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Aneurin Bevan
University Health Board



Exploring allocative value at Aneurin Bevan University Health Board

A CASE STUDY

Moving resource to where it matters in the care of people living with chronic obstructive pulmonary disease



© Value Based Care Team
Aneurin Bevan University Health Board

Dr Sally Lewis

Assistant Medical Director, Value Based Care

Mrs Jackie Reynolds

Respiratory Pharmacist

CONTENT

SITUATION	5
.....	
ISSUES	8
.....	
SOLUTION	10
.....	
INTERVENTIONS	12
.....	
RESULTS	13
.....	
DISCUSSION	17
REFERENCES	
.....	
1. SIGN /BTS ASTHMA/COPD GUIDELINES	
2. MUIR GRAY, BETTER VALUE HEALTHCARE	
3. PORTER AND TEISBERG, REDEFINING HEALTHCARE	
4. WELSH ANALYTICAL PRESCRIBING SUPPORT UNIT	
5. NATIONAL REVIEW OF ASTHMA DEATHS	
6. BRITISH THORACIC SOCIETY STATEMENT ON PULMONARY REHABILITATION DR. M D L MORGAN, VOLUME 56, ISSUE 11.	

EXECUTIVE SUMMARY

Achieving the best possible outcomes for people living with chronic disease is our common aim in healthcare. However, cost pressures in the system can lead to underinvestment in high value interventions i.e. those interventions which produce the best outcomes relative to cost.

Giving clinicians and patients the power to influence investment in high value care incentivises wide participation to disinvest in low value care. This case study illustrates the success of such an approach in the management of a population of patients with chronic obstructive pulmonary disease in South East Wales. The collaborative approach to reducing costs relating to low value prescribing enabled significant onward investment in pulmonary rehabilitation, as well as other quality improvements in respiratory care.

INTRODUCING

Traditionally in the NHS cost and efficiency programmes have tended to be divorced from quality improvement and patient safety initiatives. Value-based healthcare demands that we consider healthcare outcomes and costs together, constantly seeking to improve through reducing unwarranted variation and allocating resource where it has the maximum benefit for patients.

This case study demonstrates how this approach has been successfully utilised for a programme of respiratory care in South Wales.

Crucially the implementation of a value-based approach informs resource allocation and service design across the whole system – in this case for a population with chronic obstructive pulmonary disease (COPD) and asthma. This is important because many high value interventions are upstream preventative measures and may historically have been neglected in favour of investing to meet immediate targets.

This is because we have tended to look at efficiency and effectiveness of individual services or interventions rather than a complete package of care for a group with a particular condition. This disconnected approach means that any savings made from cost improvement programmes are made to contribute to the overall financial position and we repeatedly miss the opportunity to reinvest in high value care i.e. care that improves patient outcomes and reduces costs in the longer term.

Dr Sally Lewis & Mrs Jackie Reynolds
Value Based Care

KEY LEARNING POINT - 1

Value = Outcomes / Cost

Across the whole system of care

KEY LEARNING POINT - 2

“In order to increase ‘allocative value’ it is necessary to transfer investment from budgets where there is low value or overuse, to budgets where there is evidence of higher value or underuse.”

- Prof Sir Muir Gray,
Better Value Healthcare

A close-up photograph of a gloved hand holding a clear plastic graduated cylinder. The cylinder has blue markings and numbers ranging from 70 to 150 ml. The background is a blurred laboratory environment with various pieces of equipment. The word 'CONTEXT' is overlaid in large, light blue, sans-serif capital letters, with a horizontal line above it.

CONTEXT

The Aneurin Bevan University Health Board is an integrated health board serving a population of circa 600,000 in South East Wales with a mixture of urban, rural and ex-mining communities.

> | SITUATION

In 2014/15 £17.3 million was spent on respiratory drugs in Gwent of which £16 million was inhaled therapy for asthma and COPD. Unfortunately we are not currently able to distinguish prescribing related to asthma from prescribing related to COPD. Prevalence rates of asthma and COPD are in line with the Welsh average as shown in table 1.

Table 1. Respiratory disease prevalence, proportion of people who smoke and deprivation 2013 (percentage of population) ⁵⁻¹¹

	ABMU	ANEURIN BEVAN	BCU	CARDIFF & VALE	CWM TAF	HYWEL DDA	POWYS	WALES	ENGLAND	NE ENGLAND
ASTHMA (%)	7.4	6.9	7.1	6.6	6.5	6.9	6.8	6.9	5.9	6.3
COPD (%)	2.1	2.1	2.5	1.5	2.7	2.1	2.2	2.2	1.8	2.3
ADULTS SMOKING DAILY OR OCCASSIONALLY (%)	23	24	23	22	27	23	23	25	20	21
% IN MOST DEPRIVED 5TH	26.7	24.1	12.7	23.5	35.5	8.1	1.7	20	20.3	32.4

Spend on Inhaled Corticosteroids accounts for 65% of our respiratory prescribing costs with inhaled corticosteroid/long acting beta agonists (ICS/LABA) combinations forming the majority of prescriptions. Approximately 45% of our ICS items are prescribed as high strength products (ICS > 1000mcg beclometasone dipropionate BDP daily).

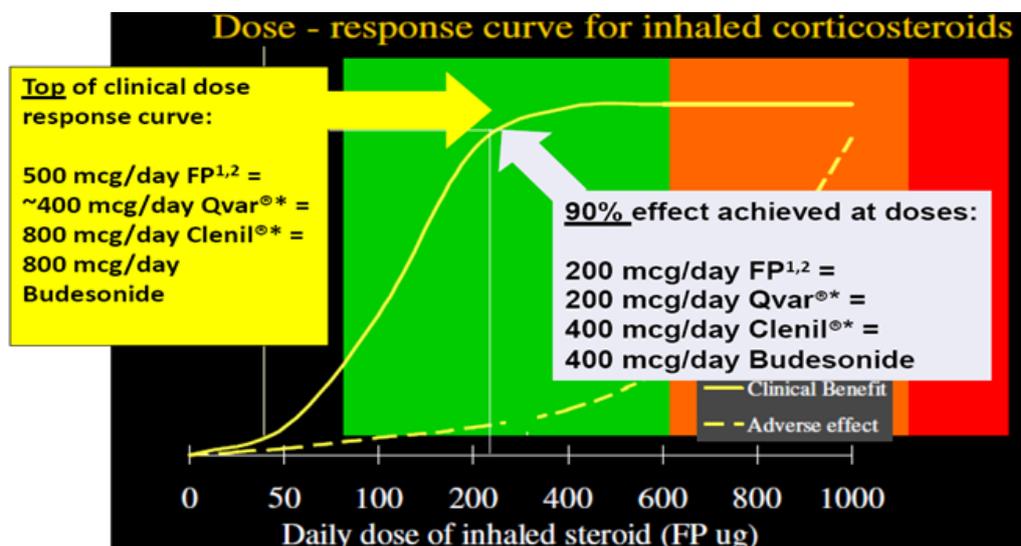
This suggested to us that there was likely to be unwarranted variation from existing national guidelines:

ASTHMA

BTS/SIGN guidelines recommend that patients should be maintained at the lowest possible dose of inhaled corticosteroid which effectively controls symptoms and states that normally it would be expected that the majority of patients seen in primary care should be managed at steps 1–3 of the treatment pathway i.e. at doses up to 800 micrograms BDP or equivalent daily.

Equally it is important that the dose is sufficient to control symptoms so that people are not over-using their short term reliever inhalers.

The following dose response curve for inhaled corticosteroids illustrates the diminishing benefits at higher doses. The increase in the potential for adverse effects at higher doses is also well documented.



ICS Dose Response Curve (Masoli M et al. Thorax 2004; 59:16-2)



COPD

Local audit identified 61% (n=1400) patients with mild – moderate COPD (FEV1>50%) being prescribed triple therapy which includes ICS/LABA (not supported by NICE Guidance)

The following graphs demonstrate that despite a high use of high strength ICS and with prevalence accounted for, ABUHB still has a higher rate of admissions/ procedures for COPD and Asthma. (HRG = Healthcare Resource Group (refers to secondary care procedures and admissions, clinically similar treatments which use common levels of healthcare resource)).

KEY LEARNING POINT - 3

Our inhaler prescribing patterns could not be explained by prevalence or severity of disease and was not producing a relative improvement in outcomes, based on hospital admission data on exacerbation rates

Figure 10. COPD-related HRG episodes per 1,000 population against high-strength ICS prescribing

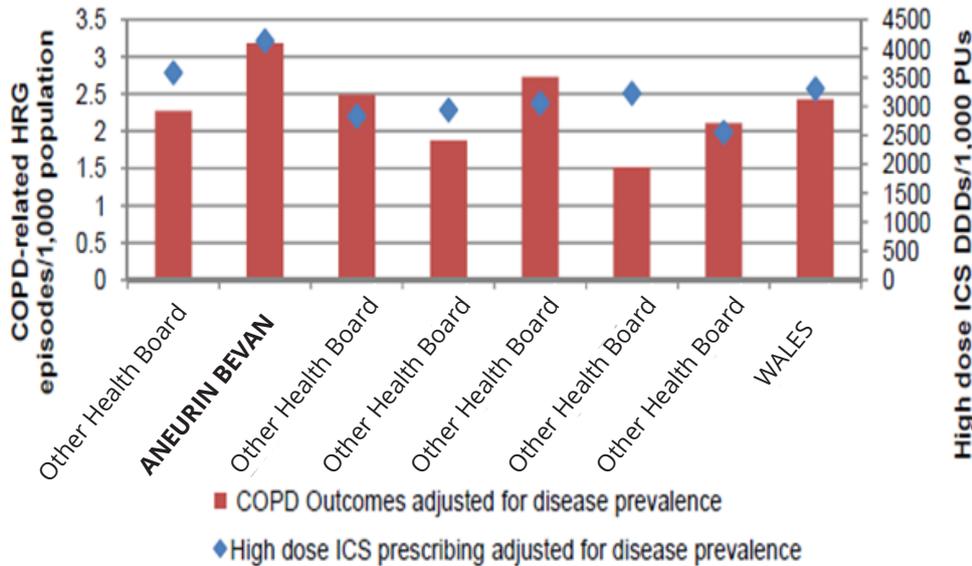
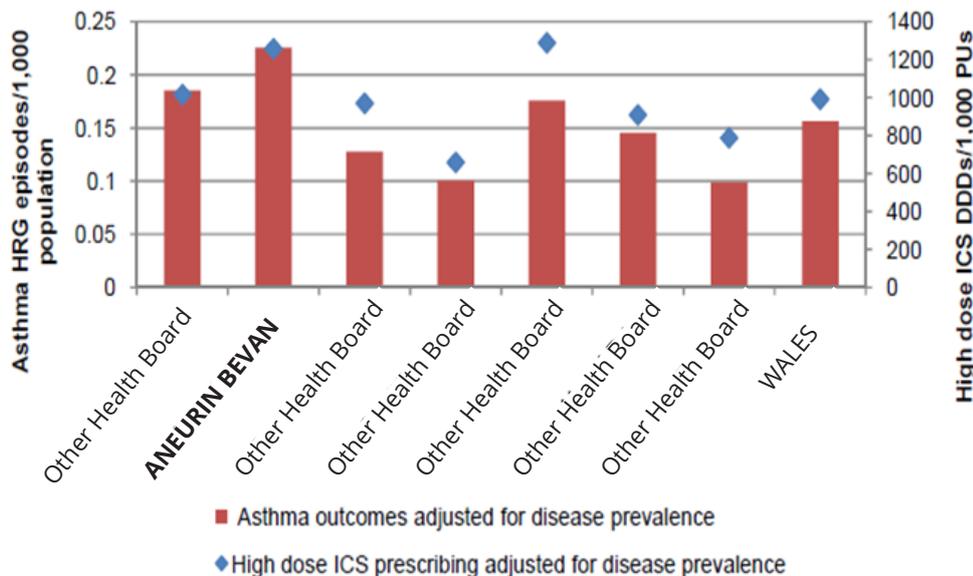


Figure 11. Asthma-related HRG episodes per 1,000 population against high-strength ICS prescribing



Our high spend and relatively high use of the more potent ICS products cannot be fully explained by greater prevalence or deprivation compared to other areas of Wales as demonstrated in the following graphs prepared by the Welsh Analytical Prescribing Support Unit and does not equate to better patient outcomes.

> | ISSUES

A collaboration of respiratory physicians, general practitioners, pharmacists, patients, third sector and finance colleagues came together to examine the available information on costs and outcomes and further articulate in detail the underlying contributory factors to the presenting situation. This then formed the basis of a strategy for improving value i.e. outcomes per pound spent for our local population.

1. Comparative data with other parts of the UK revealed an increased burden of high dose inhaled corticosteroids yet hospital admission for exacerbations of COPD remained the highest in Wales.

2. Our prescribing costs were disproportionately high.

3. Lack of consistency of prescribing between primary and secondary care

4. Growing number of new drugs and inhaler devices causing inconsistency and confusion amongst patients and professionals

5. Significant number of people with asthma not accessing annual review – some of these identified at audit as potentially overusing relievers and under using preventers. The National Review of Asthma Deaths has identified this as a risk.

6. Inhaler technique training patchy and inhaler technique often a problem, sometimes causing dose escalation through incomplete delivery of medication.

7. Inequitable access to pulmonary rehabilitation and Breathe Easy support groups across the region

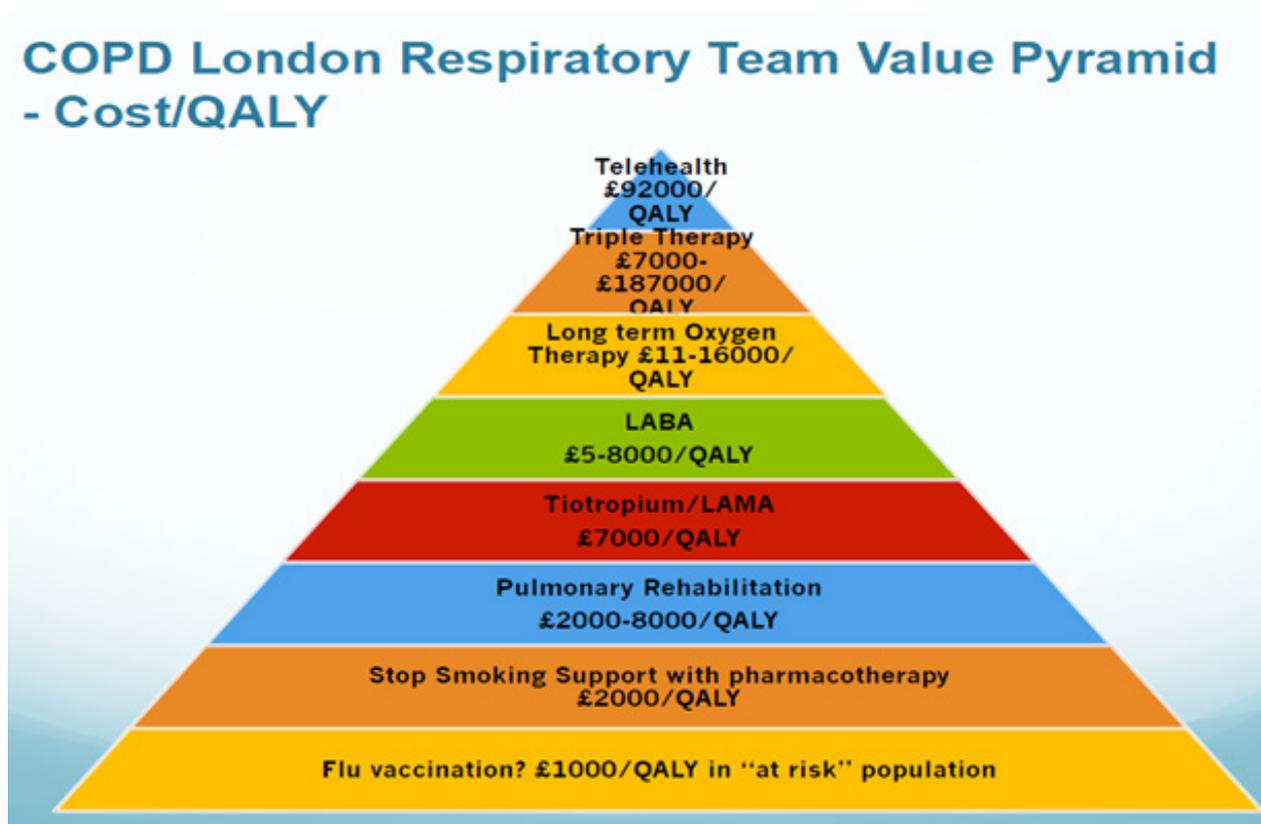
8. Extreme difficulty encountered in achieving flexible use of resources across a disease programme because of budgetary silos.

KEY LEARNING POINT - 4

Budgetary silos can be a significant barrier to achieving maximum allocative value for a population.

The available evidence for cost effectiveness in managing COPD was also considered and the value pyramid from the London Respiratory Network provided a powerful visual focus for the group as it was appreciated by all members that there was disproportionate under investment in pulmonary rehabilitation

in particular. This highlighted an eighth problem- the extreme difficulty of moving funds between services across a disease programme because of budgetary silos. Overcoming this issue would require some radical thinking from Finance and full support from the Board.



All participants quickly became unified in their desire to rebalance the system by disinvesting in interventions which were not improving outcomes and therefore adding value for patients, but crucially to make the case to the Executive Board that a proportion of any savings made should be reinvested in high value care – in this case, pulmonary rehabilitation. The prospect of influencing how resource

could be re-allocated for the benefit of patients with respiratory disease was very motivating for all of the participants and was a major factor in the success of the project.

KEY LEARNING POINT - 5

The value-based approach to problem solving quickly unifies all members of the team around a common purpose and enables a range of solutions to be found

> | SOLUTIONS

ISSUES 1-4

- 1** Comparative data with other parts of the UK revealed an increased burden of high dose inhaled corticosteroids yet hospital admission for exacerbations of COPD remained the highest in Wales.
- 2** Our prescribing costs were disproportionately high.
- 3** Lack of consistency of prescribing between primary and secondary care
- 4** Growing number of new drugs and inhaler devices causing inconsistency and confusion amongst patients and professionals

The group wanted to tackle the first four problems together, creating a long term prescribing strategy which supported patients and clinicians in making choices about inhaled medication which was in line with guidance, cost effective and promoted adherence and optimal technique. The traditional approach to making cost savings in medicines optimisation is to

promote prescribing of medication at the lowest acquisition cost. Sometimes this is supported by large scale switching of medication. In many circumstances this can be an entirely appropriate action to take, but in this case the group was keen to ensure that in the long term patients were able to choose the device which most suited them (in order to optimise

technique and therefore outcomes) and also to simplify prescribing guidance for prescribers. Therefore the approach taken was to promote cost effective device pathways for the longer term, rather than being overly prescriptive about first line

choices or making opportunistic switches for short term savings. Any switching that was carried out as part of the project was entirely in keeping with this strategy and prescribing became fully aligned between primary and secondary care.

ISSUE 5 - Significant number of people with asthma not accessing annual review

During some of the early audit work it was identified that many patients with asthma were not accessing their annual asthma review, despite three reminders from their GP practice. In a proportion of this group there was evidence of overuse of reliever medication and underuse of preventers. In order to address this and fulfil the recommendations of the NRAD report a community pharmacy local enhanced service pilot was developed to identify and advise these patients when they attended to pick up their prescription.

ISSUE 6 - Inhaler technique training patchy and inhaler technique often a problem, sometimes causing dose escalation through incomplete delivery of medication.

This is a well-recognised issue and the group were keen to ensure that there were sustainable measures in place to develop good inhaler technique across the population for the long term. This required a train the trainer strategy. Funding secured for advanced inhaler technique training programmes to produce enough ABUHB trainers to deliver a sustained training programme for healthcare professionals' year on year. A study of 150 healthcare professionals in 2010 revealed that although 75% were regularly involved with teaching inhaler technique only 9% could demonstrate all the correct steps for a pMDI (Baverstock M et al.)

ISSUE 7 - Inequitable access to pulmonary rehabilitation and Breathe Easy support groups across the region

Provisional Board support was obtained for the group to develop a business case for expansion of pulmonary rehabilitation services to ensure equitable ease of access across Gwent, funded through savings made from the medicines optimisation programme.

> | INTERVENTIONS



ISSUES



SOLUTIONS

<p>1. Comparative data with other parts of the UK revealed an increased burden of high dose inhaled corticosteroids yet hospital admission for exacerbations of COPD remained the highest in Wales.</p> <p>2. Our prescribing costs were disproportionately high.</p> <p>3. Lack of consistency of prescribing between primary and secondary care</p> <p>4. Growing number of new drugs and inhaler devices causing inconsistency and confusion amongst patients and professionals</p>	<ul style="list-style-type: none"> • Simplify treatment guidelines/pathways for asthma and COPD • Rationalise formulary choices with a device led approach for each drug class across each step of the pathways • Embed guidance with CPD events for GPs and practice nurses supported by consultant podcasts • Adopt an integrated nursing approach between specialist respiratory and generalist nursing
<p>5. Significant number of people with asthma not accessing annual review</p>	<ul style="list-style-type: none"> • Community pharmacy intervention to identify and support people who had not had an annual review
<p>6. Inhaler technique training patchy and inhaler technique often identified as poor</p>	<ul style="list-style-type: none"> • Implement a long term plan to maintain high levels of competence in inhaler technique training
<p>7. Inequitable access to pulmonary rehabilitation and Breathe Easy support groups across the region</p>	<ul style="list-style-type: none"> • Develop business case to reinvest prescribing savings made into pulmonary rehabilitation • Work with the British Lung foundation to expand Breath Easy groups and integrate with pulmonary rehabilitation services.
<p>8. Extreme difficulty encountered in achieving flexible use of resources across a disease programme because of budgetary silos.</p>	<ul style="list-style-type: none"> • Initiate programme of work with finance colleagues to assess notional programme budgets



RESULTS

The results indicate a reduction in overall spend on respiratory drugs linked with proxy indicators indicating a potential reduction in harm and improved outcomes.

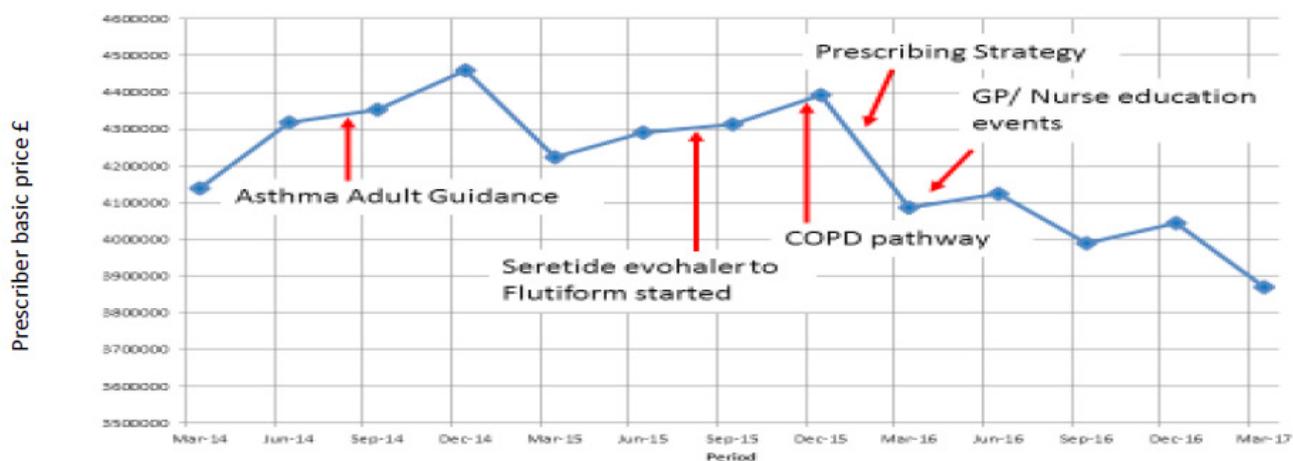
RESPIRATORY PRESCRIBING SPEND

Since 14/15 ABUHB has reduced respiratory prescribing spend by £1.3M and has reduced the average respiratory item cost by 9.2% as illustrated in Figure 1.

	Population Mar 2017	% variation to March 2015	Annual Respiratory Costs 16/17	% Variation to baseline 14/15	Price - difference	Annual Items 16/17	% Variation to baseline 14/15	Average Item Cost 16/17	% Variation to baseline 14/15
ANEURIN BEVAN - GP	606,141	0.9%	£15,907,653	-7.7%	−£1,325,843	1,137,820	1.6%	£13.98	-9.2%
Other Health Board - GP	550,725	0.7%	£15,286,194	-1.9%	−£287,788	1,089,702	2.7%	£14.03	-4.4%
Other Health Board - GP	707,307	0.2%	£18,206,951	-3.2%	−£603,774	1,261,915	2.3%	£14.43	-5.4%
Other Health Board - GP	515,858	1.2%	£10,645,996	1.3%	£130,958	739,723	1.3%	£14.39	-0.1%
Other Health Board - GP	305,448	0.5%	£10,403,587	-3.1%	−£327,693	708,077	2.9%	£14.69	-5.8%
Other Health Board - GP	389,961	-0.4%	£10,337,075	-4.8%	−£520,300	670,310	3.8%	£15.42	-8.3%
Other Health Board - GP	138,744	0.3%	£3,499,012	-1.3%	−£45,929	236,824	5.5%	£14.77	-6.4%

Graph 1 illustrates reduction in spend related to the interventions in the strategy

Figure 1. ABUHB Respiratory Prescribing Cost Trend (WP10 & WP10HP) 2014-2017

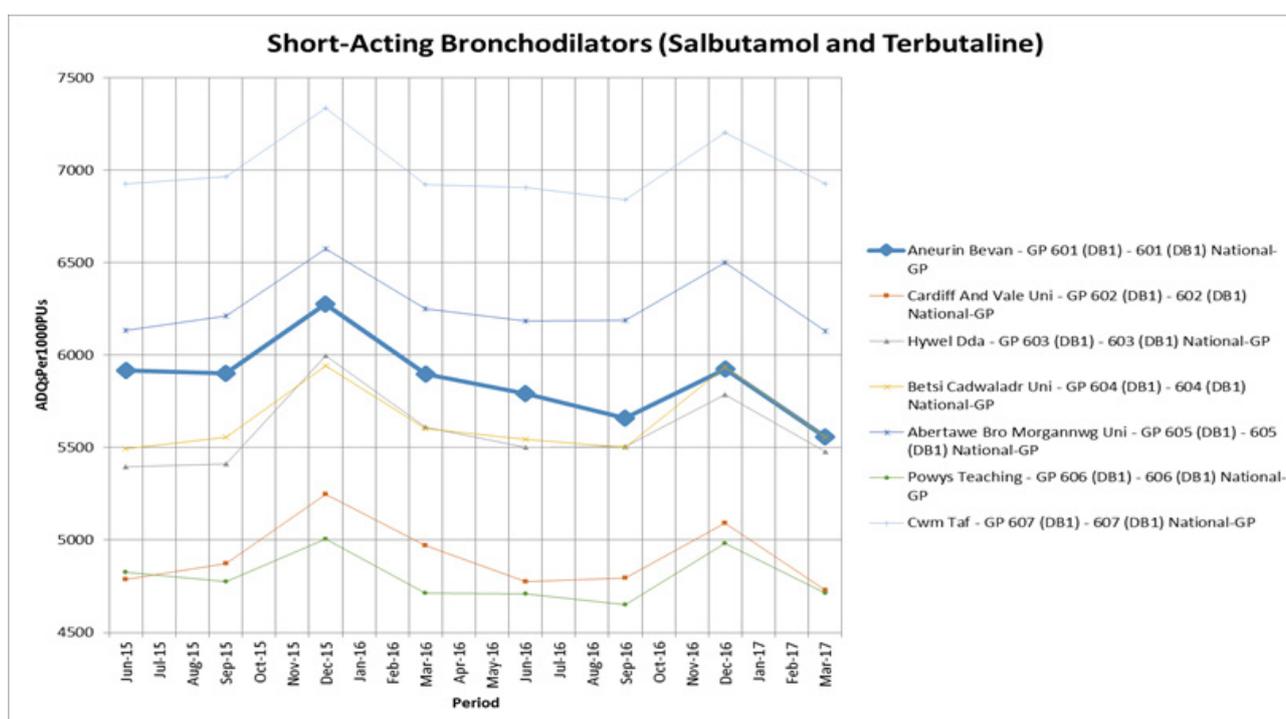


SHORT-ACTING RELIEVER PRESCRIPTIONS

The use of short-acting beta agonists (SABA), salbutamol and terbutaline has also reduced which could indicate patients are being better managed through their preventer medication and therefore being less symptomatic and/or waste in the system by over-ordering has been reduced. It is likely to result from a combination of these effects. Again ABUHB has the largest % decrease in cost and items compared to other Health Boards in Wales as illustrated in Figure 2.

	SABA cost 16/17	% Variation to baseline 14/15	Price - Difference	SABA Items 16/17	% Variation to 14/15	Items - Difference
ANEURIN BEVAN - GP	£886,109	-8.8%	-£85,501	348,513	-2.4%	-8,700
Other Health Board - GP	£922,102	-4.8%	-£45,969	349,062	0.8%	2,908
Other Health Board - GP	£975,896	-4.7%	-£48,226	407,717	3.1%	12,084
Other Health Board - GP	£594,593	-7.0%	-£45,053	228,201	-1.4%	-3,192
Other Health Board - GP	£526,375	-3.5%	-£20,641	219,555	-0.2%	-328
Other Health Board - GP	£593,050	-1.4%	-£8,597	213,546	2.0%	4,080
Other Health Board - GP	£176,467	-6.8%	-£12,776	74,615	3.0%	2,180

Graph 2 below shows the trend in SABA ADQ (average daily quantity), this metric was used to adjust for practices prescribing more than one inhaler per prescription item.

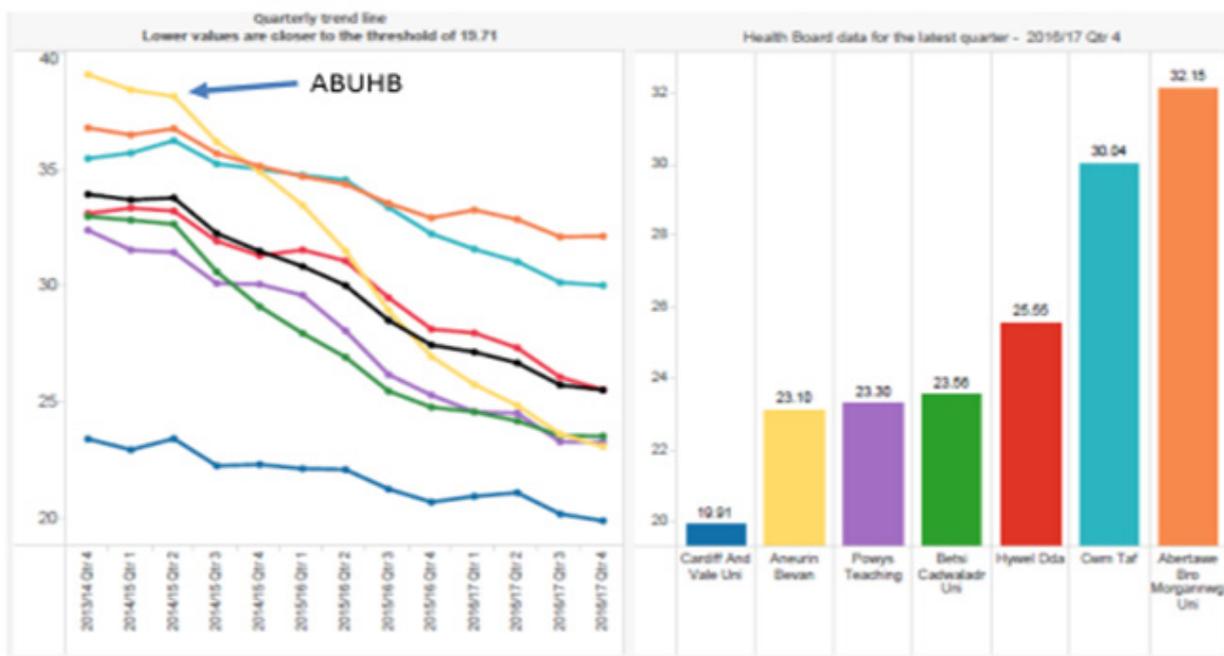


HIGH STRENGTH INHALED CORTICOSTEROID PRESCRIPTIONS

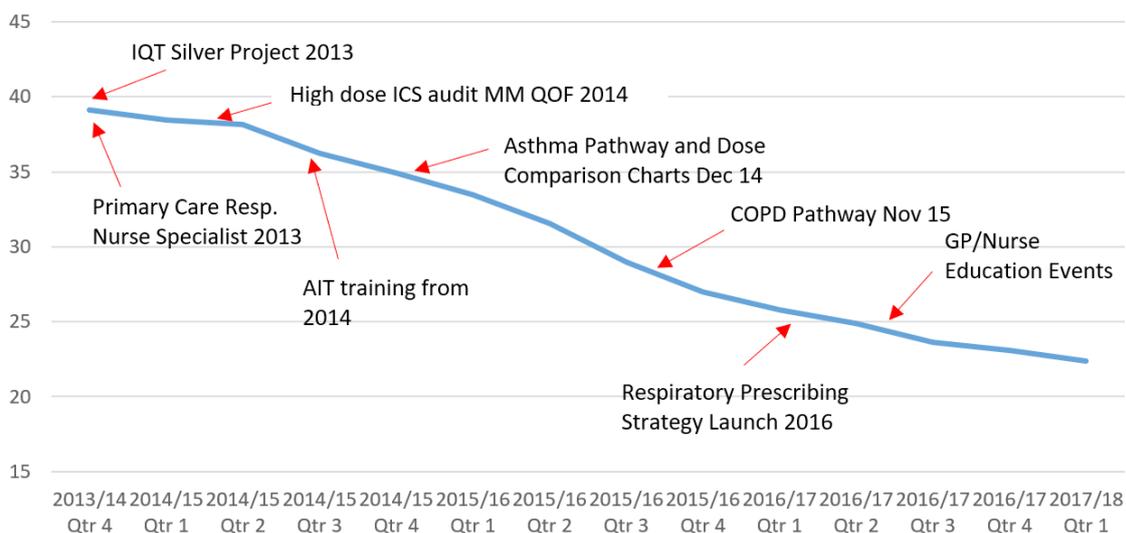
The proportion of high strength Inhaled corticosteroids prescribed has also reduced from 39% in 2014 to 23% in 2017. This reduction is greater than any other Health Board in Wales and prescribing is now better than the Welsh Average.

Figures 3 and 4 illustrate this relative to the other health boards and to the interventions in the strategy respectively.

High Strength ICS as % of all ICS
National Indicator 17/18 Target $\leq 19.7\%$



Aneurin Bevan % High Strength ICS: Intervention Timeline



DISCUSSION

It is not unusual in healthcare to discover that we have not optimised either the treatment we administer to people living with a chronic condition such as COPD, or to have allocated our resources in such a way as to maximise the outcomes for that population. It is important that we seek to rebalance the way we deliver healthcare to ensure we are achieving the best patient care and achieve outcomes that matter to people. It is a reality of modern healthcare that we must also seek to contain costs whilst improving outcomes i.e. achieve value for our population.

This case study demonstrates that it is possible to engage the multidisciplinary team and patients in going some way to achieving 'allocative value' for a population of patients with COPD and asthma.

We will only truly know how well we are performing in this area when we start to systematically measure patient reported outcome measures, and this will be the next phase of the programme.

