	£1,127,352	£876	24%
Solihull Care Trust	Proactive Care Pathway Redesign	76.5	1.3%	313	298	202	-32%	£848,485	£1,531	41%	165	-45%	£3,186,971	£2,126	57%
NE Lincolnshire Care Trust Plus	Population-Based	140.1	1.1%	245	252	270	7%				291	15%			
NE Lincolnshire Care Trust Plus	Consensus Adoption	140.1	1.1%	245	243	239	-2%	£192,179	£382	11%	224	-8%	£809,102	£813	24%
NE Lincolnshire Care Trust Plus	Proactive Care Pathway Redesign	140.1	1.1%	245	233	153	-34%	£598,981	£1,412	42%	122	-47%	£2,304,402	£2,031	60%

Standardised Mortality Ratios (SMR) are included as a proxy measure of clinical quality. This measure is taken directly from the NHS Information Center, Copyright © 2010. Re-used with the permission of The Health and Social Care Information Centre. All rights reserved. Baseline figures for COPD utilization, are taken from the 2008-09 HES feed (the latest full year data set to be published). Sg2 understands that trusts will have access to more up-to-date data sources and we are happy to work with you to understand how individualised data sets influence the forecast output. COPD spells are defined as all admissions coded with HRGs D39 and D40.

Total savings are calculated by multiplying a) the number of spells that the model predicts could be avoided using each consensus and proactive care pathway remodeling strategies altering the care pathway, by b) 2008/09 Admitted Patient Care Mandatory Tariffs, HRGs D39, D40, adjusted for Market Force Factors. The model assumes all COPD spells are non-elective and thus the non-elective tariff and non-elective Market Force Factor-adjusted tariff is applied to all calculations, including spells with a LOS exceeding the HRG specific non-elective long stay trim-point.

Sg2 has calculated COPD savings due to reduced secondary utilization assuming that clinical dis-investment in secondary care is transferred to, and fully supports, primary care investments required to achieve care pathway re-design.

Global Improvement Guide

Reducing Hospitalisation for COPD Through a Multidimensional Community-Based Management Programme

Improvement Imperative

Chronic obstructive pulmonary disease (COPD) is prevalent in the developed world and hospitalisation due to its acute exacerbations (AECOPD) puts a significant economic burden on health services.

Using This Guide

- The prevalence and severity of COPD increases with age and will therefore grow significantly in ageing populations.
- AECOPD frequently results in emergency care and inpatient admission: 1 in 8 emergency admissions in UK are due to AECOPD and AECOPD is the 7th most common reason for admission among Canadian men.
- Hospitalisation due to AECOPD is currently the single-largest contributor to the total direct health care costs of COPD worldwide. COPD accounts for the second-highest number of total bed days in the UK.
- At present, COPD care is primarily reactive, focusing on treating AECOPD rather than preempting the decompensation which results in AECOPD. A majority of AECOPD episodes could avoid inpatient care with improved disease management.
- Health services will fail to manage the increasing demand for COPD care under the current reactive model; the focus of care delivery must shift to proactive management.

Country	Estimated Prevalence of COPD Stage II+*	Annual Direct Cost of COPD Care	Average Cost of a Hospitalisation due to AECOPD	% of Total Direct Costs of COPD Care due to Hospitalisation
UK	12.0%	£490m[6]	£400–£1,500[6]	54.3%[6]
Australia	18.9%	AUS$900m[1]	AUS$400[1]	55.2%[1]
Canada	9.3%	CDN$467m[2]	CDN$9,953[3]	52%[4]
US	12.7%	US$6.6bn[5]	US$2,737[5]	30%[5]

*Standardised estimate from a single-site random sample of persons >40 years old. COPD diagnosed according to GOLD guidelines. *BOLD Initiative, 2007.* [1]Australian Lung Foundation, 2008; [2]Canadian Thoracic Society, 2003; [3]Mittmann N et al. 2008; [4]Wouters EF. 2003; [5]Ward MM et al. 2000; [6]NICE COPD Guidelines, 2010.

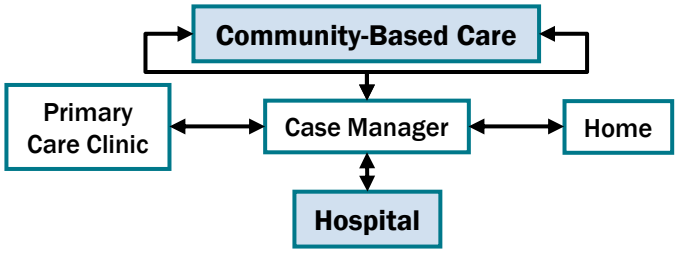
Improvement Plan

Community-based, multidimensional disease management programmes integrated with ongoing clinical care have been shown to decrease COPD secondary care utilisation across accident & emergency (A&E) attendance, hospitalisation and average inpatient length of stay (LOS).

- Pulmonary rehabilitation (PR) is currently the only widely recognised community intervention for COPD.
- Although PR improves a patient's quality of life, isolated COPD management initiatives have not proved to have significant impact on hospitalisation for AECOPD. A multi-component approach is needed.
- The number, type and intensity of community-based programme components can be tailored to local needs and should be aligned with existing and future strategies for COPD management, across the continuum of care.

Care Continuum Connections

Leading COPD programmes shift care from a primarily hospital-based setting to a primarily community-based setting, integrated within the continuum of care. A point-of-contact individual, or case manager, who may be a respiratory nurse or other suitably trained clinical professional, will be needed to coordinate this multidimensional system.



Improvement Options

Integrating Community Interventions into a Multidimensional COPD Management Programme

Component	Overview	Implementation Indicators
Develop Personalised Action Plans	**Rationale:** Written instructions empower patients to manage their own conditions, reducing the emphasis on direct clinical supervision. **Actions:** ▪ Develop an action plan for each COPD patient including a personalised decision map for AECOPD and personal lifestyle goals	**Cost:** ■ **Time:** ■ **Culture:** ■ **Impact:** ■■■
Improve Patient Education	**Rationale:** Patients who understand their condition and medications are more likely to utilise health services appropriately. **Actions:** ▪ Implement a COPD education programme which is flexible to the needs and capabilities of each patient ▪ Integrate education across the continuum of care	**Cost:** ■ **Time:** ■■ **Culture:** ■ **Impact:** ■■■
Set up Access to Health Care Advice	**Rationale:** Patients readily able to access medical advice are less likely to seek hospital emergency care in clinically unnecessary circumstances. **Actions:** ▪ Set up easy and reliable patient access to suitable case managers.	**Cost:** ■ **Time:** ■ **Culture:** ■■ **Impact:** ■■■
Leverage Technology Platforms	**Rationale:** Technology systems provide a portal for information sharing across time and space. **Actions:** ▪ Use technology to ensure seamless communication and data transfer between components of an integrated multidimensional programme.	**Cost:** ■■■ **Time:** ■■ **Culture:** ■■ **Impact:** ■■■

Indicators Key

Cost (facility, technology, staff): ■ ≤ £100K; ■■ = £100K–£500K; ■■■ = £500K+
Time: ■ = 0–6 months; ■■ = 6–18 months; ■■■ = 18+ months
Culture (organisation-wide change management): ■ = limited; ■■ = moderate; ■■■ = significant
Impact: ■ = limited; ■■ = moderate; ■■■ = significant

Options: In-Depth

Develop Personalised Action Plans

Solution	Implementation Steps	Metrics
Develop a Patient-Centred Plan Owner: Case manager, GP	▪ Outline the metrics a patient should use to monitor his or her condition and define the patient's "normal" state. Leverage available tools such as The Clinical COPD Questionnaire (CCQ). ▪ List details of whom to contact and what medication to take at each stage of symptom deterioration. ▪ Set realistic goals in areas such as activity levels, exercises, household tasks. Leverage available tools such as the COPD Assessment Test (CAT) to simply and accurately measure the impact of COPD and adjust goals appropriately. ▪ Regularly update according to clinical/personal needs, ideally as part of a regular clinical review.	▪ % patients with an action plan (P) ▪ Frequency at which action plans are updated (P) ▪ % AECOPD requiring A&E/inpatient care (O)
Integrate the Action Plan Owner: Programme Manager	▪ Share the plan with all involved in providing care, including family, carers and GPs. ▪ Align the plan with patient education programmes.	

P = process metric; O = outcome metric.

Options: In-Depth, cont'd

Improve Patient Education

Solution	Implementation Steps	Metrics
Design a Flexible Education Curriculum Owner: Clinical Advisor	▪ Provide teaching to all patients on core topics such as the pathophysiology of COPD, use of medications, lifestyle options, smoking cessation, exacerbation management. ▪ For capable patients, consider instruction on the self-medication of corticosteroids and antibiotics. ▪ Successful education programmes range from weekly sessions over a period of months to just a few hours of education prior to discharge.	▪ % patients enrolled in education (P) ▪ Increase in patient knowledge over time (eg, % patients able to use their inhalers correctly) (O) ▪ % AECOPD requiring A&E/inpatient care (O)
Integrate Education into All Aspects of Care Owner: Programme Manager	▪ Consider running patient education parallel to the teaching of exercises and fitness techniques used in PR. ▪ Incorporate patient action plans into the curriculum. ▪ Reinforce lessons learned through ongoing support from case managers and voluntary organisations, such as smoking cessation groups and the British Lung Foundation.	

Set up Access to Health Care Advice

Solution	Implementation Steps	Metrics
Aim for Continuous Patient Access Owner: Programme Manager	▪ Provide access to case managers, preferably 24/7. ▪ If continuous access proves impossible, ensure patients are well-informed of whom to contact/where to go when case managers are unavailable to reduce inappropriate burden on emergency services.	▪ % AECOPD requiring A&E/inpatient care (O)
Create a Supportive Environment Owner: Case Manager	▪ Ensure the patient is aware of the access service and its purpose. Encourage regular use to engender a guilt-free environment in which patients are comfortable asking for health advice. ▪ Foster relationships between patients and case managers through regular phone calls and/or patient visits.	▪ % and frequency of patients contacting case managers (P)

Leverage Technology Platforms

Solution	Implementation Steps	Metrics
Enable Communication Throughout the Programme Owner: Programme Manager	▪ Identify the essential lines of communication between the programme elements (eg, patient to case manager, case manager to discharge team, GP to education team). ▪ Set up reliable communication along these lines, via convenient means (eg, phone, pager, email). ▪ Consider remote patient monitoring, eg, online peak flow reports, home pulse oximetry and video-conferencing from the patient's home. Learn from forward -thinking organisations such as NHS South East Essex who have pilots in this area.	▪ % health professionals and patients utilising the communication systems (P)
Ensure timely access to accurate patient records Owner: Programme Manager	▪ Assess the viability (speed, capacity, location, reliability) of medical record systems and improve as necessary. ▪ Ideally make records universally available via a web-based platform.	▪ Frequency of instances appropriate information is not available (P)

P = process metric; O = outcome metric.

Operational Considerations

- To gain maximum impact from a COPD disease management programme, all of the improvement options should be included, though the emphasis given to each can vary depending on local requirements and facilities.
- Regardless of the specifics of programme design, it is imperative that the complete package is fully integrated throughout the continuum of COPD patient care.
- Given their foundational role, suitable case managers should be identified early in designing the programme.
- Communication among and commitment from all parties involved in the programme are crucial.
- Patient engagement in and understanding of the system are vital for success.
- Involvement of the voluntary sector in aspects of the long-term management of COPD, for example smoking cessation guidance or exercise programmes, will help sustain a community-based programme.
- Ongoing evaluation is needed to successfully sustain a COPD programme. Overall outcome metrics include annual COPD patient attendances at A&E and hospital admissions, average LOS for inpatient COPD care and the per patient annual number of days spent in a hospital bed, as opposed to at home. A well thought-through and appropriately implemented multidimensional community-based COPD management programme should lead to a reduction in all of these metrics.

Management Considerations

- A comprehensive, integrated COPD management programme is needed now, to prepare for the increasing burden of COPD on the health service. No single provider can implement such a programme; collaboration between acute care, primary care, community care and voluntary organisations is necessary.
- Development of clinical networks, as supported by NHS Improvement, should become a focus if it is not already. Continuous leverage of such networks must remain part of ongoing and future commissioning strategies.
- A potential increase in COPD inpatient care should be anticipated in the short-term due to:
  - Increased awareness of COPD in the population, leading to an increase in diagnoses
  - Increased patient understanding of the need to seek emergency care when necessary
- In the long-term, implementation of a COPD management programme will improve patient management of AECOPD, decreasing inpatient admissions.
- To optimally reduce hospital admissions due to AECOPD, COPD patients should receive annual prophylactic influenza vaccinations, to reduce the risk of decompensation following influenza infection.
- Future plans should continue to allocate resources to COPD prevention schemes, such as smoking cessation programmes and lifestyle advice for at-risk patients, to minimise the future burden of COPD.

Resources

External Resources

- Improving and Integrating Respiratory Services in the NHS
  www. Impressrep.com
- National Chronic Obstructive Pulmonary Disease Audit
  www.rcplondon.ac.uk/copd
- Burden of Lung Disease Initiative. www.boldstudy.org.
- Global Initiative for Chronic Obstructive Lung Disease. www.goldcopd.com.

All Web sites accessed August 2010.

Related Sg2 Resources

- Sg2 Global Practice Summary: Holistic COPD Patient Management Service Reduces Hospital Admissions and Shortens LOS, August 2010.
- Sg2 Global Practice Summary: Implementation of a COPD Self-management Programme Reduces Hospital Utilisation, Improves Patient Care, August 2010.
- Sg2 Case Study: Integrated Model Aims to Create Seamless Care for COPD and Asthma Patients , July 2009.

Sources: Bourbeau J. *Semin Respir Crit Care Med* 2010;31(3):313–320; Jaana M et al. *Am J Manag Care* 2009;15(5):313–320; Adams SG et al. *Arch Intern Med* 2007;167(6):551–561; Murray CJ and Lopez AD. *Lancet* 1997;349(9064):1498–1504; Littlejohns P et al. *Thorax* 1991; 46(8):559–564; Bourbeau J et al. *Chest* 2006;130(6):1704–1711; Casas A et al. *Eur Respir J* 2006;28(1):123–130; Garcia-Aymerich J et al. *Respir Med* 2007;101(7):1462–1469; Bourbeau J et al. *Arch Intern Med* 2003;163(5):585–591; O'Donnell DE et al. *Can Respir J* 2003; 10(Suppl A):11A–65A; Access Economics Pty Limited for the Australian Lung Foundation. *Economic Impact of COPD and Cost Effective Solutions.* 2008; Mittmann N et al. *Respir Med* 2008;102(3):413–421; Ward MM et al. *Respir Med* 2000;94(11):1123–1129; UK Department of Health, *Consultation on a Strategy for Services for Chronic Obstructive Pulmonary Disease (COPD) in England,* February 2010; Wouters EF. *Respir Med* 2003;97(Suppl C):S3–S14; National Institute for Health and Clinical Excellence (NICE) COPD Guidelines, 2010.

Global Practice Summaries
Bringing You Good Ideas from Around the World

St Helens and Knowsley Teaching Hospitals NHS Trust—Whiston, UK
NHS Knowsley—Knowsley, UK

Holistic COPD patient management service reduces hospital admissions and shortens length of stay

Due to high chronic obstructive pulmonary disease (COPD) prevalence rates and emergency admissions to the local acute provider, improving COPD management has long been a priority in the Knowsley health economy. Recently, a holistic COPD management programme has proved successful in identifying patients early, reducing secondary care admissions and length of stay (LOS) for admitted patients, and improving the patient's experience of care and overall care quality. Success, in its simplest form, can be described as the integration of several key services around a patient centered approach.

Knowsley Borough Snapshot

- Population of 151,300
- Levels of smoking in Knowsley are significantly above national levels; 32.6% of people in Knowsley are current smokers, with national levels currently at 24%.
- The East of England Public Health Observatory predicts the expected COPD prevalence in Knowsley to be 4.6% of the PCT population (7,079 patients). GP registers only capture 3.2% (5,053 patients).
- In 2007–2008, hospital admission rates for COPD in Knowsley were 122% higher than nationally and 78% higher than regionally.

Improvement Initiative

In March 2008, NHS Knowsley commissioned a COPD patient management service to St Helens and Knowsley Teaching Hospitals NHS Trust (STHK). This consultant-led multidisciplinary programme has close ties with primary and secondary care providers and offers patients rapid access to diagnostic and exacerbation management services.

Programme Components

- **Consultant-led, community-based team for intermediate services.** This team staffs three pulmonary rehabilitation centres and a consultant-led COPD clinic held at various community leisure and primary care centres throughout the borough. Pulmonary rehabilitation – a multicomponent, multidisciplinary intervention incorporating physical training, disease education, and nutritional, psychological and behavioural therapy – is provided to optimise a patient's physical and social wellbeing and improve quality of life. The community-based COPD clinics offer patients access to specialist assessment and diagnostic services and care at convenient locations.
- **A rapid response service.** A 24/7 call number to a team of 11 specialist nurses facilitates home management of exacerbations. Patients are encouraged to contact the service once symptoms begin to deteriorate such that interventions can be initiated as soon as possible. A condition assessment and review of the patient's history result in a trifurcation of care management:
  1. Stay at home with an altered care regimen
  2. Wait for a home visit evaluation
  3. Be admitted to the hospital (Patients suffering serious exacerbations are referred directly to STHK's COPD clinic, thus bypassing possible delays in the emergency department and medical admissions unit.)
- **An early supported discharge (ESD).** This scheme for patients admitted to STHK, reduces the time spent in hospital. The consultant-led multi-disciplinary respiratory team based at STHK, in collaboration with the community care team of nurses and support staff, assesses each admitted patient with COPD for ESD appropriateness and arranges an individualized care plan incorporating specialist education, advice and support. Arrangements for the loan of equipment may also be made. Follow-up is provided through home visits by the community nursing team.

September 2010

Global Practice Summaries

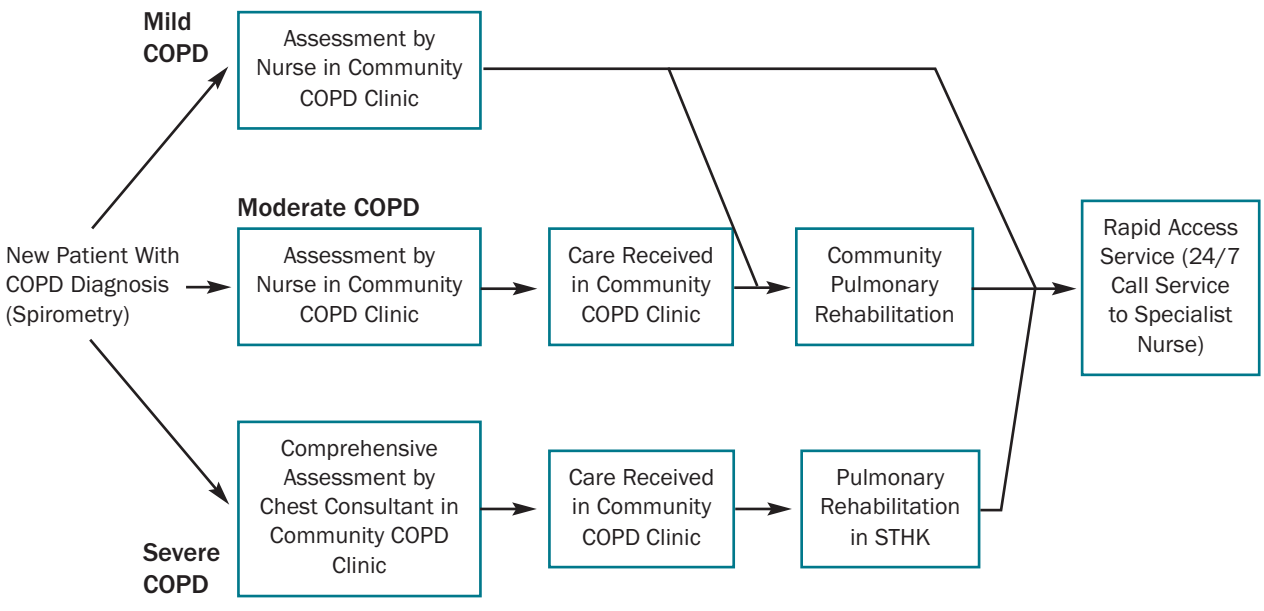
St Helens and Knowsley Teaching Hospitals NHS Trust—Whiston, UK

- **Specialist assessment access.** To tackle the difficulties in diagnosing COPD and accurately determining disease severity, numerous community-based diagnostic clinics were set up. Patients suspected of having COPD can be referred for an assessment either by local GPs or secondary care clinicians. COPD is confirmed through the combination of spirometry testing by an experienced lung function technician and a comprehensive health assessment by a member of the COPD team. Patients with a confirmed diagnosis are entered into the programme, undergo oxygen requirement assessments and have their inhaler regime optimised. Direct referrals may also be made to other members of the team as required (eg, smoking cessation counsellors, dietician, psychologist). To encourage referrals to the service, NHS Knowsley established an incentive scheme to reward GPs when a referral results in a confirmed diagnosis.
- **Condition severity tailoring.** The programme's innovative approach involves matching the intensity of care provision to a patient's condition severity – an effective and efficient way of managing patients with chronic diseases. Services are designed to provide care near to or at a patient's place of residence whenever possible. New patients suspected of having COPD undergo spirometry testing to assess the level of airflow obstruction according to the forced expiratory volume of air in 1 second (FEV1) as a percentage of the predicted value. Patients are subsequently stratified into 1 of 3 condition severity states: mild (FEV1 = 50%-80% predicted), moderate (FEV1 = 30%-49% predicted) or severe (FEV1 <30% predicted).

  Subsequent care is provided accordingly:

  - Patients with a mild to moderate diagnosis are managed in the community by a specialist nurse–led multidisciplinary team. Responsibilities include:
    - Assessing the patient (need for oxygen, aids for daily living, inhaler therapies)
    - Managing the patient (noninvasive ventilation, pulmonary rehabilitation, hospital-at-home, managing anxiety and depression)
    - Enforcing self-management strategies
  - Patients with a severe diagnosis are managed through a more resource-intensive care pathway. These patients are also managed in the community COPD clinic but undergo a more comprehensive health assessment by a respiratory consultant and a multidisciplinary team. Investigations such as chest radiographs, full blood count, pulse oximetry, electrocardiography (ECG) analysis and sputum culture are ordered if deemed necessary.
- **COPD patient register.** A COPD patient register, accessible at various locations, is kept and managed by the team. This facilitates the tracking and management of individuals as knowledge of a patient's history upon presentation enhances the ability for early decision making, allows for effective monitoring of a patient's condition and their various comorbidities, and minimises work duplication.

New Patient Stratification Process



Global Practice Summaries

St Helens and Knowsley Teaching Hospitals NHS Trust—Whiston, UK

Key Outcomes

A programme audit comparing utilisation data for STHK between 2006 (pre-implementation) and 2008 (postimplementation) show benefits to both patient and the health service, in terms of:

- **Patient identification:** increasing rate of patients registered as having COPD, which highlights the programme's success in the early identification of sufferers.
- **Average LOS:** Reduction in LOS from 7.7 (± 0.9) to 5.9 days (± 1.3), a reduction of 23% patients.
- **Hospital admission:** Reduction in COPD and bronchitis admissions from 60 (± 9) admissions per month in 2006 to 47 (± 6) in 2008, a reduction of 22%.
- **Savings:** savings to the Primary Care Trust of approximately £360,000 per year through a reduced number of admissions[1], and savings to STHK of around £270,000 from a reduction in LOS for admitted patients.[2]

[1]Based on the average emergency tariff for COPD (2008-2009 HRG Tariff, Department of Health), market force factor adjusted for NHS Knowsley.
[2]Assuming a hospital stay costs £300 per day.

Postimplementation Considerations

Following full implementation, there were noted variations from an ideal state – many of which can be addressed with ongoing program modification.

- **Short-stay admissions:** STHK saw an increase in short-stay admissions for COPD following full programme implementation. The increase was likely due to a combination of factors: an increased awareness by better-informed patients of the exacerbation of their condition, leading them to go to the hospital more frequently before the community programme was in full effect; the lack of financial incentives to prevent 30-day readmissions; and the absence of specification in the contract of where the patient evaluation would take place, which could have led to increased short-stay hospital utilisation.
- **Evening ambulance utilistion:** The service also receives a surge of calls in the morning, suggesting that patients are not aware it is operational 24 hours a day. Patients with exacerbations at night are still utilising the ambulance service.
- **Pulmonary rehabilitation:** despite expanding the capacity for pulmonary rehabilitation, few patients enrolled in the programme.

Transferrable Learnings

- Provide patients with detailed information on the service's scope, purpose and function in a concise and straightforward format.
- Form a project implementation board with representation from all relevant stakeholder groups.
- Define and monitor clinically relevant performance and outcome indicators to ensure effective programme implementation and operations.
- Incentivise programme managers on the achievement of previously agreed upon goals/milestones.
- Allocate full-time personnel from the commissioner organisation to oversee implementation and ensure the service is set up correctly.
- Ensure all clinical stakeholders are fully informed throughout the scoping and implementation process to establish buy-in at an early stage.

Sources: NHS Knowsley, Health & Care in Knowsley: Public Health Annual Report, 2006; NICE Clinical Guideline CG12: Chronic Obstructive Pulmonary Disease, February 2004; STHK. Respiratory medicine. www.sthk.nhs.uk/pages/Departments.aspx?iPageId=811. Accessed 04 October 2010; Interview with Dr Susan Church, Respiratory Consultant, STHK, 21 January 2009; Interview with Dianne Johnson, Assistant Director of Commissioning, NHS Knowsley, 16 June 2010; Eastern Region Public Health Observatory. Modelled estimates of prevalence of COPD for PCTs in England, November 2008; The NHS Information Centre. Hospital Episode Statistics, 2007/2008.

Global Practice Summaries
Bringing You Good Ideas from Around the World

McGill University Health Center, Québec, Canada

COPD self-management programme reduces hospital utilisation and improves patient care

Over the past decade, a patient-oriented chronic obstructive pulmonary disease (COPD) management programme has been developed and implemented in the Canadian province of Québec. The programme aims to maximise COPD patient autonomy, enabling individuals to better manage their disease exacerbations, optimise their quality of life and avoid regular periods of hospital-based care. This is achieved under the guidance and support of health professionals based at McGill University. Clinical trials have demonstrated that the system has significantly reduced hospital admissions and accident and emergency (A&E) attendances by COPD patients, and is of overall economic benefit to the Québec government.

Québec Snapshot

- Population is 7.8 million (2009).
- Five percent of those >40 years are diagnosed with COPD, a further 13% are predicted to have undiagnosed COPD (2007).
- Smoking prevalence is 25.3% (2008).

Improvement Initiative

During the 1990s, researchers at the Montréal Chest Institute of the McGill University Health Centre began developing a structured disease management programme for COPD patients in response to:

1. A lack of support for clinicians in educating patients about COPD self-management
2. The high yet preventable burden of COPD on the hospital service due to poorly managed disease exacerbations

Research for the programme drew from scientific literature, expert opinions, theoretical social and clinical models and patient focus groups. The final programme, which is still evolving, comprises the *Living Well With COPD* educational material (first published in 1998) with a wrapper of supervision, guidance and encouragement from health care professionals.

Programme Components

- **Case manager support.** The programme in Québec is overseen at the patient-level by case managers: respiratory nurses or physiotherapists who have been fully trained in self-management strategies for COPD patients. Each case manager is responsible for a cohort of patients, for whom they provide both initial educational training and ongoing support. The ongoing relationship includes regular phone calls and direct access to the case manager via a dedicated phone line.
- ***Living Well With COPD* educational material.** 7 teaching modules, each with a separate patient booklet. Education is provided over 4-8 sessions, either individually or as a group. Case managers are given full training on programme content and teaching techniques plus educational aids such as flip chart posters.
- **Personal action plan.** Incorporated into the educational material is the development of a patient action plan for use during symptom deterioration. The plan is personalised and outlines the patient's baseline state and actions or contact details for advice at each stage of physical decline. When appropriate, the plan includes instructions for the use of corticosteroid/antibiotic prescriptions.
- **Encouragement for healthy living.** Patients on the *Living Well with COPD* programme are educated about the importance of a healthy lifestyle in controlling their disease. This message is reinforced through additional activities such as a personal exercise plan and access to smoking cessation guidance.
- **Integration across clinical pathways.** Emphasis is placed on the importance of integrating self-management support with ongoing clinical activities in primary and secondary care, such as pulmonary rehabilitation.

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Global Practice Summaries

McGill University Health Centre, Québec, Canada

Living Well With COPD Educational Modules

Keeping a healthy and fulfilling lifestyle
- Importance of healthy living in managing COPD
- Diet, exercise, smoking, medication compliance

Preventing your symptoms and taking your medications
- Pathophysiology and triggers of COPD
- Trigger avoidance
- COPD medications

Managing your breathing and saving your energy
- Why COPD results in shortness of breath
- Breathing exercises

Integrating a plan of action into your life
- Understanding an action plan and its importance
- Advice on development and utilisation

Long-term home oxygen therapy
- Why oxygen therapy may be necessary
- Practical advice on living with oxygen therapy

Managing stress and anxiety
- Identification of personal triggers of stress
- Relaxation techniques, advice for stress management

Integrating an exercise programme into your life
- Benefits of exercise
- Types of exercise and how to include exercise in daily life

Key Outcomes

A 1998 multicentre clinical trial, comparing self-management programme patients with patients under normal clinical care, reported significant benefits. Patients on the programme:

- **Patient quality of life:** better managed the social, emotional and psychological impacts of COPD than control patients†.
- **Emergency care:** attended A&E less frequently for acute exacerbations than control patients**.**
- **Hospital admission:** had significantly fewer hospital admissions for acute exacerbations than control patients.
- **Cost of care:** had significantly lower costs of care than for control patients, driven by an efficient case manager to patient ratio of 1:70 and a reduction in hospital encounters.

Programme Outcomes and Cost Savings

Metric	Change due to COPD Programme†	p-value
A&E Attendances	–41%	0.02
Inpatient Admissions	–40%	0.01
Cost‡	–2,428 CDN$	0.02

n = 191 moderate/severe COPD patients.
*Effect of intervention exceeded minimum clinically significant change of 4 SGRQ units.
†Difference between control and intervention patients after 1 year.
‡Total annual cost of COPD care per patient.

In 2001, the *Living Well With COPD* education programme and associated case manager support was fully endorsed by the Health Ministry of Québec and is now available to all patients.

Ongoing developments

At present the COPD management programme in Québec operates out of secondary care; recruiting patients via hospital admission and focusing on moderate/severe COPD.

The programme is now being adapted for use in primary care, where the target patient will be early-disease COPD. The intention is to develop a completely integrated system whereby a patient can be seamlessly transferred between primary and secondary care as their disease develops. The patient will also be introduced to modules of the education programme and services such as pulmonary rehabilitation, as they become relevant. Case manager support will be vital throughout.

It is hoped that, over time, a self-management system in primary care will significantly improve the quality of life of patients with COPD, by teaching patients early-on how to help themselves and slowing the rate of physical decline. This may also further reduce pressure on hospital facilities.

Global Practice Summaries

McGill University Health Centre, Québec, Canada

Transferrable Learnings

- Enabling COPD patients to manage their condition involves both patient education and ongoing support and encouragement from the health care community.
- Integration of a disease management programme with existing primary and secondary care services is vital in providing a complete care package for COPD patients

Sources: Databank of Official Statistics on Québec. www.bdso.gouv.qc.ca; Bourbeau J et al. *Arch Intern Med* 2003;163(5):585–591; Bourbeau J et al. *Chest* 2006;130(6):1704–1711; Bourbeau J. *Semin Respir Crit Care Med* 2010;31(3):313–320; Interview with Dr Jean Bourbeau, Director, COPD Clinic and Pulmonary Rehabilitation Programme, Montréal Chest Institute, McGill University Health Centre, Montréal, Québec, Canada on 4th October 2010; Living Well With COPD. www.livingwellwithcopd.com (password: copd); The Canadian Lung Association. *COPD and Smoking in Canada*. 2007.

Case Study

Integrated Care Model Aims to Create Seamless Care for COPD and Asthma Patients

Client

A primary care trust (PCT) in the North West of England responsible for the health of 220,000 people.

Client Background and Challenge

The client was formulating a PCT-wide strategic plan for respiratory diseases to respond to the large local disease burden and high emergency admission rates to its local acute provider. Sg2 conducted a comprehensive health needs assessment and developed high-level service specifications for an integrated care delivery model that aimed to create seamless patient care across the entire care continuum. The team quantified the scale of disease burden, identifying gaps within the current care environment from disease prevention to rehabilitation and recommending a customised and cost-effective service provision model to manage these patients effectively.

> "As part of our continuing work to build on our understanding of the health needs of our population with asthma and COPD, we were able to draw on Sg2's independent expertise to help explore our local data intelligence in more detail. Sg2 supported us to strengthen our knowledge of the future challenges that we face within a rapidly changing health care environment and the team reflected our energy and commitment to driving forward the commissioning of first-class health services for local patients with asthma and COPD."
>
> **PCT's Public Health Director**

Sg2 Approach

Sg2 examined the care continuum through quantitative analyses of primary and secondary care utilisation data, extensive stakeholder, patient and clinician interviews (both primary and secondary care), and a close collaboration with the PCT's public health, clinical governance and information teams. This enabled Sg2 to develop a comprehensive understanding of the current care organisation and interaction patterns within and between providers, and to make recommendations for the organisation and functions of a future model of care. The engagement addressed the following:

- Estimated the true prevalence of disease within the PCT population and identified 51% of COPD sufferers and 34% of asthma suffers currently not on general practitioner (GP) disease registers.
- Assessed the clinical and financial impact and cost-effectiveness of an expanded influenza immunization scheme to prevent secondary infection, triggering further exacerbations.
- Analysed 4 data sets (GP records, admitted patient care, accident and emergency, and outpatient data sets) to understand care practice patterns for specific patient groups across the continuum.
- Identified key gaps within the current care pathways, including a lack of community consultant leadership and weak linkages between secondary and primary care coordination.
- Provided recommendations for the organisation and functions of a future care delivery model to address the gaps in the current care pathway and ensure that the deployed resource intensity matched a patient's condition acuity.
- Provided specifications for a universally accessible patient register across the entire PCT.
- Forecasted the new care model to reduce inpatient COPD utilisation by 55% and inpatient asthma utilisation by 26% over a 10-year period, as compared to population-based projections.
- Provided key process indicators (ie, self care plan targets, smoking cessation counseling discharge targets, and outreach event targets) and key outcome indicators (ie, spell volume reduction targets, readmission reduction targets, urgent call reduction targets, and patient satisfaction targets) based on realistically achievable thresholds drawn from the forecast.
- Conducted a net present value analysis over 10 years demonstrating returns of nearly £1 million related to COPD pathway redesign, and over £3 million related to asthma pathway redesign, while considering initial investment requirements in primary and secondary care and prevention schemes.
- Provided a realistic implementation timeline for the database and future care delivery model.

Measurable Results

Sg2's methodology was validated by expert-led discussions and had immediate resonance with local clinicians and managers. The PCT incorporated findings from Sg2's analysis to create a PCT-wide strategic plan for respiratory diseases.

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