

A Strategy for Chronic Obstructive Pulmonary Disease Services in Salford

2008 – 2013

January 2009

	Contents	Page
	Acknowledgments	4
1.	EXECUTIVE SUMMARY	5
2.	THE VISION FOR COPD CARE IN SALFORD	6
3.	INTRODUCTION	8
3.1	Context and Background	
3.2	Purpose and Scope	
3.3	Stakeholder Involvement	
4.	THE IMPACT OF COPD	11
4.1	Introduction	
4.2	Prevalence	
4.3	COPD Mortality	
4.4	COPD Morbidity	
4.5	Service Utilisation	
4.6	Risk Factors	
4.7	The Patient and Carer Experience	
4.8	Communication Issues	
4.9	Summary	
5.	EVIDENCE BASE AND THE CURRENT SITUATION	31
5.1	Primary Prevention of COPD	
5.1.1	Lifestyle Changes	
5.1.2	Air Quality	
5.1.3	Primary Prevention – Gaps and Work to Sustain	
5.2	Diagnosis of COPD	
5.2.1	Raising Awareness	
5.2.2	Screening High Risk Patients	
5.2.3	Facilitating Diagnosis	
5.2.4	Diagnosis - Gaps	
5.3	Treatment and Management of COPD	
5.3.1	Smoking Cessation	
5.3.2	Vaccination	
5.3.3	Self Care	
5.3.4	Anticipatory Care	
5.3.5	Pulmonary Rehabilitation	
5.3.6	Support for Carers	
5.3.7	Treatment and Management – Gaps and Work to Sustain	
5.4	Complex Cases	
5.4.1	Active Case Management	
5.4.2	Telehealth	
5.4.3	Community Specialist Clinics	
5.4.4	Physiotherapy Services	
5.4.5	Psychological Therapies	
5.4.6	Oxygen Therapy	

5.4.7	Non-Invasive Positive Pressure Ventilation	
5.4.8	Surgical Treatments for COPD	
5.4.9	Complex Cases - Gaps and Work to Sustain	
5.5	Unscheduled Care	
5.5.1	Hospital Admission	
5.5.2	Intermediate Care	
5.5.3	Pathways Post Admission	
5.5.4	Unscheduled Care - Gaps and Work to Sustain	
5.6	End of Life Care	
5.6.1	End of Life Care – Gaps and Work to Sustain	
6.7	Information	
5.7.1	Patient Registers	
5.7.2	Information Sharing	
5.7.3	Access to Specialist Advice	
5.7.4	Clinical Audit	
5.7.5	Patient Consultation	
5.7.6	Information – Gaps and Work to Sustain	
5.8	Staff Training and Development	
5.8.1	Staff Training and Development – Gaps and Work to Sustain	
5.9	Summary	
6.	COPD PATHWAY	59
7.	WHAT WE WILL DO	61
8.	THE WAY FORWARD	65
8.1	Resource Implications	
8.1.1	Current Investment	
8.1.2	Future Investment	
8.2	Strategy Outcomes	
8.3	Monitoring and Evaluation	
8.4	Implementation Plan	
9	Glossary of Terms	80
10	Abbreviations	84

Acknowledgments

This strategy has been developed on behalf of Salford PCT with the input of a wide range of individuals. Special thanks must go to June Roberts (Respiratory Nurse Consultant) and Dr Nawar Bakerly (Consultant Respiratory Physician) who have been instrumental in the development of this strategy document.

1. Executive Summary

Chronic Obstructive Pulmonary Disease (COPD) is a progressive incurable, but largely preventable disease, which leads to damaged airways in the lungs. It is the fifth leading cause of death in England and Wales and people living in Salford are almost twice as likely to die from COPD as people living in other areas of England.

5500 people have been diagnosed with COPD in Salford and it is predicted that a further 6000 people have it but remain undiagnosed. The disease reduces quality of life for patients and places a great burden upon their families as well as health and social services.

This strategy is aiming for a whole systems approach to the prevention, early diagnosis, treatment and management of COPD that seeks to improve the health of the people of Salford.

Through reviewing best practice guidance, assessing the current situation in Salford and consulting key stakeholders, a patient pathway has been developed that includes:

- Primary Prevention of COPD
- Diagnosis of COPD
- Treatment and Management of Stable COPD
- Complex / Severe Disease
- Unscheduled Care
- End of Life Care

Information and staff training and development have also been acknowledged as being key to enabling improved outcomes for patients.

This strategy identifies gaps in services in Salford and goes on to set out what we will do to prevent disease occurring, to provide the right care in the right place at the right time, to reduce mortality and to deliver a high level of patient satisfaction. These gaps have been translated into an implementation plan. Progress against this plan will be monitored by the Salford Asthma and Respiratory Team. Actions in the plan include the piloting and evaluation of new services and initiatives (e.g. community screening, self care and anticipatory care), expanding existing services such as pulmonary rehabilitation, and the design and redesign of patient pathways and guidelines. By implementing the recommendations of this strategy, it is envisaged that the people of Salford will have access to world class COPD services that will reduce the number of people who die from the disease by providing high quality services following early diagnosis that enable patients to understand and better manage their conditions.

2. The Vision for COPD Care in Salford

Chronic Obstructive Pulmonary Disease (COPD) is a major cause of ill health and disability in Salford. It is mainly caused by smoking, but other factors like pollution, genetic factors and diet are also involved.

Many people will have COPD without being aware of it, therefore they will need to be tested and identified so they can have access to early treatment to prevent progression. In addition, large numbers of people are at risk of developing COPD with little awareness of the risk factors and the available preventative measures. Therefore, as well as focusing on care for patients with COPD, services in Salford will also have a large emphasis upon prevention and earlier identification of patients with COPD.

We are aiming for a whole systems approach to the prevention, early diagnosis, treatment and management of COPD that seeks to improve the health of the people of Salford. We will do this by continuing to ensure that the care and prevention delivered is based on the best available evidence of 'what works', and that services will be delivered with the minimum of delays, with access to the right resources in a timely fashion.

The approach will focus on developing and implementing COPD services in line with various levels of disease and pursuing a generic approach to the management of COPD as a long-term condition for the majority; with specialist input for those with severe/complex disease.

The service should have a community-based focus, with rapid access, when needed, to secondary care. A specialist respiratory team, to take the lead role in coordinating multidisciplinary management, should support the service.

It is intended that a seamless service will be created using clinical networks and care pathways where appropriate, allowing patients to receive a high standard of respiratory care and maintain as normal a life as possible. It is therefore, essential to deliver services in an integrated way, so patients know who to contact and when in an easy and efficient way.

Caring for a patient with COPD can be a stressful and traumatic experience as carers often find themselves with little or no support. Providing those carers with the right knowledge and support will be essential to keep their loved ones as well as possible.

The views of patients and communities will be pivotal in shaping our services. We will focus our resources on those areas and groups that are most affected by COPD. We will provide better access to services closer to home and reduced waiting times.

To summarise, our vision for Salford is that COPD services will:

- Be people centred
- Promote health, well-being and independence
- Prevent chronic respiratory disease
- Reduce inequalities in health
- Be multidisciplinary in approach
- Build on evidence based care and good practice
- Develop services appropriate to patients' needs
- Deliver more effective links between primary, secondary and tertiary care services

The late Trevor Clay, a nurse who died from COPD associated with an inherited condition, wrote "***Having a long term condition is not about dying – that only takes a few minutes or less – but I've been struggling for breath for over 20 years and I have been living a lot and suffering a little***".

We would like all patients to have that degree of optimism and self confidence about living with their COPD.



3 Introduction

The following section will describe the context and background to the development of this strategy. It will go on to set out the purpose and scope of the strategy. Finally an explanation of how stakeholders were involved in the development of the vision and strategy will be given.

3.1 Context and Background

The vision for Salford Primary Care Trust (SPCT) is that:

“The people of Salford will live longer healthier lives supported by a world class health system”

The work of the PCT is based around six pledges:

- Protect people and help everyone enjoy longer healthier lives
- Provide better and more services
- Improve the quality of care
- Improve access to the right treatment and services
- More involvement of staff and people
- Be a well run organisation

This strategy has been written to reflect the SPCT vision and pledges in the commissioning of services for Chronic Obstructive Pulmonary Disease (COPD) in Salford.

COPD is an illness that is generally unheard of by the public and yet it has a high incidence and causes untold misery to the people who have it. COPD places a great burden upon patients, their families and health and social services in Salford. 5500 people have been diagnosed with COPD in Salford and whilst this is already approaching twice the national average, it is predicted that a further 6000 people are living with this illness but do not have a diagnosis. This is important as COPD impacts on physical, social and psychological aspects of daily life to the extent that those with COPD have a greatly reduced quality of life. Largely caused by cigarette smoking, lung damage in COPD cannot be reversed and is cumulative. The earlier people know about the damage that COPD does to their lungs, the sooner they can take action to halt that damage. The trend of diagnosing late, when symptoms are more severe, must be stopped if quality of life is to be improved and lives saved. People living in Salford are twice as likely to die from COPD as people living in other areas of England.

Many people who currently suffer from respiratory disease acknowledge the high standard of advice, support and care they receive from health and social care professionals. With increasing awareness, knowledge and skills, even higher standards can be achieved.

A National Service Framework (NSF) for COPD is in development and expected to be published in late 2008. Key stakeholders developing the framework have revealed that the NSF will concentrate on service delivery

rather than pharmacological management which is already covered in NICE guidelines.

This strategy seeks to pre-empt the NSF by using informed expert opinion to predict its content. Key issues are predicted to include:

- Awareness raising of COPD amongst the general public
- Smoking cessation
- Screening of at risk groups and early diagnosis
- Access and quality of spirometric measurements
- Care delivered closer to home
- Access to specialist care for diagnostic uncertainty, complexity or severity
- Access to pulmonary rehabilitation to all who need it
- Access to psychological support for all who need it
- Access to dietetic support for all who need it
- Access to social support for all who need it
- Access to non invasive ventilation for all who need it
- Early supported discharge from hospital scheme
- Palliative and supportive care for all who need it

A COPD Best Value Project was initiated in Salford PCT in 2007. The development of a COPD strategy was part of the project plan. Salford is now in a position to consider its long-term strategy and vision for provision of COPD services and implementation of national standards and guidelines.

3.2 Purpose and Scope

This strategy provides a strategic framework for the commissioning of COPD services for Salford, beginning by assessing the burden of respiratory disease. It then goes on to look at the evidence base on best practice in respiratory services, reviewing current services in Salford and identifying gaps in service provision. Finally, recommendations are made on the improvements needed to deliver a world class COPD service.

The strategy supports our delivery of national guidelines for COPD management and will prepare us to deliver the NSF for COPD.

This strategy follows the direction of the Long Term Conditions (LTCs) Programme and considers COPD as a whole health and social care economy issue. Therefore, prevention, self-care, disease specific case management and active case management are all considered with a joined up, integrated approach being adopted.

By implementing the recommendations of the strategy, it is envisaged that we will:

- Reduce the number of Salford people developing COPD
- Ensure early and accurate diagnosis
- Effectively treat and manage COPD to prevent deterioration
- Manage and support patients with severe COPD to keep them well

- Reduce inappropriate unscheduled hospital admissions and emergency bed days
- Manage and support COPD patients at the end of life

This strategy focuses on services for COPD. Whilst there will inevitably be some overlap with wider respiratory services, they are not within the scope of this strategy and a Salford Respiratory Strategy will be developed later in 2008.

3.3 Stakeholder Involvement

Work on joining up the wide and varied LTC agenda in Salford began in November 2005. A comprehensive series of involvement events took place to ensure that a wide range of service users and staff were aware of the National Model and had the chance to contribute to the development of the Vision for the Management of Long Term Conditions in Salford.

This involved presentations to and discussions with large groups of service users and staff in a number of different settings. Service users and carers were engaged in the Salford Heart Care Support Group involvement meetings, diabetes patient involvement events, Salford Asthma and Respiratory Team and shaping services events over the same time period.

Over 400 staff from a number of agencies were engaged directly through team meetings, open meetings and a LTC event in February 2006. In addition, information and the opportunity to comment on the Vision was posted on the PCT Intranet from December 2005 to March 2006 and was sent to all GP practices, with comments invited. Following this involvement, a Long Term Conditions Programme was produced with a recommendation to develop a respiratory strategy.

In relation to developing this strategy in particular, there have been two smaller staff involvement events followed by a major strategy development session, which was attended by 60 staff and patients on World COPD Day on 15th November 2006. At that event, the key gaps and issues for service provision were identified and some key actions for delivery were proposed. There has also been additional work with young people with asthma and older people with COPD. All the views gathered have been incorporated into this document.

4. The Impact of COPD

4.1 Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a general term that is used to describe a number of conditions including chronic bronchitis and emphysema. COPD is a progressive incurable, but largely preventable disease, which leads to damaged airways in the lungs, causing them to become narrower and making it harder for air to get in and out. With early diagnosis and the right care, the progression of the disease can be slowed down, allowing people to live healthy and active lives for longer.

The most important risk factor for COPD is cigarette smoking (causing approximately 90% of cases). Other risk factors include social deprivation, diet, occupational exposure to dust, indoor pollution such as smoke from coal fires and in a small number of cases, an underlying genetic fault¹. Recent research also indicates that poor airway function after birth should be recognised as a risk factor for COPD².

COPD is a widespread but largely invisible disease. Most people in the UK have not heard of the disease or its symptoms. It is therefore unsurprising that underdiagnosis and misdiagnosis (often as asthma) are common and that those affected become isolated by the physical and emotional side effects of the disease as its severity increases. Most will eventually find themselves unable to work, will struggle with daily activities and without proper treatment and care will be fighting for breath – experiencing emergency hospital admissions – which they and their families find terrifying³.

Nearly 900,000 people in the UK have been diagnosed as having COPD and half as many again are thought to be living with COPD without the disease being diagnosed. The symptoms of the disease usually develop insidiously, making it difficult to determine the incidence. Most patients are not diagnosed until they are in their fifties. According to the Quality and Outcomes Framework (QOF) 2006/7, there are 5500 people diagnosed with COPD in Salford. This is thought to be a significant underestimate: modelled prevalence predicts that a further 6000 patients (5% of the over 35s) remain undiagnosed. The main tool for objective diagnosis of COPD is lung function testing via spirometry.

COPD is the fifth most common cause of death in England and Wales killing more than 30,000 a year; and morbidity is high with patients needing frequent primary and secondary care input. In Salford, COPD is amongst the leading cause of unscheduled hospital admissions (937 in 2006/07) and death rates are approaching 50% more than the national average⁴. COPD is one of the most costly inpatient conditions treated by the NHS, with direct costs estimated to be almost £500 million a year. The annual cost of treating people

¹ National Clinical Guidelines on Management of COPD in adults in primary and secondary care. Thorax 2004; 59 (Suppl1): 1-232

² Stern et al Poor airway function in early infancy and lung function by age 22 years: a non selective longitudinal cohort study The Lancet 2007; 370: 758-64

³ British Lung Foundation Invisible lives 2007

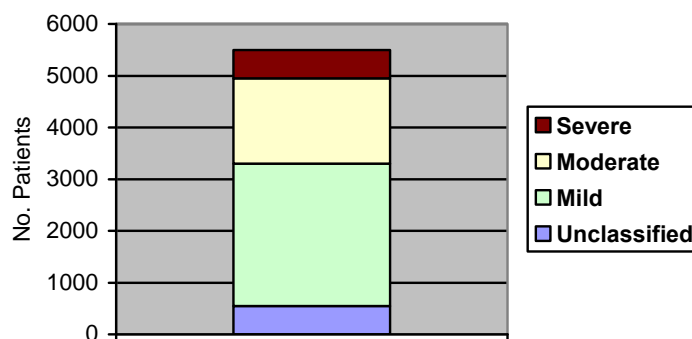
⁴ National Statistics, Health Statistics Quarterly 30, Summer 2006.

with mild COPD is £149; it costs £1,307 for a person with severe disease¹. Almost 50% of the current COPD population in the city has moderate to severe disease⁵.

At present, most people are diagnosed when the disease has reached a late stage. If people with COPD can be reached whilst the disease is still in its early stages, its progression can be slowed with appropriate management and care.

Figure 1 shows the number of patients in Salford at each stage of the disease.

Figure 1: Number of COPD patients in Salford at each stage of disease



Salford PCT has recently been identified as one of the top 20 PCTs with the highest proportion of people at risk of future hospital admissions for COPD³. Therefore, one of the greatest challenges facing Salford lies in identifying the estimated 6000 people in the city with undiagnosed COPD and those at the greatest risk of hospital admission.

4.2 Prevalence

The mean current prevalence of COPD in Salford (2.37%) is significantly higher than the national average (1.4%), and the incidence according to Salford's QOF data is increasing by approximately 10% per year (estimated 60% due to increased case finding and 40% due to an increase in disease). Yet it is predicted that this remains an underestimate of the true mean prevalence for the city (4.9%) (Table1).

⁵ Roberts and Bakerly Benchmarking COPD across an inner city primary care organisation Thorax 2007 62 suppl III S134

Table 1: Current and predicted prevalence of COPD in Salford (2006/7)

Current Prevalence	Range	Predicted Prevalence	Range
5569 (2.37%)	0.93 – 4.55%	11,538 (4.9%)	1.82 – 6.27%

Using a model critically appraised as appropriate to Salford’s population, we can clearly see the variation in prevalence across all general practices in Salford and the predicted population who are currently undiagnosed (Figure 2). The model allows the prevalence of COPD to be estimated at practice level based on their compositions according to age, sex, smoking status and ethnicity, and on the degree of urbanisation and deprivation in the area.

Only 4 practices in the city have attained the expected prevalence level, therefore much work remains to be done to support practices’ ability to identify at risk groups and their undiagnosed population.

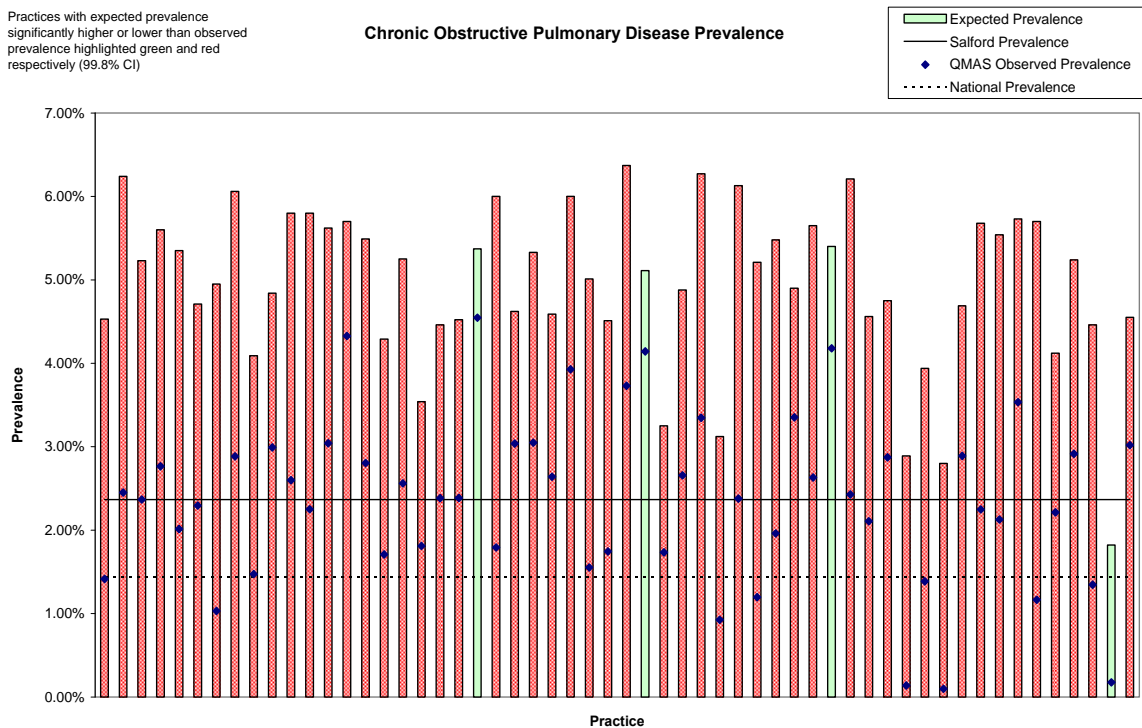
The biggest risk factor for developing COPD is smoking and we know that 38% of the Salford population (approximately 60,000 people)⁶ are smokers.

Raising awareness of COPD, screening at risk groups and targeting smoking cessation interventions to enhance quit rates may prevent significant COPD developing and halt the progression of more advanced disease⁷. The prevalence of COPD at practice level is significantly related to smoking prevalence, the age of the practice population and deprivation⁵.

⁶ Salford Public Health Report 2005

⁷ Anthoniensen et al

Figure 2: The gap between current and predicted COPD prevalence at General Practice level in Salford



A PATIENT'S VIEW

Lesley aged 54 years from Salford was diagnosed with COPD in the late 1990s. She is an ex smoker who smoked around 20 cigarettes a day.

She says "I started smoking at 14 because everyone was doing it. My children used to beg me to quit, but cigarettes were a drug that ruled me. But now I don't have any control over my life. They say life begins at 40, but mine just went into a downhill spiral. I can't even talk or walk without oxygen."

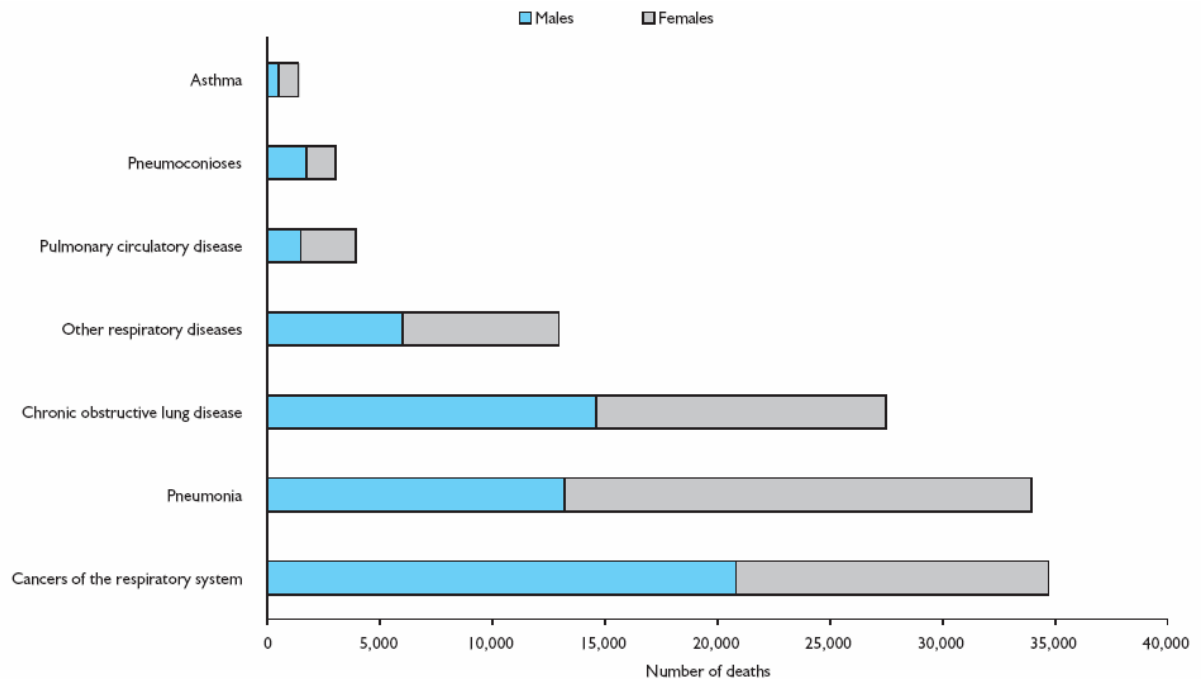
COPD has had a huge impact on Lesley's personal and family life. She now travels in a wheelchair and uses 24 hour oxygen.

"When I finally gave up smoking, I was annoyed how easy I found it the patches did it for me in the end. I wished I'd stopped smoking a lot sooner, but I kept saying 'I'll give up next month'. I had never heard of COPD. I'd say to anyone still smoking just get the help you need and stop now."

4.3 COPD Mortality

Respiratory disease now kills one in five people – 117,456 deaths in the UK in 2004. Chronic obstructive pulmonary disease is the third biggest cause of respiratory death, accounting for more than one fifth (23%) of all respiratory deaths.

Figure 3: Respiratory deaths by cause 2004



COPD kills 30,000 people a year in the UK and almost 200 people per year in Salford. Standardised Mortality Ratios (SMRs) provide a simple way to compare the number of deaths in Salford with other areas of the UK. An SMR of 100 is the national average. SMRs are adjusted for differences in the age and sex of the population. The standardised mortality ratio for Salford for respiratory disease (excluding lung cancer) is 140. In Salford, the SMR for women is significantly greater than for men (151 vs 129). This means that overall, Salford experiences 40% more deaths from respiratory disease (mainly COPD) than other areas of the UK, but women in Salford are over 50% more likely to die from COPD⁸. The increased number of deaths from COPD in women can probably be explained by the fact that men are more likely to develop COPD alongside other conditions and they are more likely to die from those other conditions (e.g. stroke or ischaemic heart disease).

Deaths rates from respiratory disease in the UK have decreased by 40% since 1970. Over the same period, reported death rates from ischaemic heart

⁸ Lakhani A, Olearnik H, Eayres D (eds). Clinical and Health Outcomes Knowledge Base. London: The Information Centre for health and social care / National Centre for Health Outcomes Development, 2007.

disease fell by 53% and death rates from all cancers (excluding lung cancer) fell by 9%. However, the fall in respiratory disease deaths is partly due to changes in the rules on how pneumonia deaths are coded in the UK. In particular, the introduction of a coding rule in 1984 led to a sharp fall in the death rate for all respiratory disease between 1983 and 1984. Changes in coding rules between 1992-1993 and 2000-2001 also affected respiratory deaths. Taking into account these coding changes, death rates from respiratory disease have changed little since 1984, whilst death rates from ischaemic heart disease have halved in the same. The relative burden of respiratory disease in the UK is thus unchanging as the burden of ischaemic heart disease is decreasing.

A FAMILY'S VIEW

James, aged 68 years died in 2006 from COPD.

After his death his daughter said "I had never heard of COPD until dad got his diagnosis. He was so breathless that he could not get out of the house. My mum and dad were stuck in the house all the time and could not enjoy their retirement. Dad could not even go out into his garden – which used to be his pride and joy. Over the last year of his life he struggled to wash or dress himself. He was rushed into hospital lots of times. It was really frightening for me and my mum – and especially Dad.

We didn't think he would die; nobody told us you could die from COPD".

Social class gradients are steeper for respiratory disease mortality than for mortality in general, with deaths from COPD showing the most marked social class differentials. Men aged 20-64 employed in unskilled manual occupations are around 14 times more likely to die from COPD than men employed in professional roles; this may be due to increased rates of deprivation, smoking and occupational exposures amongst unskilled manual workers. Social inequality causes a higher proportion of deaths in respiratory disease than in any other disease area. It is estimated that in the early 1990s, 3,800 deaths and 29,000 working years were lost each year in men aged 20-64 years due to social class inequalities in death rates from respiratory disease. It is also estimated that 44% of all deaths from respiratory disease are associated with social class inequalities, and would have been prevented if all men had the same death rate for respiratory disease as men employed in professional and managerial classes.

It is also known that weather, especially extremes in temperature can have an impact upon COPD mortality. The Met Office website reports that deaths due to respiratory disease increase 12 days after a fall in temperature. In England and Wales, there is a 2% increase in mortality for every degree below 19 °C; roughly half of these deaths are caused by respiratory conditions. Similarly, a large proportion of heat related deaths are caused by respiratory illness.

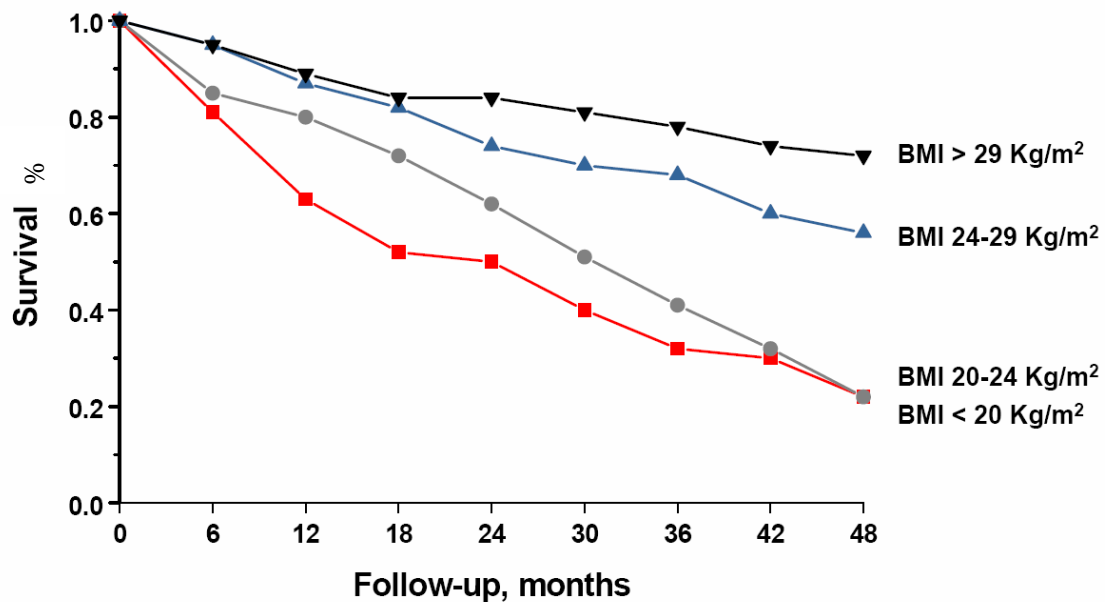
4.4 COPD Morbidity

COPD progresses slowly and sufferers do not normally seek medical attention until their disease is quite advanced. Although smokers in their 30s may have early COPD, they often attribute their symptoms to “smokers cough” and modify their daily activity to avoid exercises which provoke breathlessness. By the time they seek help, it may be too late for appropriate treatment. The overall quality of life for people with more advanced COPD is four times worse than for people with severe asthma and for those with severe disease is worse than for those with lung cancer⁹. Approximately half of Salford’s diagnosed COPD population suffer moderate to severe disease and experience significant symptom burden that impacts on them physically, psychologically and socially.

Many people with COPD suffer with restricted mobility caused by breathlessness; compounded by social isolation and poor self esteem. A British Lung Foundation Survey found that 90% of COPD patients were unable to participate in socially important activities such as gardening or going dancing, two thirds were unable to take a holiday because of their disease and one third had socially disabling breathlessness.

Although breathlessness and cough are the most common symptoms of COPD, the systemic effects of this disease have now been identified. They include weight loss, skeletal muscle dysfunction, cardiovascular disease, osteoporosis, depression and cancer¹⁰. Many of these factors increase mortality risk, an example is shown in Figure 4.

Figure 4: Relationship between Body Mass Index and survival ¹¹



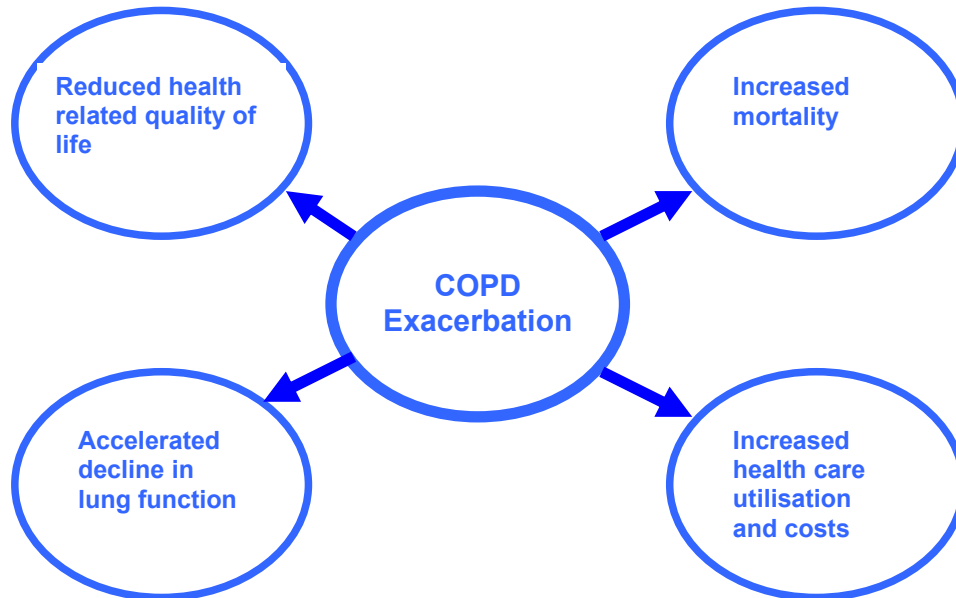
⁹ British Lung Foundation Lung Report III 2003

¹⁰ Augusti A 2005 Respir Med 99 (6): 670 - 682

¹¹ Schols et al 1998 AJRCCM 157: 1791-7

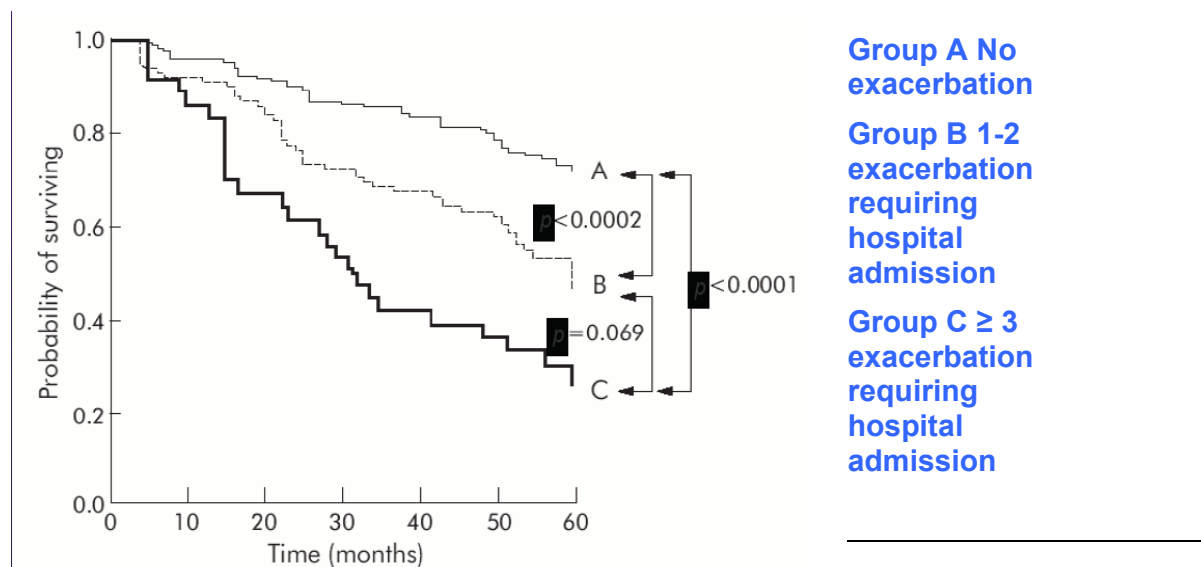
Exacerbations of COPD are one of the most important factors in reducing the quality of life of patients, increasing their risk of unscheduled hospital admission and relative risk of death.

Figure 5: The clinical consequences of COPD exacerbations



As can be seen in figure 6, the greater the number of exacerbations, (particularly those that necessitate hospital admission) the greater the risk of death.

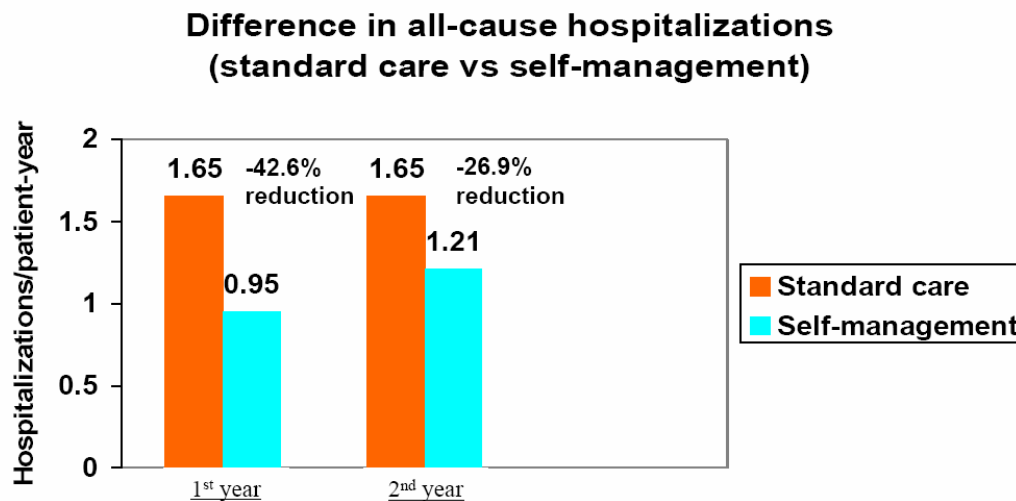
Figure 6: The increased risk of death with COPD exacerbation and hospital admission ¹²



The causes of COPD exacerbations include viral, bacterial and environmental triggers, but in 30% of cases, the cause is unknown. Exacerbations can be prevented. There is good evidence that influenza vaccination can reduce mortality and morbidity in older age groups, and in COPD (there is some evidence for pneumococcal vaccination). Appropriate pharmacotherapy can also reduce exacerbation rates by around 30%. Additionally, early pulmonary rehabilitation post exacerbation reduces the risk of readmission.

Early treatment of exacerbations also reduces the number of hospital admissions (see Figure 7), length and severity of the exacerbation¹³, so self care strategies are also important in COPD and are effective¹⁴. The exact model of self care that should be implemented is yet to be decided.

Figure 7: Self management education reduces short and long term hospitalisations¹⁵



As COPD progresses patients describe disabling shortness of breath, depression, cough, fatigue, pain, confusion, anorexia or thirst^{16 17 18}. This morbidity is reflected in severe impairment of quality of life and activities of daily living. Despite this, few people with end stage COPD receive specialist palliative care services or are offered the opportunity to discuss prognosis or make decisions about their care¹⁹. The majority die in hospital despite the

¹³ Wilkinson et al AJRCCM 2004

¹⁴ Effing et al Self management education for COPD Cochrane Review 2007

¹⁵ Gadourey et al ERJ 2005 26: 853-857

¹⁶ Skillbeck et al Palliative care in COPD: a needs assessment Palliative Med 1998 12:245-54

¹⁷ Elkington et al The healthcare needs of chronic obstructive pulmonary disease patients in the last year of life Palliative Med 2005; 19; 485-91

¹⁸ Elkington et al The last year of life of COPD: a qualitative study of symptoms and services Respir Med 2004; 98:439-45

¹⁹ Gore et al. How well do we care for patients with end stage chronic obstructive pulmonary disease? A comparison of palliative care and quality of life in COPD and lung cancer Thorax 2000; 55: 1000-6

recognition that many would prefer to die at home¹⁹ (79% of respiratory deaths in Salford in 2006 were in hospital). Deaths may occur suddenly before the patient is perceived to warrant a palliative care approach; therefore, the opportunity to enhance quality of life through relief of physical, psychological and spiritual suffering may be lost.

4.5 Service Utilisation

The costs of COPD are high and the majority stems from unscheduled hospital admissions for exacerbations. COPD accounts for at least 20% of all respiratory emergency admissions in the UK (Figure 8). There has been an increasing trend in unscheduled admissions to hospital for exacerbations of COPD over the past 20 years across the UK. This is probably due to better diagnosis and improved mortality rates in general. The most significant increase is in those aged over 85 years (Figure 9).

Figure 8: Respiratory emergency admissions to English NHS hospital by main diagnosis 2004/5

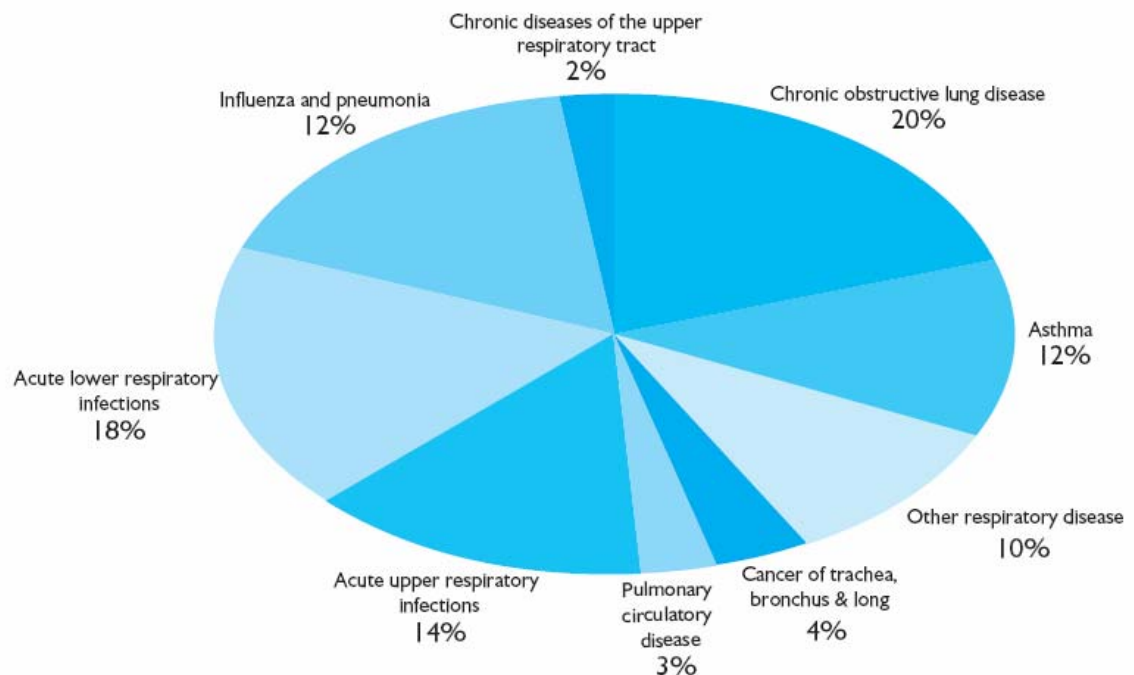
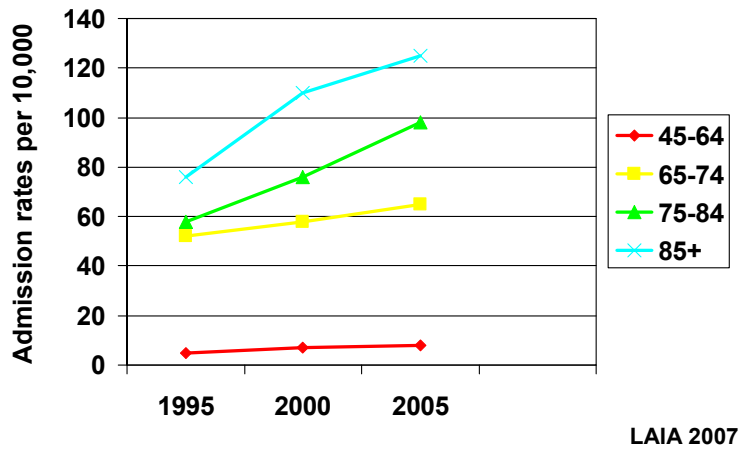


Figure 9: Trends in hospital admissions for COPD 1995-2005

Admission rates for COPD in older adults by age, England 1995-2005



The burden of COPD upon health services for patients in Salford remains great. Data from the North West Tactical Information System shows us where Salford patients receive their care when attending hospital. As can be seen in Figure 9, the majority of Salford patients who are admitted to hospital for acute COPD exacerbations go to Salford Royal Foundation Trust. SRFT also has the bulk of the outpatient activity (Figure 11).

Figure 10: Providers of Acute COPD Care for Salford Patients 2006/07

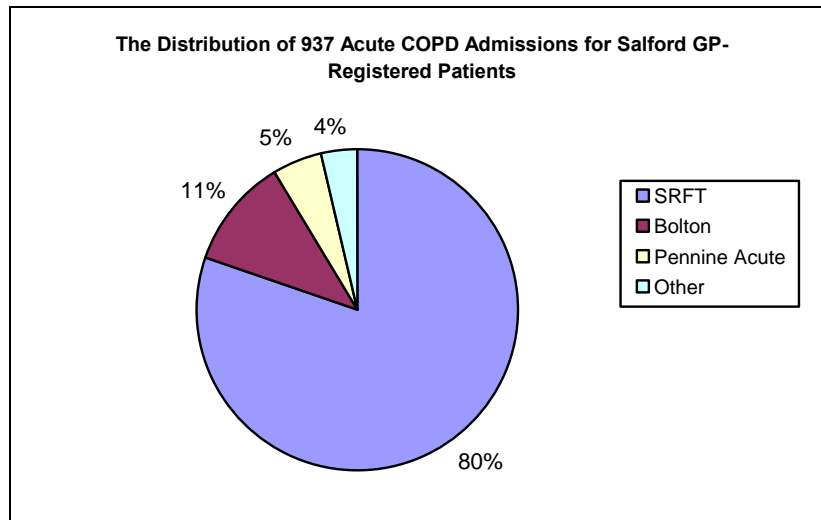
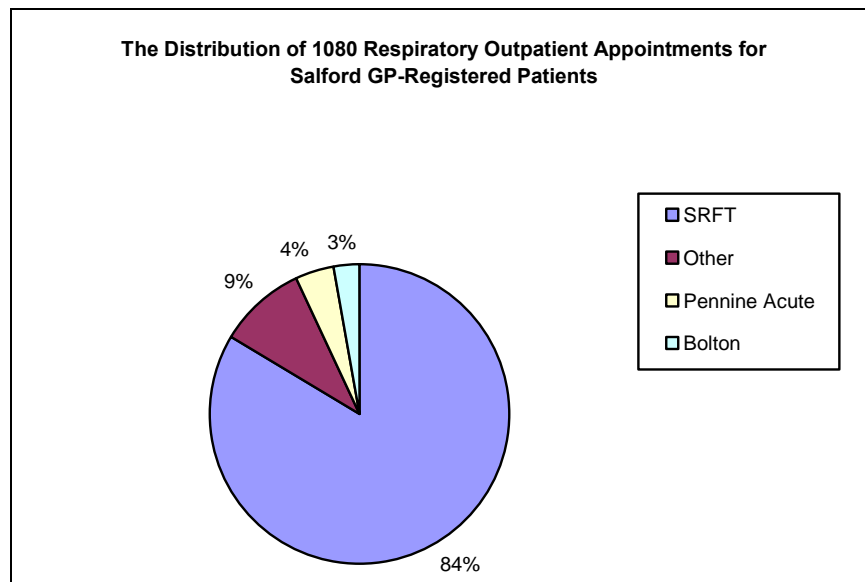


Figure 11: Providers of COPD First Outpatient Appointments for Salford Patients 2006/07



From data that has been collected using the Healthcare Resource Group (HRG) codes (which comprise a combination of diagnosis and treatment information that is related to a NHS tariff), we can see the number of spells²⁰ and the number of bed days for COPD. We are also able to work out the

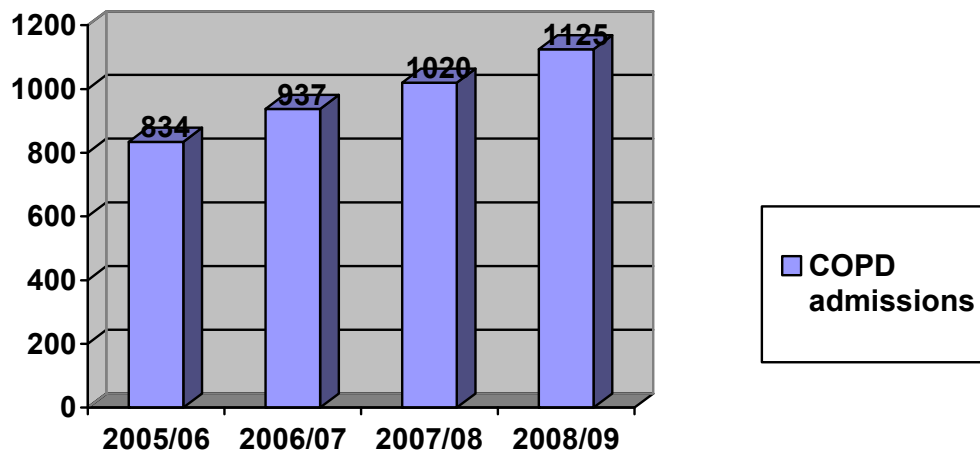
²⁰ A spell is considered to be the period from point of admission to point of discharge in one provider for any one patient.

average length of stay. It is important to say that these may not be the most exact measures of admissions for these conditions, but they do give us an indication of volume.

Table 2: COPD admissions (source Dr Foster and TIS)

	2005/ 06	2006/07	2007/08	2008/09
COPD admissions	834	937	Predicted 1020	Predicted 1125
		Up 12%	Up 10%	Up 10%

Figure 12: Predicted trajectory for COPD admissions for Salford to 2009



There is a need to strike a balance between having the shortest length of stay possible and jeopardising patient clinical outcomes and care needs. The National COPD Audit 2003 demonstrated a UK median length of stay of 7 days range (3-11). Reducing the average length of stay and saving bed days should be strived for – but patient safety and quality of service remain paramount.

The tables below show that in Salford, COPD accounts for a high number of hospital spells and bed days, thus attracting a high cost.

Table 3: Total – long and short stay: largest number of spells

HRG	Diagnosis sub-category	spells	Total tariff	Bed days
J44	<i>Other chronic obstructive pulmonary disease</i>	937	£1,500,910	5,534
I20	Angina pectoris	842	£935,229	3,179
J45	Asthma	544	£395,510	980

Table 4: Total – long and short stay: largest number of bed days

HRG	Diagnosis sub-category	spells	Total tariff	Bed days
J44	<i>Other chronic obstructive pulmonary disease</i>	937	£1,500,910	5,534
I50	Heart failure	342	£927,793	4,308
I21	Acute myocardial infarction	337	£1,173,516	3,377
I20	Angina pectoris	842	£935,229	3,179

Table 5: Total – long and short stay: greatest tariff cost

HRG	Diagnosis sub-category	spells	Total tariff	Bed days
J44	<i>Other chronic obstructive pulmonary disease</i>	937	£1,500,910	5,534
I21	Acute myocardial infarction	337	£1,173,516	3,377
I20	Angina pectoris	842	£935,229	3,179
I50	Heart failure	342	£927,793	4,308

A Patient's View

Graham is 58 years old and has been diagnosed with COPD for 4 years.

He says “I think I had COPD for at least 5 years before I was diagnosed. I was exhausted at the end of each working day and was forced to take more and more time off work. I was in and out of hospital. It was devastating when I eventually left work. I was the breadwinner for the family and my wife and I had to reverse our roles. She became the breadwinner and I stayed home. Jennifer is now not just my wife – she is my carer.”

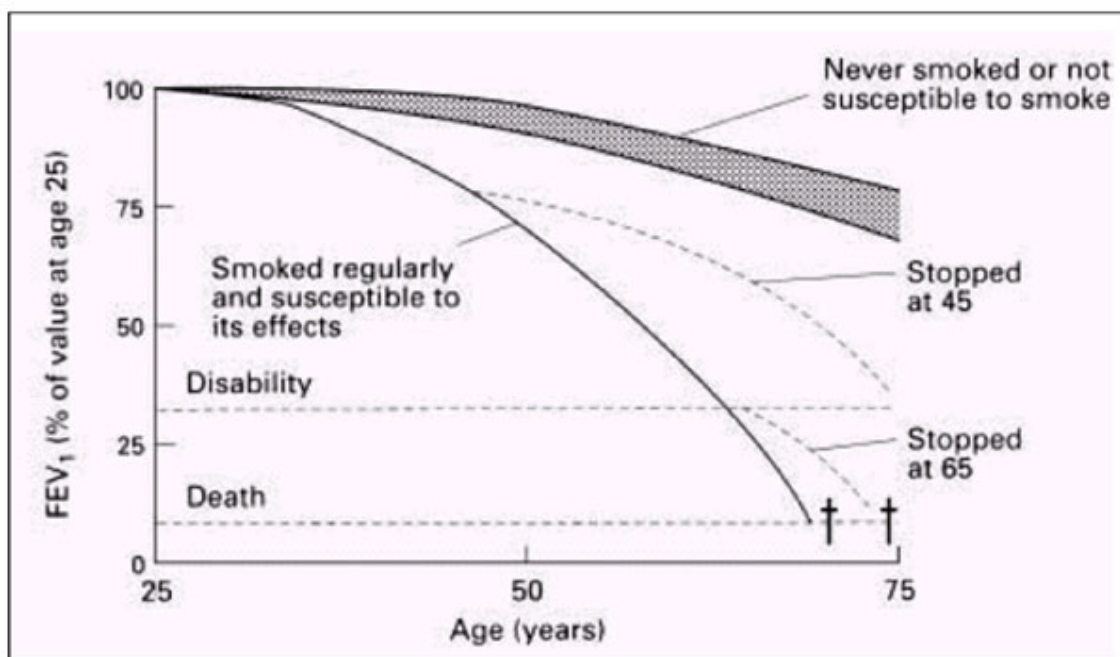
4.6 Risk Factors

A number of factors will increase a person's chance of developing COPD. Smoking, poor diet, occupational exposures, air quality, deprivation and genetic influences all significantly increase the risk of COPD and this risk is greater in socially disadvantaged groups.

Smoking

Smoking is the greatest risk factor for the development of COPD – approximately 90% of cases. At least 20% of lifelong smokers develop COPD. However emerging evidence suggests that this figure may be as high as 35% in those who continue to smoke. The odds of developing significant COPD are six times higher in continued smokers than in those who quit early²¹. Stopping smoking halts the progression of COPD for the majority of patients.

Figure 13: Effects of smoking and stopping smoking on the development of COPD²²



Latest figures show an estimated smoking prevalence in Salford of 30% of adults. Smoking rates amongst the COPD population are even higher at 41.3% and vary significantly across the city (Table 6). People in more disadvantaged groups are as likely to give up smoking but find it harder to do so. The burden of ill health caused by smoking falls more heavily on the more disadvantaged groups.

²¹ Lokke et al Developing COPD: A 25 year follow up of a general population Thorax 2006 61: 935 - 939

²² Fletcher and Peto Effects of cigarette smoking on lung function decline BMJ 1977 1

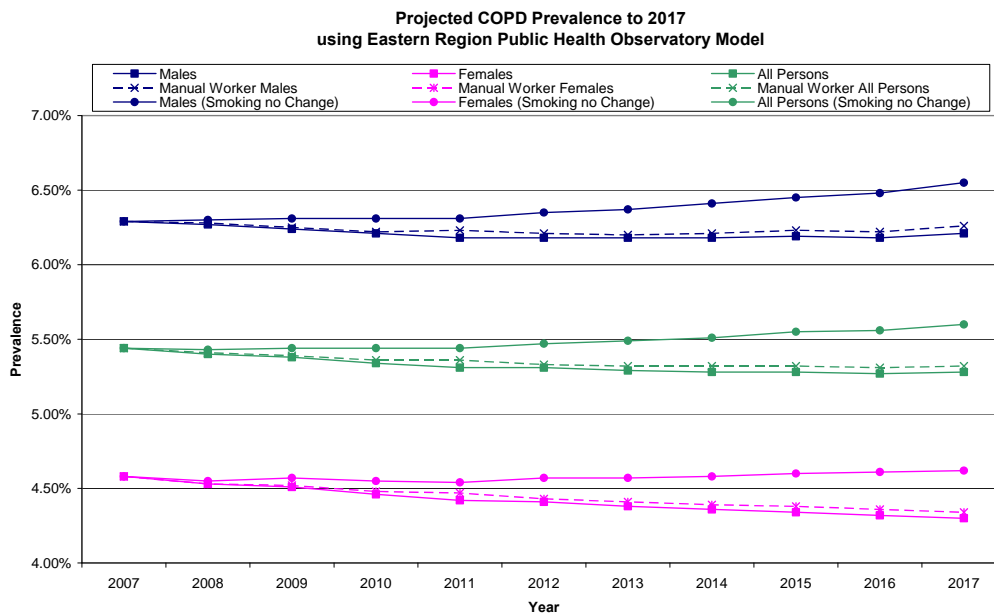
Table 6: Smoking status of COPD population in Salford

Smoker Type	Most Deprived Cluster* % of smoker type	Least Deprived Cluster % of smoker type
Current smoker	46.2%	33.4%
Ex smoker	40.7%	46.2%
Non smoker	13.1%	20.4%

* There are 8 clusters of GP Practices in Salford

Figure 14 shows future predictions for the prevalence of COPD if smoking prevalence in Salford reduces at the rate it has been reducing at for all persons in the rest of the country. It can be seen that if this happens, we could expect that almost 600 people will avoid developing COPD.

Figure 14: Effects of reduction in smoking prevalence upon COPD prevalence



Dietary Factors

Recent data suggests that antioxidants, foods rich in antioxidants (e.g. fruits, vegetables), fish and whole grains protect against COPD²³. Additionally, obesity worsens breathlessness and further reduces mobility in COPD patients. In severe disease, due to a combination of the increased work of breathing and systemic inflammation, patients can rapidly lose weight; this weight loss increases mortality risk.

Historically there has been a higher level of obesity in more deprived groups. Studies have shown that weight loss and prevention of weight gain are less

²³ Varraso et al Prospective study of dietary patterns and COPD in US men Thorax 2007 62: 786-791

effective in lower income groups. Too few people in Salford eat enough fruit, vegetables and fish to maintain a healthy weight or to benefit from this diet's protective effect on lung function. Across the city on average, we eat about 3.1 portions of the recommended 5 portions of fruit and vegetables a day; nationally, the figure is about 3.5 portions. Like smoking, those living in more deprived areas will on average be eating less fruit and vegetables than people in more affluent areas. There are a variety of factors which can contribute to a lower consumption of fruit and vegetables including access to affordable produce, perception of cost and knowledge and confidence in cooking skills to prepare cost effective meals that incorporate plenty of vegetables and fruit that suit the whole family.

Occupational Exposures

Coal mining and welding have long been recognised as occupational risk factors for COPD. The legacy of an industrial past in Salford means that many members of the population will have been exposed to these risk factors. More recently biomass fuels, dusts, fumes and biological exposures have also been identified as risks. The exact relationship between the occupational exposure, smoking and genetic susceptibility has yet to be defined²⁴.

Air Quality

There is strong evidence on the association of air pollution with COPD. Pollutants are many in the environment and pollution can happen indoors and outdoors. Both types of pollution have been positively linked with the development of COPD^{25 26 27}. With its industrial past, many residents of Salford will have been exposed to air pollutants.

Deprivation

The prevalence of COPD is highest among people in lower socio-economic groups. Smoking rates are higher in these groups, but this may not be the sole causative factor.

Both low birth weight and serious lower respiratory illness in the first years of life are associated with a reduced lung function in adult life and may be independent risk factors for increased risk of COPD in adults. Maternal smoking has been extensively linked to both of these factors, as have poor housing and social deprivation²⁸.

High levels of deprivation in Salford mean that all of the issues discussed above will impact upon the prevalence of COPD.

²⁴ Matheson et al Biological dust exposure in the workplace is a risk factor for COPD *Thorax* 2005 60: 645-651

²⁵ Schikowski T, Sugiri D, Ranft U, Gehring U, Heinrich J, Wichmann HE, Kramer U: Long-term air pollution exposure and living close to busy roads are associated with COPD in women. *Respir Res* 2005, 6:152

²⁶ Osman *et al*, Indoor air quality in homes of patients with chronic obstructive pulmonary disease, *Am J Respir Crit Care Med*. 2007 Sep 1;176(5):465-72. Epub 2007 May 16

²⁷ Liu S *et al*, Biomass fuels are the probable risk factor for chronic obstructive pulmonary disease in rural South China, *Thorax*. 2007 Oct;62(10):889-97. Epub 2007 May 4

²⁸ Barker et al Relation of birth weight and childhood respiratory infection to adult lung function and death from COPD *BMJ* 1991 303: 671-5

Genetic Factors

A rare, but well recognised risk factor for COPD is the inherited deficiency of alpha-1-antitrypsin. This is a protective enzyme that counteracts the destructive action of other enzymes released in an attempt to protect the lung from, for example, cigarette smoke. Deficiency of alpha-1-antitrypsin is associated with the early development (between the ages of 20 and 40 years) of severe emphysema. This deficiency is thought to be indicated in around 1% of COPD cases²⁹ (this would equate to approximately 55 patients diagnosed with COPD in Salford).

4.7 The Patient and Carer Experience

The main points emerging from stakeholder meetings in Salford revealed that:

- People had chronic respiratory disease, with symptoms for many years before a diagnosis was made
- Although the majority were satisfied with the care and services they received from GP practices and community pharmacies, some could not access services when they needed them – or were confused about where they could go for help
- Many patients were attending hospital outpatient clinics
- The majority were satisfied with the care they received at outpatient clinics
- Although most had been given advice on self management, some said their GPs would not prescribe emergency prescriptions for exacerbations
- Although many were happy to adjust medication according to how they feel, a minority had written action plans
- A majority said that they had had to attend A&E departments with breathing problems
- Most people said that they had adequate support on discharge from hospital – many mentioned the COPD early supported discharge team (CAST)

Summary of Service User Views / Requirements

- **A greater understanding of their condition**
- **Better information, knowledge and skills to manage their condition**
- **Greater integration of services to avoid confusion and duplication**
- **Enhanced knowledge of healthcare professionals**
- **More multidisciplinary working**

²⁹ American Thoracic Society/European Respiratory Society Statement: Standards for the Diagnosis and Management of Individuals with Alpha-1 Antitrypsin Deficiency Am. J. Respir. Crit. Care Med. 168: 818-900

It seems that it will be important to develop and deliver services that are responsive to individual patient needs. This will include people who find it difficult to access healthcare services such as those with learning difficulties or mental health problems.

4.8 Communication Issues

Communication issues related to COPD are important. A recent British Lung Foundation survey revealed that many people with COPD misunderstand the most basic facts about their illness, including its name, what caused it and how it can be managed³⁰.

The survey shows that there are communication barriers between healthcare professionals and people with COPD in most aspects of diagnosis and treatment and that the substantial emotional and practical impact of COPD on the lives of patients and their families is being underestimated by those treating them. The survey shows that the disease is not being diagnosed, communicated, or managed well, with the result that many people with COPD are unaware that their condition will get progressively worse; that giving up smoking would slow the progression of the disease; and that there are ways to increase their day-to-day activity and control their breathing. The research also shows that there is a huge gap between doctors' priorities when managing the disease and patients' priorities when living with it. People with COPD focus on feeling unwell; on their ability to 'do' and on the emotional consequences of the disease; doctors focus on physical functions and measuring clinical symptoms. Whilst doctors recognise that people with COPD can be very negative about their condition, they often do not see low self-esteem as part of their remit.

Finally, the research shows that approximately one in four people had delayed going to their GP about their symptoms for as much as 10 years after first noticing them, betraying a lack of awareness of COPD amongst the general public and a reluctance to engage with healthcare professionals about smoking cessation.

Three key themes relating to communication emerged from this survey.

- 1) Improving awareness of COPD amongst the general public about what it is, its causes and its progression.
- 2) How people can improve their lives with COPD through treatment, lifestyle and outlook.
- 3) Support: what people need from family and health care professionals in terms of understanding, treatment and help.

4.9 Summary

COPD is a chronic disabling condition that causes great burden to patients, their families and health services. Prevalence in Salford is high and is known

³⁰ British Lung Foundation Lost in Translation. Bridging the communication gap in COPD. 2006

to be a significant underestimate of the true prevalence. Many people have exposure to one or more risk factors. COPD patients in Salford are 40% more likely to die of COPD than the national average and those living with COPD have a greatly reduced quality of life.

Based upon the aims of the strategy set out in chapter 3, the table below documents what factors will need to be considered when developing the Salford model of COPD care.

We will:	Factors for consideration:
Reduce the number of Salford people developing COPD	<ul style="list-style-type: none"> • Smoking • Diet • Occupational exposures / air quality
Ensure early and accurate diagnosis	<ul style="list-style-type: none"> • Awareness of COPD and its symptoms • Estimated 6000 patients undiagnosed • Many patients are only diagnosed when disease is advanced
Effectively treat and manage COPD to prevent deterioration	<ul style="list-style-type: none"> • Stopping smoking halts the progression of COPD • Extremes in temperature can cause exacerbations • Need for clinician and patient knowledge about COPD and how it can be managed • Self care • Influenza / pneumococcal vaccinations • Pharmacotherapy • Pulmonary rehabilitation
Manage and support patients with sever COPD to keep them well	<ul style="list-style-type: none"> • Social isolation and poor self esteem
Reduce inappropriate hospital admissions and emergency bed days	<ul style="list-style-type: none"> • Prevent exacerbations • Early treatment of exacerbations (self care) • COPD early supported discharge team is well received
Manage and support COPD patients at the end of life	<ul style="list-style-type: none"> • Minority of end stage COPD patients receive palliative and supportive care

These factors will be built into the Salford model of COPD care. Using the issues highlighted in this chapter as a guide, the next chapter will go on to look at evidence of best practice in COPD care and compare it with current practice in Salford, enabling gaps to be identified.

5. Evidence Base and the Current Situation

Chapter 5 will address the following:

- Primary Prevention of COPD
- Diagnosis of COPD
- Treatment and Management of Stable COPD
- Complex / Severe Disease
- Unscheduled Care
- End of Life Care
- Information
- Staff Training and Development

Evidence of best practice will be explored for each area and the current situation in Salford will be set out. Each section will conclude by highlighting work that will need to be sustained and gaps that have been identified through this review of current services as well as through a variety of consultation events with key stakeholders.

It should be noted that the commencement of the COPD Best Value Project in 2007 has resulted in much of the work that has already been undertaken to improve COPD services in Salford.

5.1 Primary Prevention of COPD

Primary prevention refers to preventing the onset of disease, e.g. making changes in the environment or beneficial changes in individuals' behaviour. Reducing the risk of COPD and associated premature death, illness or disability, requires co-ordinated preventative action. "Securing Good Health for the Whole Population"³¹ focussed on prevention, the wider determinants of health and the reduction in inequalities. It highlighted that individuals are ultimately responsible for their own health. It is recognised that most long term conditions have similar causes. Concerted and coordinated action on the areas of tobacco control, diet and physical activity would have wide ranging effects in improving health.

The key elements of primary prevention in COPD are:

- Lifestyle changes
- Air quality

The evidence and current position in Salford for each of these elements is discussed in the sections below.

³¹ Wanless D Securing good health for the whole population, Final Report 2004 HM Treasury

5.1.1 Lifestyle Changes

By tackling smoking, diet and levels of physical activity, prevalence of COPD can be reduced.

Smoking

The GOLD Guidelines³² for the diagnosis, management and prevention of COPD state that smoking cessation is the single most effective – and cost-effective – intervention to reduce the risk of developing COPD.

Bridging the Gap (BTG)³³, a report by the Respiratory Alliance, is clear that smoking cessation services are vital to primary and secondary prevention of COPD and states that every practice and PCT should have a coherent and implemented policy on smoking cessation. It goes on to say that all smokers should receive brief, non-confrontational and non-judgemental advice from all healthcare professionals at all consultations. For those committed to quitting, there must be access to an appropriately trained healthcare professional, with the time and resources to undertake effective support during smoking cessation.

It must also be remembered that cessation is one part of a bigger picture – if we do not effectively prevent people starting smoking, quit rates will have no impact. Preventing the uptake of smoking by young people is very complex and epidemiological research has found that adult cessation is key.

It is estimated that 30% of adults in Salford smoke. This is much higher than national adult smoking prevalence of 22%. The Salford Tobacco Control Strategy 2006-2010 sets out a multi-agency approach to significantly improving health and reducing health inequalities in the longer term by reducing the incidence of smoking related diseases in Salford. Four strategic priorities set out are:

- Reducing Uptake of Smoking
- Smoking Cessation
- Reducing Exposure to Secondhand Smoke
- Publicity and Marketing

The dedicated Stop Smoking Service across Salford and Trafford has been identified as an example of good practice in the region. A wide variety of staff have been trained at basic and intermediate level to promote and support smoking cessation across the city. A small Specialist Adviser Team provides support to individuals who require more intensive help to make behavioural change and who often have a range of complex physical health, mental health and social problems.

However, despite the good work of the smoking cessation team, they only see around 5000 patients per year (a small percentage of smokers in Salford). Clearly, more needs to be done to encourage smokers to access the service.

³² Gold guidelines, Am J Respir Crit Care Med Vol 176. pp 532–555, 2007

³³ Respiratory Alliance Bridging The Gap 2003

One way of doing this will be to offer more smoking cessation in the community (it is currently very NHS / primary care focused). Advertising the service will also be key.

Diet and Physical Activity

Taking exercise and eating a healthy diet are thought to be important in the prevention of the development of respiratory diseases including COPD. Therefore, NHS organisations need to ensure that people are encouraged to keep active and to eat a diet rich in antioxidants (found in abundance in fruit and vegetables) in order to maintain healthy lungs.

Exercise and a healthy diet will prevent people becoming obese. According to QOF, the reported prevalence of obesity reported for Salford PCT in March 2008 was 11.35%. This is compared to a national prevalence of 7.53%. Both figures are thought to be a significant underestimate of true levels of obesity.

The Salford Health Inequalities Strategy identifies Food and Drink and Physical Activity as two priority areas for action in the city. A multi-agency group - Salford Food and Physical Activity Partnership - has been established and has developed city wide strategies aimed at addressing rising levels of obesity. It aims to improve food and nutrition, and increase physical activity levels, particularly in groups that are harder to reach.

Each locality in Salford has a team of staff lead by the Neighborhood Managers and the Health Improvement Officer who provide activities addressing healthy eating. Activities range from cook and eat, food label advice sessions to intergeneration events. Additionally, Salford's 5 A DAY scheme aims to increase consumption of fresh fruit and vegetables rich in antioxidants which are essential for lung health.

In terms of physical activity, the community health trainer project is making progress in supporting individuals to make healthy lifestyle choices by employing local people to work with local communities.

Salford Community Leisure currently provides an exercise on referral scheme. Other schemes include Passport for Leisure and Healthy Walks. These schemes include monitoring of health outcomes, especially in neighbourhoods where health is poor.

In addition, a Salford Obesity Strategy is in development. This will look at ways of reducing levels of obesity in Salford.

5.1.2 Air Quality

Good air quality is vital to good health and quality of life. There is evidence to show that high concentrations of air pollutants in the atmosphere can exacerbate the symptoms of those suffering from asthma, heart disease and other respiratory disorders, including COPD.

The *Investing for Health Strategy*³⁴ recognises the need to meet air quality standards as a crucial factor in any attempt to improve public health. One of the key targets of the strategy is to reduce levels of respiratory and heart disease by meeting the health-based objectives for the main air pollutants.

In 1997, an Air Quality Strategy for the United Kingdom (AQS) was published³⁵. It described how improvements in air quality were to be achieved by setting out a framework within which air quality policies were to be taken forward in the short to medium term.

Much of the action to deliver the AQS will fall within a framework of Local Air Quality Management (LAQM) involving the review and assessment by district councils of air quality in their areas and the production of local air quality management action plans for making improvements in any areas where the level of pollution exceeds targets. In Salford, nitrogen dioxide is the only pollutant exceeding current national air quality objectives and an action plan is in place to ensure that this is addressed. Actions include addressing travel and public transport issues and the planting of trees.

5.1.3 Primary Prevention – Gaps and Work to Sustain

Primary Prevention	Gaps
Lifestyle changes	<ul style="list-style-type: none"> • Only a small percentage of smokers access smoking cessation services
Lifestyle Changes	<ul style="list-style-type: none"> • There is no strategy to coordinate the approach to tackling the high levels of obesity in Salford
	Work to sustain
Lifestyle Changes	<ul style="list-style-type: none"> • Working towards the objectives of the Salford Tobacco Control Strategy to reduce the prevalence of smoking
Air Quality	<ul style="list-style-type: none"> • Continue to implement the action plan to reduce levels of nitrogen dioxide

³⁴ Investing for Health, Department of Health, Social Services & Public Safety 2002

³⁵ The United Kingdom National Air Quality Strategy, Department of the Environment, Scottish Office, March 1997

5.2 Diagnosis of COPD

The NSF for LTCs and national/international guidelines for COPD state that early diagnosis is key to optimising outcomes for patients, maintaining quality of life and reducing disability.

5.2.1 Raising Awareness

If people know about the signs and symptoms of COPD, they may present earlier for help and information which would aid early diagnosis. It is known that awareness of COPD amongst the general population is low. A British Thoracic Society consortium survey³⁶ revealed that:

- Two thirds had never heard of COPD
- 1 in 5 smokers suffer from persistent cough but were unaware it could indicate COPD
- 6 in 10 smokers had experienced at least one symptom of COPD, yet fewer than half of these had seen their GP
- 3 in 5 did not think smokers were at greater risk of COPD

Therefore, it is desirable to ensure that awareness of COPD is raised and that at risk patients are encouraged to visit their GP for assessment. 'It's Our Health'³⁷ recommends that social marketing should be used in the development and implementation of all government led attempts to promote positive health-related behaviour. They define health-related social marketing as 'the systematic application of marketing concepts and techniques, to achieve specific behavioural goals to improve health and reduce health inequalities'. There is evidence to show that social marketing can be effective in encouraging people to access health services. A social marketing campaign was held in Scotland to encourage at risk groups to go to the doctor earlier if they had signs and symptoms of mouth cancer:

- There was a 185% increase in the number of suspicious lesions that were referred to Glasgow Dental Hospital.
- Almost 70% of those who went for mouth cancer treatment were the direct result of the campaign.

In 2006/7 Salford PCT worked in collaboration with PBC commissioners and the Salford Asthma and Respiratory Team (SART) to develop the Salford COPD Winter Plan. The plan recognised the need to increase awareness of COPD across the city. In early 2008, an awareness campaign was launched that highlighted the symptoms of COPD and encouraged those who were symptomatic to visit their GPs to be screened.

³⁶ British Thoracic Society Mori Poll Results 2005

³⁷ National Social Marketing Centre, 2006, It's Our Health! Realising the Potential of Effective Social Marketing.

5.2.2 Screening High Risk Patients

There is evidence to support case finding via screening of people at high risk of developing COPD. As lung function declines with age, and is accelerated by smoking, targeting older, current or ex smokers should be a priority. Most patients with COPD will present with symptoms and/or signs to primary care professionals prior to diagnosis. National Institute for Health and Clinical Excellence (NICE) guidelines suggest that a diagnosis of COPD should be considered in patients over the age of 35 who have a risk factor (generally smoking) and who present with exertional breathlessness, chronic cough, regular sputum production, frequent winter 'bronchitis' or wheeze. The suspected diagnosis should be confirmed by quality assured spirometry.

To aid early diagnosis, a two year pilot research project has begun to screen populations in the most deprived areas of Salford (Lower Broughton and Little Hulton).

Few practices currently screen smokers for respiratory disease and the recorded prevalence of COPD in Salford is much lower than expected in all but 4 practices. Stakeholders have identified that:

- Many patients with COPD are diagnosed only when the disease has progressed to the moderate or severe forms
- Many patients with a smoking history who suffer repeated chest infections with sputum production are still treated with repeated courses of antibiotics and not investigated further for any underlying pathology
- Many patients attending the Stop Smoking Service have reported encountering judgemental attitudes from clinicians about their smoking. This has often caused both a delay in consulting the GP at an earlier stage about their respiratory symptoms and a delay in seeking help to stop smoking.



5.2.3 Facilitating Diagnosis

Once a diagnosis of COPD is made the severity of the patient's disease should be identified from the spirometry and recorded on the General Practice COPD register in order to guide ongoing treatment and management. In patients where there is diagnostic difficulty, advice should be sought from a specialist. Specific referral pathways are therefore needed³⁸.

According to QOF 2006/7, 92% of Salford's COPD patients have had their diagnosis confirmed by lung function. Although the vast majority of practices have access to spirometry, the quality of equipment and accuracy of recordings is unknown. This also means diagnoses may not always be accurate. This hypothesis seems to be supported by the fact that 10% of patients on Salford COPD registers have lung function greater than would be expected in COPD and 13% are recorded as non smokers.

According to data from QOF, all practices in Salford have a COPD register. The COPD winter plan included the requirement for practices to stratify their COPD populations into mild, moderate and severe disease according to NICE guidelines. Baseline data shows that 35 practices have begun to stratify their COPD registers.

At present, there are no standardised referral pathways for specialist diagnostic support in Salford. In early 2008, community COPD clinics were established to provide primary care access to specialist advice and a pathway to advanced diagnostics.

5.2.4 Diagnosis – Gaps

Diagnosis	Gaps
Raising Awareness	<ul style="list-style-type: none">• Lack of knowledge amongst patients about early signs and symptoms of COPD• There is no programme of social marketing
Screening	<ul style="list-style-type: none">• Little COPD screening takes place at practice level in Salford• There is no pan Salford service to diagnose COPD in the community
Facilitating Diagnosis	<ul style="list-style-type: none">• Spirometry is not always used and interpreted accurately• Not all practices have stratified their COPD registers• No referral pathways to access specialist support when diagnosis is proving difficult

³⁸ BTS statement on criteria for specialist referral, admission, discharge and follow-up for adults with respiratory disease *Thorax* 2008;**63**(Supplement 1):i1-i16

5.3 Treatment and Management in Stable COPD

The majority of patients with stable COPD can be effectively managed within General Practice. National and international evidence based guidelines underpin pharmacological treatment and safe, high quality care. The aims of treatment and management are to prevent decline, reduce disability and optimise quality of life. GOLD guidance states that careful monitoring of drug therapy is needed over an appropriate period to ensure that the specific aim of introducing a therapy has been met without an unacceptable cost to the patient.

Salford, through SART, has developed its own treatment guideline based on NICE which has been disseminated across Salford. Little is known of the usefulness or impact of this guideline.

A computerised template and audit programme for guiding treatment and management in COPD (POINTS) was implemented in 2007 in all practices across Salford whose IT system was compatible. 37 practices (representing approximately 70% of COPD patients in the city) currently use POINTS.

POINTS data (that is updated quarterly) suggests that not all patients are receiving optimal pharmacotherapy. In 2007, the pharmacy contract incentivised community pharmacists to provide a medication review service. This has been widely implemented across Salford. Additionally, a pilot medication review project for patients with COPD is in development.

Alongside pharmacotherapy, key elements of high quality COPD care include smoking cessation, vaccination, self care and pulmonary rehabilitation. Information and support for carers is also vital.

5.3.1 Smoking Cessation

Stopping smoking reduces mortality rates and slows the rate of lung function decline^{39 40}. The COPD NICE Guidance clearly states that encouraging patients with COPD to stop smoking is one of the most important components of their management. It goes on to say that all COPD patients still smoking (regardless of age) should be encouraged to stop and offered help to do so at every opportunity.

41% of Salford's COPD population are current smokers, but not all have been offered smoking cessation advice in the past 15 months despite almost all practices having access to smoking cessation.

³⁹ Murray RP, Anthonisen NR, Connett JE, et al for the Lung Health Study Research Group. Effects of multiple attempts to quit smoking and relapses to smoking on pulmonary function. *J Clin Epidemiol* 1998;51:1317–26.

⁴⁰ Anthonisen NR, Skeans MA, Wise RA, Manfreda J, Kanner RE, Connett JE; for the Lung Health Study Research Group. The effects of a smoking cessation intervention on 14.5-year mortality: a randomized clinical trial. *Ann Intern Med* 2005;142:233–239.

5.3.2 Vaccination

Recurrent respiratory tract infections have negative impact on lung function in COPD patients. Not all of these infections are preventable, but for some there are effective vaccines. Health care professionals should continue to promote and monitor uptake of recognised immunisation programmes, ensuring that influenza and pneumococcal immunisations are available to at risk groups.

In Salford there has been steady progress in increasing uptake of influenza and pneumococcal vaccination. In 2007/8 73.8% of the over 65s and 44.6% of the at risk population received influenza vaccination. 72.3% of the over 65s (38/55 practices) received pneumococcal vaccination. Data regarding uptake of the pneumococcal vaccination in at risk populations is not currently collected.

5.3.3 Self Care

Very often patients with chronic respiratory disease understand their disease better than the health and social care professionals who undertake long-term follow-up. Providing the knowledge to patients and their carers to empower them to manage their condition and take control of their lives makes sense for individual care and for the health service.

Improving health outcomes for people with respiratory disease not only requires appropriate medical interventions but also enhanced communication, knowledge, skills, and the development of a therapeutic alliance between the patients and the healthcare professional. The GOLD Guidelines state that patient education "...can help improve skills, ability to cope with illness, and health status."

A variety of methods can be used to provide information to enhance self management. The method(s) chosen should give due consideration to the specific requirements of the individual, taking account of the need to promote equality of access to information and care. All primary care professionals are well placed to provide advice and support to enable people to manage COPD.

A recent review assessed the effects of self-management education in COPD and found that self-management reduces hospital admissions. However, because of wide variety of interventions, study populations, follow-up time, and outcome measures, data are still insufficient to formulate clear recommendations regarding the exact form and content of self-management education programmes and the format of written individualised action plans in COPD¹⁴.

In Salford, stakeholders have highlighted that we should always aim to support and encourage self-management. A model for self-care that will cover a wide spectrum of conditions is currently being developed. A generic Expert Patient Programme is available to those with LTCs, including COPD. Evaluation of the impact on COPD patients in particular has not been undertaken.

A Salford COPD self management action plan has been developed and disseminated in paper and electronic format across general practice and is widely adopted for use with patients.

5.3.4 Anticipatory Care

Preventing exacerbations of COPD is difficult. Optimising drug therapy, encouraging regular exercise, healthy eating and promoting vaccination (all discussed above) are important factors.

The Department of Health requires all NHS Trusts to develop winter plans and heatwave plans which aim to protect vulnerable individuals (including COPD patients) from the health effects of a rise or fall in temperature.

Reducing the number and impact of exacerbations through a system of forecasting changes in air quality and informing patients with COPD of those changes has recently been developed by the Met Office. Despite a lack of research evidence, initial evaluations suggest that implementation of this system leads to a reduction in exacerbations and hospitalisations⁴¹.

Salford PCT develops annual winter and heatwave plans. For the last two winters, the Salford Asthma and Respiratory Team have sent out guidance to GPs to help prevent exacerbations of COPD. The heatwave plan does not make specific reference to keeping COPD patients well and out of hospital.

The Met Office project is currently being piloted in Salford and will be subject to evaluation by the Strategic Health Authority.

5.3.5 Pulmonary Rehabilitation

Improving exercise tolerance can have a sustained positive effect on patient quality of life and ability to carry out daily activities, as well as reducing health service utilisation. The benefits of pulmonary rehabilitation are:

- Improved health related quality of life
- Improved functional and maximal exercise capacity – leading to greater mobility and productivity
- Reduced breathlessness
- Reduced length of hospital stay
- Reduced exacerbations
- Improved patient knowledge and ability to participate in self care

NICE guidelines for the care of people with COPD highlighted the importance of pulmonary rehabilitation as highly cost effective in improving patients' quality of life. The NSF for COPD expected in 2008 will also focus on the adequate provision of pulmonary rehabilitation. As local and national data suggests that transport and access are key reasons for patients' non participation, a community service is essential. Intensive rehabilitation in the home will also be needed for a small proportion of individuals.

⁴¹ Met Office Health Forecasting for COPD 2006

Salford already has a pulmonary rehabilitation service which patients say has greatly improved their quality of life. It is jointly funded by the PCT and SRFT and is provided by 0.5 WTE respiratory nurse specialist (RNS) and 0.5 WTE physiotherapy. The service does not have the capacity to meet the current or predicted future needs of COPD patients. The current service capacity is for 300 patients with a wait time of up to 14 weeks from referral. NICE commissioning guidance⁴² suggests that expansion to provide a minimum of 900 places a year is needed. The major venue is currently SRFT where parking is increasingly difficult. Community sessions have been delivered previously, but these were funded from charitable monies which expired in December 2007.

Consensus of the stakeholders consulted was that pulmonary rehabilitation is good and needs to be expanded. Issues raised included:

- More is needed in the community and patients want a longer programme
- Transport and access are issues
- Waiting list for rehab – capacity needs to be expanded



5.3.6 Support for Carers

The burden of COPD has enormous consequences for the families of sick patients who for the large part find themselves taking on the role of the prime, unpaid care provider. The term carer has come to apply to a person providing care for someone at home, usually a family member but sometimes extending to friends or neighbours. They have a demanding role despite the fact that few have had any training. The cost to carers themselves in terms of isolation, depression, lack of income and social support can be significant. The shift of care into the community has meant that supported care within the family is an integral and desirable aspect of this community service.

A recent report identified that carers need to be well informed through clear and accessible information⁴³. Self-help groups can be helpful to both sufferers

⁴² NICE 2006 Commissioning a Pulmonary Rehabilitation Services for patients with COPD

⁴³ Burrows J (2007) Breathing Space Programme Evaluation

and carers. The British Lung Foundation's 'Breathe Easy' group for example supplies its members with information and can provide invaluable psychological support encouraging members to stay active.

In Salford, the needs of the carers of those with COPD have not been formally evaluated. There is an active Breathe Easy group and three post pulmonary rehabilitation groups which provide support to patients and carers. Carers are also invited to attend pulmonary rehabilitation and expert patient classes to increase their knowledge of COPD. There is also an active generic carers group who provide support to a wide range of people with caring duties.

5.3.7 Treatment and Management – Gaps and Work to Sustain

Treatment and Management	Gaps
Treatment Guidelines	<ul style="list-style-type: none"> • No information on adherence to local treatment guidelines or their usefulness to clinicians
Pharmacotherapy	<ul style="list-style-type: none"> • Not all patients are receiving optimal pharmacotherapy • No permanent service for COPD patients to have their medications reviewed outside of general practice
Smoking Cessation	<ul style="list-style-type: none"> • Not all of Salford's COPD population has been offered smoking cessation advice in the past 15 months
Vaccination	<ul style="list-style-type: none"> • Full coverage of targeted groups for flu and pneumococcal vaccination has not been realised
Self Care	<ul style="list-style-type: none"> • The Salford model of self care is still in development • No information regarding the impact of existing self care programmes upon COPD patients
Anticipatory Care	<ul style="list-style-type: none"> • There is no permanent service to help keep COPD patients well and out of hospital at times of increased risk
Pulmonary Rehabilitation	<ul style="list-style-type: none"> • Insufficient capacity to meet current and projected needs
Support for Carers	<ul style="list-style-type: none"> • There is no structured package of support for carers
	Work to Sustain
Self Care	<ul style="list-style-type: none"> • The use of COPD self-management plans in general practice
Anticipatory Care	<ul style="list-style-type: none"> • The SART COPD winter plan

Initial patient and carer interviews

5.4 Complex / Severe Disease

As discussed in section 4.4, there is strong evidence to suggest that those with more severe COPD carry the greatest burden and have the highest impact on NHS service provision. This section will discuss the initiatives and interventions that are aimed at reducing the impact and improving outcomes for patients with severe COPD or COPD with complex co-morbidities.

5.4.1 Active Case Management

Active case management (ACM) is a fairly new concept for delivering care in the UK. The aim is to optimise primary care for people with complex health needs by anticipating predictable deteriorations in their condition, rather than providing a reactive service once the person has become unwell. Emphasis is placed on educating service users and their carers, enabling them to better manage health problems and maintain their independence. The most intensive users of services are assigned a community matron who will adopt a case management approach and act as a coordinator for an individual's total care package.

Key stakeholders in Salford have identified a number of issues surrounding ACM:

- The case management approach needs to be more widely understood and adopted
- The case management approach is still in its infancy in Salford
- Patients should have a named co-ordinator of care
- There needs to be better integration of services and skills
- ACM should work closely with specialist palliative care services

In Salford, the generic case management service is currently being redesigned with the initial aim of managing high intensity users with complex co-morbidities. This will be the subject of ongoing evaluation. Additionally, specialist respiratory nurses and physiotherapists case manage patients with severe COPD. It is envisaged that using evidence based tools such as "The Combined Model" the COPD population will be stratified and all patients with severe disease or complex co-morbidity will be assigned a single case manager.

5.4.2 Telehealth

Distant monitoring systems are one way in which patients can be empowered in the management of their disease whilst providing them with appropriate medical support. These technologies have the potential to provide patients with independence and to free up resources such as clinic time and inpatient beds.

The potential benefits of telehealth in COPD have not been widely investigated. However, the most effective measure for identifying an exacerbation of COPD is change in symptoms. Patients have been shown to be poor at recognising all exacerbations even when filling out a daily diary card, so supervision of diary card results and appropriate intervention has the potential to identify exacerbations that would otherwise go undetected or

would not be treated promptly⁴⁴. Telehealth has the potential to support patients in self management by guiding them to promptly recognise deterioration and take appropriate action.

Such systems will only be effective and safe with appropriate support from health care professionals and should be viewed as an addition to current practice in the first instance. However in some areas, there is evidence to show that such interventions may further improve patient care and reduce disease burden and health care utilisation.

In Salford, a pilot project using telehealth to support case managers to manage complex patients with COPD was initiated in 2007. A randomised control trial (RCT) will follow in 2008. The impact of effectiveness and acceptability to patients will form part of a detailed evaluation.

5.4.3 Community Specialist Clinics

Integrated care for COPD is a relatively new concept and therefore there is little data to support community innovations. However, instigation of community specialist teams in the UK have reported reductions in unscheduled hospital admissions⁴⁵. Additionally, where community clinics are available, out patient referrals and follow ups have been reduced⁴⁶. This has the effect of making care more convenient and closer to home for patients. Providing care outside of the hospital also brings costs down.

Salford patients with COPD who need specialist input due to complexity or severity have traditionally been referred to secondary care specialist clinics based mainly in hospital. Referred patients had to travel to the hospital which may have been several miles away. This could be inconvenient and rather a stressful experience.

Community specialist COPD clinics that offer specialist input within primary care, with easy access for patients, were instigated across the city in early 2008 and will enable access to advanced diagnostics and therapies.

5.3.4 Physiotherapy Services

Physiotherapy has an important place in the management of COPD. The evidence for benefit from early rehabilitation during or soon after exacerbations is growing. Additionally, breathing control and sputum clearance techniques have been shown to improve symptoms and improve outcomes¹.

In Salford, access to community respiratory physiotherapy for such interventions is very limited. At present, physiotherapy services commissioned by the PCT deliver both community services and an in-reach service to SRFT. Either redesign or expansion of service would be needed to increase

⁴⁴ Garland et al Remote daily real time monitoring of symptoms in patients with copd: mobile technology and exacerbations (motex) study Thorax 2007 62 Suppl 3

⁴⁵ Perrott S et al Can integrated respiratory team spanning primary and secondary care can reduce hospital admissions and gp consultations for COPD Thorax 2007 62 Suppl 3

⁴⁶ Gaduzo et al Thorax 2006 Dec

community accessibility. The integrated respiratory team are currently undertaking a six month evaluation of the usefulness and impact of a community respiratory physiotherapist.

5.4.5 Psychological Therapies

There is strong evidence that the psychological impact of COPD increases as disease becomes more severe. Significant levels of anxiety and depression are 2.5 times more likely in people with severe COPD compared to those with mild disease. In people with COPD, anxiety and depression increases the risk and frequency of admissions and re-admission to hospital and increase length of stay. Reducing anxiety and depression can reduce the frequency of hospital admission and the need for other unscheduled health care contacts¹.

The presence of anxiety and depression in patients with COPD is under-recognised yet can be identified using validated assessment tools. Patients found to be depressed or anxious should be treated with conventional pharmacotherapy. Psychological therapies appear to be equally effective as pharmacological treatment. COPD patients should be provided with a range of therapeutic options so that the patient's choices individualises the therapy for the patient.

Historically there has been minimal access to psychological support for patients with COPD in Salford. However, Salford PCT has invested considerably in its primary care mental health strategy and over the last 18 months has been working to redesign services. Contact has been made to explore the potential of support for COPD patients. The PCT has recently been chosen to take forward the Improving Access to Psychological Therapies programme which aims to improve low intensity therapy (for milder mental health problems) and high intensity therapy (for more complex mental health problems). The principal focus is treatment of depression and anxiety. Funding will be used to train and employ extra therapists and the PCT will be able to improve access and reduce the time people wait to see a therapist.

5.4.6 Oxygen Therapy

As COPD progresses, patients can become chronically hypoxaemic (low levels of oxygen in the blood). In the longer term this causes further deterioration through increased strain on the heart and fluid retention, worsening symptoms and quality of life. Some patients also become transiently hypoxaemic on exercise, but there is little evidence that this leads to further deterioration or long term damage.

For patients with chronic hypoxaemia, Long Term Oxygen Therapy (LTOT) can slow deterioration in the patient's condition, improve symptoms, disability and quality of life. For the few patients who continue to be active despite their hypoxaemia, ambulatory oxygen is beneficial. There is little evidence to support the use of oxygen therapy to improve exercise capacity or to reduce disability in non hypoxaemic patients.

Since a change in the provision of home oxygen in 2006, the cost of home oxygen prescribing across Salford has risen significantly. Additionally, the

provision of oxygen to patients without assessment of their need continues to rise and more expensive modalities are being issued. Approximately 60-70 patients a year in Salford get assessed for their suitability for oxygen therapy. Up to the end of 2007, patients were admitted to the medical investigation unit (MIU) for overnight assessments. Following a recent audit which suggested that overnight assessments were not needed for a significant proportion of patients, the assessment protocol has been updated to include a 4 hour assessment.

Stakeholders have identified that inappropriate prescribing by GPs and application of oxygen is a problem. In July of 2007, the PCT recognised the financial and clinical risks of unchecked oxygen prescribing and developed a community home oxygen therapy service (HOTS). Once in operation, the HOTS service will assess all new and existing patients for their oxygen needs and provide ongoing follow up and support. The HOTS service will be operational in Salford by July 2008.

5.4.7 Non-Invasive Ventilation

Non-Invasive Ventilation (NIV) is a recognised method to support the breathing in a selected group of patients with COPD who constantly show raised levels of carbon dioxide in their blood⁴⁷. NIV is the treatment of choice for persistent hypercapnic ventilatory failure during exacerbations not responding to drug treatments. NIV is also used to support the use of oxygen therapy longer term in some patients with low oxygen and high carbon dioxide levels.⁴⁸

It is estimated that around 30 patients in Salford would benefit from NIV. Although NIV is available in Salford in secondary care for treatment of acute exacerbations, patients with chronic ventilatory needs are referred to Wythenshawe Hospital (the tertiary NIV centre). However, the current criteria exclude COPD patients.

5.4.8 Surgical Treatment for COPD

For some patients with COPD, surgery is an appropriate option. Patients with some types of emphysema may benefit from bullectomy which is a surgical treatment to improve symptoms and exercise tolerance. Patients will need thorough assessment for suitability for this intervention⁴⁹. In a highly selected group of patients with emphysema mainly affecting the top parts of the lung, lung volume reduction surgery may be beneficial⁵⁰. Traditional invasive

47 Wijkstra PJ. Non-invasive positive pressure ventilation (NIPPV) in stable patients with chronic obstructive pulmonary disease (COPD). *Respir Med.* 2003 Oct;97(10):1086-93. Review.

48 Clinical indications for noninvasive positive pressure ventilation in chronic respiratory failure due to restrictive lung disease, COPD, and nocturnal hypoventilation consensus conference report. *Chest* 1999;116:521-534.

49 Mehran RJ, Deslauriers J. Indications for surgery and patient work-up for bullectomy. *Chest Surg Clin N Am* 1995;5:717-734.

50 Naunheim KS. et al. Long-term follow-up of patients receiving lung-volume-reduction surgery versus medical therapy for severe emphysema by the National Emphysema Treatment Trial Research Group. *Ann Thorac Surg* 2006;82:431-443.

approaches carry high mortality risk; however research is underway to explore the effects of less invasive methods.

Lung transplantation can be offered to patients with very advanced disease who meet strict criteria of suitability. If successful, it improves quality of life and physical function. Patients have to be referred to a specialist transplant centre and undergo extensive testing to ensure donated lungs are offered to appropriate patients. Unfortunately, not all patients accepted for transplant eventually get it due to the limited number of matched lungs available.

Salford patients who may be suitable for surgery are assessed by one of the Consultant Respiratory Physicians and referred on to external specialist centres.

5.4.9 Complex / Severe Disease - Gaps and Work to Sustain

Complex / Severe Disease	Gaps
Active Case Management	<ul style="list-style-type: none"> • The case management approach is not widely understood and in particular the benefits for COPD patients • COPD patients who may benefit from case management are currently not receiving it
Telehealth	<ul style="list-style-type: none"> • Telehealth services are not widely available to those who could benefit from it • Full impact and potential of telehealth opportunities are not yet known
Physiotherapy	<ul style="list-style-type: none"> • Insufficient capacity to meet current and anticipated need for COPD patients
Psychology	<ul style="list-style-type: none"> • Not all eligible COPD patients have access to psychological therapies
Oxygen Therapy	<ul style="list-style-type: none"> • Oxygen is currently being prescribed inappropriately
Non Invasive Ventilation	<ul style="list-style-type: none"> • COPD patients with chronic ventilatory needs do not have access to NIV
	Work to Sustain
Community Specialist Clinics	<ul style="list-style-type: none"> • Running of the COPD community clinics
Surgical Treatment	<ul style="list-style-type: none"> • Referral of suitable patients for surgery

5.6 Unscheduled Care

As explored in section 4.5, patients with COPD experience exacerbations of their condition which necessitate unscheduled care episodes. This section discusses the options for unscheduled care during exacerbations.

5.5.1 Hospital Admission

There is clear rationale for the need for hospital admission in exacerbations of COPD, including:

- Marked increase in intensity of symptoms, such as sudden development of resting dyspnoea
- Severe background COPD
- Onset of new physical signs (e.g. cyanosis, peripheral oedema)
- Failure of exacerbation to respond to initial medical management
- Significant co morbidities
- Newly occurring arrhythmias
- Diagnostic uncertainty
- Older age
- Insufficient home support

Transfer to hospital in respiratory emergencies such as severe exacerbation of COPD is likely to be by ambulance. Across the UK, a major difficulty has been highlighted – high flow oxygen is usually given to all breathless patients in emergency situations. However, many COPD patients with more severe disease cannot tolerate this therapy and it worsens their condition, causing respiratory failure. Guidelines for the use of oxygen in emergency situations are due for publication in mid 2008: this may alleviate this situation.

Once patients reach hospital, national guidelines provide evidence based management strategies for the treatment and management of patients in acute settings. There is clear evidence to support better outcomes for patients managed by a respiratory specialist.

Providing intensive behavioural smoking cessation support in the hospital helps to prevent future re-admissions:

- COPD patients who continue to smoke have higher rates of exacerbations and therefore, hospital admissions
- COPD patients have high levels of anxiety and depression, which requires considerable behavioural support to help them stop smoking (more than can be provided by Practice Nurses in Primary Care)
- For COPD, specialist smoking cessation advice should be available to patients as part of NICE guidance on the management of the illness

The North West Ambulance Service (NWAS) is able to respond to 82% of Category A (high priority emergency) calls within Salford in 8 minutes. Expert clinicians from Salford have contributed significantly to the national guidelines

on the use of oxygen in emergency situations and have already taken steps to improve the situation. The Salford Respiratory Team have developed oxygen alert cards for those patients who are known to be oxygen sensitive.

In Salford, patients are assessed and treated according to evidence based proforma for COPD exacerbation. A decision is then made to admit or discharge. Patients awaiting results remain in the emergency clinical decision unit (ECDU). Those admitted are transferred to the medical assessment unit (MAU), high dependency unit (HDU) or intensive care unit (ICU) as necessary. It is estimated that only 50% of COPD patients with an acute exacerbation of COPD are admitted or transferred to the care of a respiratory physician.

Stakeholders have identified that there is a need for a clear and robust pathway for the management of respiratory disease in secondary care.

Regarding stop smoking advice, the Hospital-Based Stop Smoking Service at SRFT has consisted of one full time specialist adviser for the past 4 years with an active caseload of 50-60 patients at any one time (which is too high for the level of support required, 30-40 is more realistic). Neighbourhood renewal funding in 2006-07 enabled the recruitment of a second full time hospital adviser, however funding for this post will run out at the end of 2008/9. Quit rates for the specialist service are significantly higher than the local average despite their difficult case load.

5.5.2 Intermediate Care

Intermediate care has been seen as a way of overcoming the loss of independence and disruption of informal and formal patterns of support in the community that can occur on admission to hospital. In the late 1990s, home care services to manage exacerbations of COPD were introduced in the UK, largely as a way of reducing the strain on the NHS resources caused by the number of patients admitted during the winter months. It is now well recognised that some patients with exacerbations of COPD can be managed safely at home⁵¹.

COPD NICE guidance states that hospital-based rapid assessment units and early discharge schemes for patients with exacerbations of COPD are safe and effective.

Rapid assessment units aim to identify those patients that can safely be managed at home with additional nursing and medical input rather than being admitted⁵². Rapid assessment units generally involve a full assessment of the patient at the hospital by a multidisciplinary team and discharge to the community with appropriate support.

⁵¹ Intermediate care—Hospital-at-home in chronic obstructive pulmonary disease: British Thoracic Society guideline. *Thorax* 2007; **62**: 200–10

⁵² Gravil JH, Al Rawas OA, Cotton MM, Flanigan U, Irwin A, Stevenson RD. Home treatment of exacerbations of chronic obstructive pulmonary disease by an acute respiratory assessment service. *Lancet* 1998;**351**:1853-5.

Early discharge schemes aim to facilitate the early discharge of patients admitted with an exacerbation of COPD⁵³ by identifying patients in hospital who could be discharged before they have fully recovered by providing increased support in their homes.

Intermediate care services in Salford are undergoing review and redesign. A key development has been the introduction of a generic admission avoidance scheme which includes support for patients with milder exacerbations of COPD who can be treated at home but need some social support during the period of their illness. Evaluation of this pilot scheme will inform future developments.

The COPD supported discharge team (CAST) focuses on early supported discharge. It is managed by intermediate care and consists of 1.0 WTE physiotherapist, 2.0 WTE respiratory nurse specialists (RNS) and 1.0 WTE assistant practitioner. CAST visit A&E, ECDU and MAU twice daily, Monday to Friday and patients are taken home as soon as possible (according to evidence based criteria). In line with national figures, approximately 1 in 3 patients screened are eligible for early supported discharge. CAST review patients daily up to day 6 for suitability for discharge with support. Patients unsuitable for CAST are usually reviewed by RNSs whilst inpatients, or are followed up as outpatients.

5.5.3 Pathways Post Admission

There is little evidence of when, where and by whom follow up care should be given. The evidence of benefit to patients of community follow up care – based on reducing the rate of hospital admission - is limited⁵⁴. A recent randomised control trial demonstrated that even when provided by experienced respiratory nurses, follow on care did not affect the number of exacerbations or hospital admissions. Follow up did however, improve patients' self-management, reduce mortality and reduce unscheduled contact with primary care physicians⁵⁵.

In Salford, all patients admitted to hospital with exacerbations (and referred to RNS) are reviewed before discharge or as out patients. Over the past six months, the respiratory team have sought to increase their pick up and review rate of patients admitted with all respiratory conditions. This has been done through the setting up of electronic alerts and increased screening of the hospital. Additionally, a campaign to increase awareness of both COPD and respiratory services in staff working across SRFT has increased direct and earlier referral.

⁵³ Killen J., Ellis H. Assisted discharge for patients with exacerbations of chronic obstructive pulmonary disease: safe and effective. *Thorax* 2000; **55**:885.

⁵⁴ Smith B, Appleton S, Adams R, *et al*. Home care by outreach nursing for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev* 2001(3)

⁵⁵ Sridhar M, Taylor R, Dawson S, *et al*. A nurse led intermediate care package in patients who have been hospitalised with an acute exacerbation of chronic obstructive pulmonary disease. *Thorax* 2008; **63**: 194–200

5.5.4 Unscheduled Care – Gaps and Work to Sustain

Unscheduled Care	Gaps
Hospital Admission	<ul style="list-style-type: none"> • Not all COPD patients admitted to hospital are under the care of a respiratory physician • The Hospital Based Specialist Stop Smoking Service will be understaffed from April 2009
Intermediate Care	<ul style="list-style-type: none"> • Stakeholders felt that length of stay on wards other than respiratory wards is an issue due to lack of knowledge about CAST service • Not all admissions avoidance staff have advanced clinical skills nor are trained in disease specific interventions for COPD • The impact of the admissions avoidance scheme upon COPD patients is unknown
	Work to Sustain
Intermediate Care	<ul style="list-style-type: none"> • The supported discharge scheme via CAST

5.6 End of Life Care – Supportive and Palliative Care in COPD

Few people with advanced COPD access palliative care services despite severe unremitting symptoms and a poor quality of life. Most patients die in hospital never having had the opportunity to discuss their end of life preferences and with unmet physical, psychological and spiritual needs⁵⁶. The General Medical Services contract and national guidelines highlight the importance of palliative care issues for those with COPD. The NSF for COPD will also focus on such service provision.

Recognising when to adopt a palliative care approach is a major challenge. COPD illustrates the end of life trajectory in which gradual decline is punctuated by acute, potentially severe or fatal exacerbations. Survival is often over estimated by doctors and this can lead to difficulties with discussions about end of life care planning. Even when a poor prognosis is recognised, clinicians find communication difficult⁵⁷. However, planning is needed for an important stage of life that could continue for a year or more.

The evidence to support the adoption of palliative care strategies to benefit patients is growing. Of vital importance is the adoption of the Gold Standards Framework (GSF)⁵⁸. The GSF is a framework to enable a gold standard of care for all people nearing the end of their lives. GSF is a systematic, evidence based approach to optimising the care of patients nearing the end of life in the community. It is concerned with helping people to live well until the end of life and includes care in the final year of life for people with any end stage illness.

GSF recommends the use of prognostic indicators to aid clinicians in their discussions with patients and carers and the development of local referral and treatment pathways.

In addition to the GSF, the Liverpool Care Pathway for the Dying Patient (LCP)⁵⁹ provides an evidence based framework for the delivery of appropriate care for dying patients and their relatives in a variety of care settings. It encourages a multi-professional approach to the delivery of care that focuses on the physical, psychological and spiritual comfort of patients and their relatives that has also been shown to empower generic staff in the delivery of care.

⁵⁶ Gore at al. How well do we care for patients with end stage chronic obstructive pulmonary disease? A comparison of palliative care and quality of life in COPD and lung cancer Thorax 2000; 55: 1000-6

⁵⁷ Elkington et al The healthcare needs of chronic obstructive pulmonary disease patients in the last year of life Palliative Med 2005; 19; 485-91

⁵⁸ Gold Standards Framework, Keri Thomas and Department of Health England, 2005

⁵⁹ http://www.mcpcil.org.uk/liverpool_care_pathway

Another end of life tool increasingly being used is the Preferred Priorities for Care (PPC)⁶⁰. This patient held document was designed to facilitate patient choice in relation to end of life issues. Through good communication and by documenting patient and carers choices, they become empowered through the sharing of this information with all professionals involved in their care. The PPC provides the opportunity to discuss difficult issues that may not otherwise be addressed to the detriment of patient care. Early evaluations suggest that the PPC is having a significant impact on patients receiving care in their preferred place of care at the end of life.

Salford launched a five year 'Strategy for Improving Supportive and Palliative Care Services for Adults in Salford' in 2007. This highlights the need for patients with non-malignant disease (including COPD) to have access to supportive and palliative care.

Over the last six months the respiratory and palliative care teams have been working together to improve awareness, access and quality of end of life services for people with COPD. Much has already been achieved. A prognostic indicator, treatment algorithm and referral pathway have already been developed and are ready for circulation.

Salford has initiated the use of the GSF in primary and secondary care. A 2 year project aimed at increasing the identification of COPD patients who may benefit from a supportive and palliative approach through GSF has been initiated.

The LCP is used both in SRFT and across Salford PCT for cancer and non-cancer patients, including COPD patients. A pilot of PPC is being planned for 2008, mainly in the community.

5.6.1 – End of Life Care – Gaps and Work to Sustain

End of Life Care	Gaps
	<ul style="list-style-type: none"> • The effectiveness of the Salford end of life pathway for COPD is not yet known
	Work to Sustain
	<ul style="list-style-type: none"> • The implementation of the Palliative Care Strategy • The joint working between respiratory and palliative care teams • Continuation of implementation of the GSF, LCP and PPC

⁶⁰

http://www.endoflifecareforadults.nhs.uk/eolc/files/F2110Preferred_Priorities_for_Care_V2_Dec2007.pdf

5.7 Information

Good quality information is vital in order to guide treatment and management and to review quality of care and evaluate services.

This section will address:

- Patient registers
- Information sharing
- Access to specialist advice
- Clinical Audit
- Patient Consultation

5.7.1 Patient Registers

As discussed in section 5.2, COPD registers are important to help guide patient treatment and management. All Salford GP Practices have a COPD register. The POINTS template is also now loaded in those practices whose IT systems are compatible.

5.7.2 Information Sharing

Delivering high quality care depends upon the relevant health and social care information being available to everyone involved. There is a need to share appropriate information about long-term conditions amongst all the health and social care professionals and with patients so that care planning and health surveillance are integrated and patients have the personal information needed to support self-care. Traditionally this has been difficult to achieve because of the wide variety of dispersed healthcare professionals who need to be included.

Currently in Salford there are many different health and social care records. This contributes to care fragmentation, inefficiency and ineffectiveness, especially when it comes to developing a structured care plan. The Salford Integrated Record (SIR) was designed to integrate Primary Care, Community Care and Secondary Care information about four long-term conditions (diabetes, coronary heart disease, chronic kidney disease and stroke). SIR does not currently include COPD.

5.7.3 Access to Specialist Advice

Primary care can and should take the lead in diagnosing, treating and managing the vast majority of COPD patients. However, as the disease becomes more severe and complex or if the patient has significant co-morbidities, staff may need specialist advice and support.

Traditional models of care base specialist services in secondary care, usually through out-patient departments. Newer models of care aim to provide a more rapid patient journey with care delivered closer to home wherever possible.

Additionally, technological improvements to enhance communication mean that the traditional model is no longer always needed.

In Salford, community COPD clinics have been created and e-mail and telephone advice has been made available to clinicians. In particular, a virtual multi-disciplinary team meeting is held weekly to discuss specific issues and is open to all clinicians in primary and secondary care. Referral pathways and protocols have been devised and widely disseminated.

5.7.4 Clinical Audit

Clinical audit is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change. Clinical audit is essential in order to confirm the quality of clinical services and highlight the need for improvement.

There will need to be audit at each stage of the COPD pathway in Salford to highlight gaps and direct resources. POINTS software allows COPD management to be audited at general practice level. In secondary care, participation in the National COPD Audits will allow us to benchmark care against national standards. Pulmonary rehabilitation, the home oxygen service, community COPD clinics, case management service, CAST and admission avoidance schemes all have inbuilt audit cycles which form part of their annual reports.

5.7.5 Patient Consultation

Patient and public involvement is a statutory requirement of the NHS and social care organisations. Patients and the public should have the opportunity to have a say in the planning and delivery of services.

Patient and public involvement in respiratory services has taken many forms in Salford. Firstly, there are patient representatives on many groups including the Salford Asthma and Respiratory Team, the Home Oxygen Therapy Steering Group and the Pulmonary Rehabilitation Development Group. Feedback is regularly collected via patient satisfaction surveys which are run annually by each service. In addition, patients and the public are consulted when new services are established and they have been involved in the development of this strategy. Steps must be taken to ensure that the needs of all patients (including those who find it difficult to access healthcare services, e.g. those with learning difficulties or mental health problems) are taken into consideration.

5.7.6 Information - Gaps and Work to Sustain

Information	Gaps
Information Sharing	<ul style="list-style-type: none"> • Lack of integrated primary, secondary and community health records for COPD patients
Clinical Audit	<ul style="list-style-type: none"> • Clinical audit does not currently take place at all stages of the COPD pathway
Patient Consultation	<ul style="list-style-type: none"> • The views of patients who find it difficult to access healthcare not necessarily sought / known meaning that their needs may not be met
	Work to Sustain
Patient Registers	<ul style="list-style-type: none"> • Use of the POINTS software across Salford
Access to Specialist Advice	<ul style="list-style-type: none"> • Availability of advice and multi-disciplinary team meetings
Patient Consultation	<ul style="list-style-type: none"> • Representation of patients on SART and other working groups • Annual patient satisfaction surveys for all services



5.8 Staff Training and Development

Empirical evidence supports the impact of a trained and knowledgeable workforce in improving patient outcomes. Bridging The Gap makes key recommendations about education and training:

- All smokers should receive brief, non-confrontational and non-judgemental advice from all healthcare professionals at all consultations. To achieve this, all healthcare professionals need to be trained in delivering this advice
- Education of healthcare professionals in primary care about COPD, its early signs and symptoms, and actions to be taken needs to be provided
- Education for primary healthcare professionals on the diversity of respiratory conditions, to aid differential diagnosis
- Practices need to have access to healthcare professionals with specialist training in COPD, spirometry and smoking cessation. In particular, staff trained in the use and interpretation of lung function tests should be available either within the practice, within the PCT or by arrangement with hospital-based services
- Maintenance of the skills base to address the diversity of respiratory conditions
- Adequate resources and appropriately trained healthcare professionals to meet the needs of patients with conditions requiring specialised respiratory services

In addition, health professionals (particularly those working in the field of primary care) should have knowledge of core respiratory disease issues, including:

- Approved clinical guidelines for the management of COPD
- The promotion of self-management interventions, particularly for exacerbations of chronic respiratory conditions
- The principles underpinning multidisciplinary pulmonary rehabilitation
- The beneficial effects and risks of the use of long term oxygen therapy and non invasive ventilation, in patients who have been appropriately assessed
- When to refer to seek specialist advice on diagnosis, treatment and management
- When to treat at home or refer to hospital

In Salford, stakeholder events revealed a number of issues and gaps around staff training and development:

- Need to increase educational capability
- Education needs to be for all frontline staff
- Clinicians need training in accurate diagnosis and management – there is a lack of people with knowledge of how to do tests
- District nurses need more training on medication issues and pathways

- Have to train clinicians in self-care, so they can promote message

A Salford training passport for COPD has now been developed and implemented. The passport has three different levels which have been designed to provide the skills appropriate to the level of intervention required by the job role and description. By June 2008, around 70% of Salford practice nurses will have reached level 3 (a recognised qualification in COPD). This is higher than the national average which stands at 40%. Whilst there has been good uptake of COPD training amongst nurses, upskilling of GPs and other primary care health professionals has not been as widespread.

An annual respiratory day will also provide regular updates on new developments in care and treatment.

5.8.1 Staff Training and Development - Gaps and Work to Sustain

Staff Training and Development	Gaps
	<ul style="list-style-type: none"> • Current and future training needs are unknown • Not all primary care health professionals are accessing COPD training • As highlighted in previous sections, more training and support is needed in case management, early supported discharge and for non respiratory specialist staff across primary and secondary care
	Work to Sustain
	<ul style="list-style-type: none"> • The COPD Training Passport • Annual respiratory training day

5.9 Summary

If it is to be based upon evidence of best practice, the model of COPD care in Salford will need to incorporate:

- Primary Prevention
- Early and accurate diagnostics
- Treatment and management that is based upon national guidance
- Adequate support and services for patients with severe disease / complex cases
- High quality secondary care with mechanisms in place to prevent / reduce length of stay in unscheduled admissions
- Access to supportive and palliative care to those patients who need it

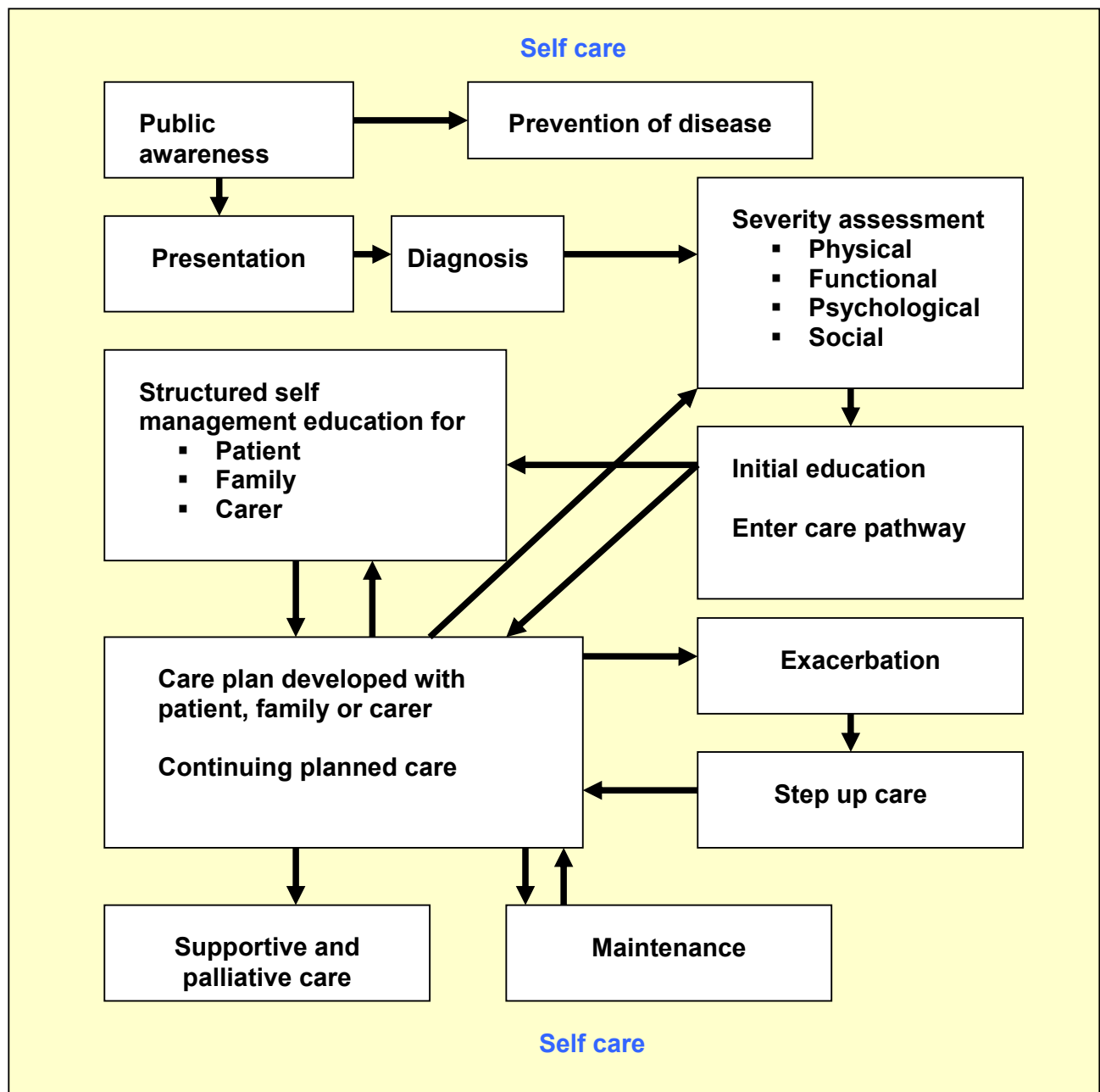
There is already lots of good practice already in Salford and a lot of work has been taking place under the Best Value Project. However, chapter 5 has highlighted that there are still several key gaps in services and these will need to be addressed if the model is to be realised.

6. COPD Pathway

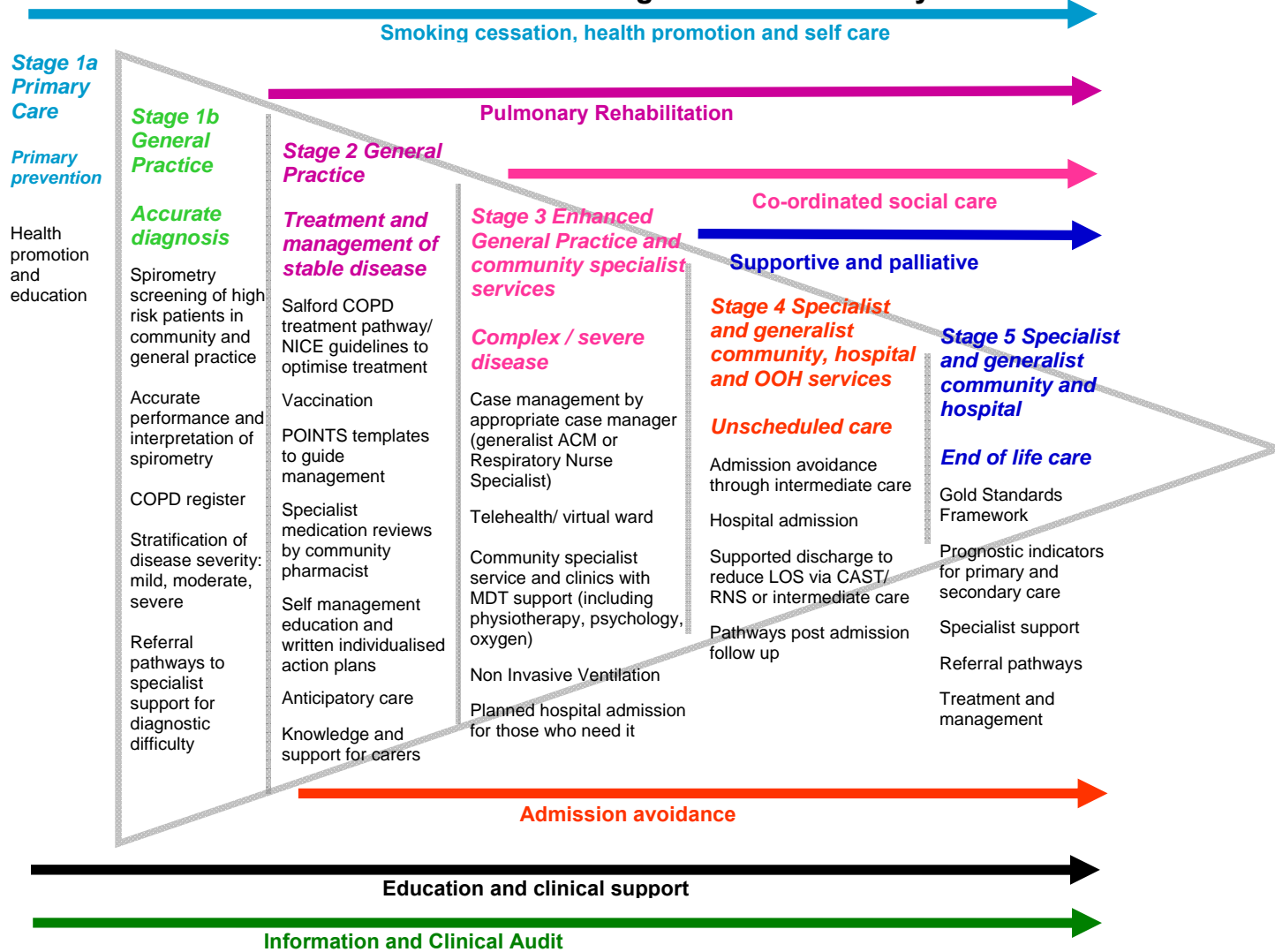
Evidence of best practice in COPD care has been used to produce a proposed model and strategic pathway that will ensure that Salford patients receive evidence based, high quality care. The proposed model (below) emphasises the importance of self care at all stages of disease. Education and awareness will be vital.

The pathway (overleaf) shows that initial emphasis will be placed upon prevention of COPD. Where patients do develop COPD, early diagnosis and effective management will be crucial with support for those with end-stage COPD.

LTC COPD Model for Salford



Salford COPD Team – Integrated Care Pathway



7. What We Will Do

Based on the gaps in service provision in Salford identified chapter 5, this section will make recommendations to ensure that our vision, proposed model and objectives are realised.

Generally the recommendations fall into four broad categories:

- Evaluating existing projects and services
- Commissioning new services
- Commissioning the expansion of existing services
- Developing pathways and guidelines

Section 8 will then set out an action plan to show how the recommendations will be put into practice.

To reduce the number of Salford people developing COPD we will:

Increase the number of smokers accessing the smoking cessation service

Continue to implement the recommendations of the Salford Tobacco Control Strategy 2006-2010

Develop and implement the recommendations of a Salford Obesity Strategy addressing food and physical activity issues across Salford

Continue to work towards the action plan in place at Salford City Council to address high levels of nitrogen dioxide in the air in Salford

To ensure early and accurate diagnosis we will:

Commission bi-annual social marketing campaigns to raise awareness of COPD

Develop targeted screening guidelines for COPD in accordance with the NICE and NSF recommendations

Implement a targeted screening approach consistently across all practices, targeting smokers over 35

Continue to run and evaluate community screening pilots in Lower Broughton and Little Hulton

Commission community screening services based upon the findings of the community screening pilots. Work with other agencies such as pharmacies, hospitals and nursing homes.

(Training general practice staff to undertake spirometry and interpret the results will be dealt with in the training and development section)

Assist all GP practices in Salford to stratify their COPD registers

Develop referral pathways for specialist support for diagnostic difficulty

To effectively treat and manage COPD to prevent deterioration we will:

Audit adherence to local treatment guidelines for COPD and assess how useful they are deemed to be

Update local treatment guidelines if found to be necessary and raise awareness amongst all clinicians about the guidance

Provide regular updates on treatment and management of COPD

Continue to use and act upon POINTS in general practice

Evaluate the medication review pilot and commission its expansion if found to be effective

Increase the uptake of smoking cessation advice for COPD patients

Increase the uptake of flu and pneumococcal vaccinations

Continue to use COPD management plans in general practice and monitor their use

Ensure that the needs of COPD patients are addressed in the Salford model of self care

Evaluate the impact of self care programmes upon COPD patients and commission services accordingly

Evaluate the Met Office weather forecasting pilot and commission if found to be effective

Continue to produce and distribute annual COPD winter plans

Explore the inclusion of COPD in the Trust's heatwave plans

Commission the expansion of pulmonary rehabilitation to ensure provision for all who need it, ensuring that there is access to community rehabilitation and that issues surrounding transport and access are considered

Explore the potential for early pulmonary rehabilitation post exacerbation of COPD

Explore the needs of carers of people with COPD in Salford and commission services to provide them with knowledge and support

To manage and support patients with severe COPD to keep them well we will:

Commission active case management services for COPD patients and evaluate the impact of the care received

Evaluate the outcomes of the telehealth pilot and commission telehealth services if found to be effective

Evaluate the impact of a community respiratory physiotherapist and reassess provision of physiotherapy services for COPD patients

Commission services for COPD patients who would benefit from psychological input

Commission the Home Oxygen Therapy Service and evaluate the impact upon COPD patients who are on oxygen or who could benefit from oxygen

Commission access to NIV after undertaking a scoping exercise and considering the various service delivery options

Continue to refer patients who would benefit for surgery

To reduce unscheduled hospital admissions we will:

Review and update the pathways for COPD in secondary care

Commission adequate support from the hospital based specialist stop smoking team

Continue to commission an early supported discharge service

Raise awareness of the early supported discharge (CAST) team and how it is accessed across Salford Royal NHS Foundation Trust staff

Evaluate the effectiveness of the admissions avoidance scheme for COPD patients

(Training of the admissions avoidance staff will be dealt with in the training and development section)

To manage and support COPD patients at the end of life we will:

Implement and evaluate the end of life pathway (including supportive and palliative care) for COPD patients

Continue to implement the recommendations of the Palliative Care Strategy

Continue the joint working between respiratory and palliative care teams

Continue to implement and evaluate the impact of implementing the GSF, LCP and PPC upon people approaching end of life with COPD

To aid effective COPD care by enabling good quality information we will:

Develop the Salford Integrated Record to include COPD

Develop a robust clinical audit plan for COPD incorporating audit at all stages of the pathway

Work with the Patient and Public Involvement team and teams representing groups who find it difficult to access healthcare to ensure the views of all patient groups are sought and that their needs are met

Continue to maintain general practice COPD registers aided by POINTS software

Continue to provide access to specialist advice and multidisciplinary team meetings

Continue to involve patients in COPD related working groups

Continue to conduct annual patient satisfaction surveys for each service

To aid effective COPD care by providing staff training and development opportunities we will:

Undertake an education and skills analysis to identify current and predicted training needs

Continue to provide and further develop and advertise a rolling programme of education (training passport) to up-skill all members of the primary care workforce. This will include:

- Primary Prevention
- Diagnosis
- Treatment and Management
- End of Life Care

Continue to hold annual respiratory training days

Develop the respiratory nurse role to facilitate case management, nurse led discharge and clinical support to wards, departments and PBC clusters

8. The Way Forward

8.1 Resource Implications

8.1.1 Current Investment

Patients with COPD access many services across the health and social care spectrum. In some services data is available which can be used to directly quantify the use of resources on patients with COPD; but for others the data is not sophisticated enough to do this, so where possible reasoned estimates have been made.

In general practice, contract payments are made for the care of a registered list of patients. As well as the contract payments there are additional payments made for achieving set quality standards under the Quality and Outcomes Framework (QOF) for specific clinical disease groups. 5,798 patients with COPD were listed on clinical disease registers at March 2008 and the amount paid to Salford practices for 2007-08 achievement for this group of patients under the primary care QOF was £210k.

Nationally, respiratory diseases account for an estimated 10% of all expenditure on medicines in primary care. Antimuscarinic and compound bronchodilators are used specifically in the treatment of COPD, but the following are used for both asthma and COPD: short-acting and long-acting beta agonists, corticosteroids, Symbicort® and Seretide®. Therefore no estimate for COPD patients has been included.

One of the aims of the SHIFT programme was to reduce the number of acute hospital bed days. Patients with COPD were identified as high consumers of hospital resource as demonstrated in tables 3- 5 when in 2006-07 £1.5 million was spent on patients with a primary diagnosis of COPD. A programme of work was initiated in 2007 with the appointment of two specialist respiratory clinicians funded partly by the PCT on a two year fixed term. The clinicians have worked to develop the strategy and are delivering many of the workstreams identified within it.

Further investment has been made in community services under the best value programme; it is expected that recurrent funding will be available from reductions made to the secondary care contracts for unscheduled COPD hospital admissions. These investments include:

- Case managers actively managing patients with COPD and other chronic diseases within the community
- Expansion of the pulmonary rehabilitation service
- Community COPD clinicians including community clinics
- Expansion of intermediate care services in the community and supporting people at home this includes COPD patients
- Home oxygen service

Established community services include the COPD assessment and support team (CAST)

8.1.2 Future Investment

The PCT has developed a five year Strategic Plan, which describes the plans for commissioning services from 2009 to 2014. It aims to maintain and improve current services and deliver improvements in ten prioritised outcome areas. These prioritised areas include reducing health inequalities, increasing life expectancy, reducing the number of people who smoke and reduce obesity in all age groups. These are key target areas in the COPD strategy and demonstrate the commitment to make the significant health improvements required to deliver the COPD strategy.

A set of initiatives has been developed to deliver the identified outcome areas and the resources required to deliver these initiatives have been identified in the 5-year strategic financial plan. Approximately £15m will be invested over a four year period to 2013 on the public health initiatives. The initiatives build on the services currently in place and will be prioritised in the annual Process for Investment and Reform (PIR). The COPD strategy will be prioritised within PIR but will be funded from savings in secondary care, no other funding will be available.

The actions required to implement the strategy and address gaps have been identified. For each area the estimated cost implications, where sufficient information exists, and expected funding source has been shown (see Appendix 1). Some actions are part of a wider PCT strategy e.g. smoking and self care and costs haven't been estimated. Some schemes have already been implemented as best value initiatives and, if positively evaluated, will be funded recurrently from the reduction in secondary care contracts on COPD unscheduled admissions.

It is estimated that the cost of implementing the strategy to 2011 activity predictions will be circa £827k of which £400k relates to Telehealth and £200k is impact of increased QOF disease registers. There will also be an impact on prescribing costs although this can't be quantified on the information currently available. The phasing of costs will be done when the prioritisation and phasing of initiatives has been completed.

Table 8 below lists the estimated cost implications based on 2011 activity predictions. This excludes other actions where it hasn't been possible to provide an estimate and the impact on GP prescribing (see Appendix 1).

Table 8: Estimated cost implications – full implementation of COPD specific initiatives 2010-11

Action	£	Funding Stream
Screening over 35s	£40k	Strategic Plan Initiatives
Telehealth	£400k	
Hospital based specialist stop smoking team	£42k	
<i>Sub total Strategic Plan initiatives</i>	<i>£482k</i>	
Pharmacotherapy - medication uses review	£10k	Primary Care
Flu and pneumococcal vaccinations	£20k	
QOF – increased achievement/disease registers	£200k	
<i>Sub-total primary care</i>	<i>£270k</i>	
Pulmonary Rehabilitation	£65k	Reductions in secondary care contract
Develop Salford Integrated Record for COPD patients	£50k	Non Recurrent Slippage
Total	£827k	

Tables 9 & 10 show the predicted number of COPD patients, severity of condition and unscheduled hospital admissions which have been used in the estimation of future investment required.

Table 9: Estimated number of COPD patients and unscheduled hospital admissions

Estimated Patients with COPD	2008-09	2009-10	2010-11*
Population	236,914	236,914	236,914
% Estimated prevalence of COPD	5.28%	5.49%	5.70%
Estimated number of COPD patients (diagnosed and undiagnosed)	12,500	13,000	13,500
Estimated number of patients diagnosed with COPD	7,500	9,500	10,500
Estimate of undiagnosed patients	5,000	3,500	3,000

* 2010-11 figures extrapolated from 2008-2010

Table 10: Estimated severity of COPD patients

Severity of Condition	2008-09	2009-10	2010-11
Estimate of patients diagnosed with mild condition	57.5% 4,312	55% 5,225	52.5% 5,512
Estimate of patients diagnosed with moderate condition	32.5% 2,438	35% 3,325	37.5% 3,937
Estimate of patients diagnosed with moderate to severe condition	10% 750	10% 950	10% 1,050

Table 11 shows the reductions applied to secondary care contracts in 2008-09 and the anticipated reductions for 2009-10 & 2011-12. The start date on some 2008-09 schemes has been delayed and so the actual savings are expected to be achieved in 2009-10 rather than 2008-09.

Table 11: Estimated severity of COPD patients

Estimated Savings on Unscheduled Admissions as a Result of Initiatives	2008-09	2009-10	2010-11
Intermediate care <small>(as per modelling)</small>	62	185	185
SHIFT funding of specialist clinicians - implementations including COPD community clinic*	65	65	65
Expansion of Pulmonary Rehabilitation Services <small>(as per business case)</small>		53	60
Case management <small>(estimate 1/3 of total 449)</small>	90	90	90
Total	227	393	400

* Figures shown are cumulative savings

8.2 Strategy Outcomes

This strategy has set out its vision for COPD services in Salford. We will know that this vision has been realised when the following outcomes have been achieved:

1. Improved patient experience, maintaining a minimum of 70% patient satisfaction in annual patient satisfaction surveys
2. A reduction in the Standardised Mortality Ratio for COPD from 140 to 126 (10%) by 2018.

The number of Salford people developing COPD will have reduced

3. Fewer people developing COPD by 2018 aided by a reduction in smoking prevalence from 35% to 25%

There will be early and accurate diagnosis of COPD

4. Early detection of COPD by identifying an additional 5000 patients (10,500 in total) who are at risk of developing or have COPD by March 2010

COPD will be effectively treated and managed to prevent deterioration

5. Provision of services closer to home delivered by the most appropriate person

Table 12: Provision of COPD services

Service	Current site of delivery	Best site of delivery	Who is best to deliver it
Screening spirometry	Primary Care	Community and Primary Care	Trained practice nurses, GPs
General spirometry	Secondary Care	Primary Care and Secondary Care	Trained technician/ practice nurses/ specialist nurses
Full lung function testing	Secondary Care	Secondary Care	Fully trained technicians/ Respiratory physiologist
Exercise testing	Secondary Care	Secondary Care	Fully trained technicians/ Respiratory physiologist
Oxygen assessment (LTOT, SBOT e.t.c)	Secondary Care	Community	Oxygen specialist nurse
Nebuliser assessment	Secondary Care	Secondary Care / Community	Trained nurses/ physiotherapist

Specialist assessment and advice	Secondary Care	Community / Secondary Care	Specialist in the management of COPD
Treatment of exacerbations	Secondary Care / Community	Community / Secondary Care	Integrated COPD team
Non-Invasive ventilation (Acute)	Secondary Care	Secondary Care	Respiratory specialist
Home NIV	Wythenshaw	Secondary Care / Wythenshaw	Respiratory specialist
Pulmonary rehab	Secondary Care / Community	Community	Trained rehab team
Smoking cessation (general)	Primary Care	Primary Care Community	Trained nursing and support staff
Smoking cessation (specialist)	Primary Care/ Secondary Care	Primary Care/ Secondary Care	Specialist advisors
Clinical Psychology	Primary care/ Secondary Care	Primary Care/ Secondary Care	Trained psychologist
Palliative care	Primary Care/ Community/ St Ann's Hospice	Primary Care/ Community/ St Ann's Hospice	Specialist palliative care team with trained specialist respiratory nurses
Fitness to fly assessment	Secondary Care	Secondary Care	Trained respiratory physiologists
EPP	Community	Community	Expert patients with specialist support
Case management	Community/ Secondary Care	Community / Secondary Care	Specialist team of respiratory nurses

Consideration will also be given to how community pharmacy can play a role in delivering COPD services to the Salford population.

6. 100% of patients with COPD (where suitable) will be offered a place on an appropriate self care programme

7. 100% of patients who are functionally disabled by breathlessness (MRC grade 3) are offered pulmonary rehabilitation

Patients with severe COPD will be managed and supported to keep them well

8. 100% of patients with a PARR++ / combined model score greater than 50 will have an Active Case Manager

9. 100% of patients with severe COPD will have access to clinical psychology services

10. 100% of patients who would benefit from it will have access to NIV

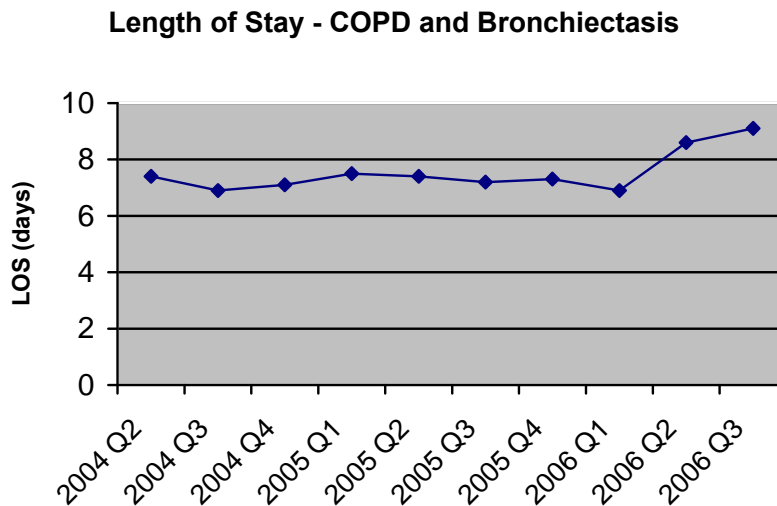
Unscheduled hospital admissions will be reduced

11. Reduction in inappropriate hospital admissions, with admissions down to 885 per year

12. Reduction in unscheduled COPD admissions to secondary care in proportion to the total number of patients diagnosed with COPD from 0.14 in 2007 to 0.12

13. Length of stay for hospital admissions reduced to between 5 and 6 days

Figure 15: Length of Stay Data 2004 - 2006



COPD patients will be managed and supported at the end of life

14. 100% of COPD patients who need it will have access to palliative and supportive care (estimated 3-5% of the COPD population)

Staff will have training and development opportunities to aid effective COPD care

15. Better knowledge of COPD and training for clinical staff who have contact with COPD patients

Table 13: Level of COPD education for clinical staff caring for patients with COPD

Level of Involvement in COPD Care	Level of Education
High	100% with a COPD diploma
Medium	Attendance at PCT recognised COPD study days
Low	COPD Skill Set

8.3 Monitoring and Evaluation

The Salford Asthma and Respiratory Team (SART) will be overseeing the implementation, monitoring and continuous development of this strategy. SART will report to the Practice Based Commissioning Operational Board. Performance will also be monitored through the commissioning process and the PCT Board through its balanced scorecard.

The implementation plan section which follows is expected to be a working document which will be regularly reviewed by SART and updated as progress towards long-term objectives is achieved. The costs associated with the actions identified are set out in appendix 1. Progress against the implementation plan will be reported to the PCT Board in February 2010.

In order to evaluate the success of the strategy in achieving its goals, the programme as a whole and the individual services identified will be evaluated and monitored against a set of criteria which will include the COPD trajectories and outcomes described above.

8.4 Implementation Plan

Code	Action	Progress
<u>To reduce the number of Salford people developing COPD we will:</u>		
PP1	Run a campaign to attract more smokers into accessing the Stop Smoking Service	
PP2	Implement the recommendations of the Salford Tobacco Control Strategy 2006-2010	
PP3a	Develop and agree the Salford Obesity Strategy	
PP3b	Implement the recommendations of the Salford Obesity Strategy	
PP4	Implement the action plan to reduce levels of nitrogen dioxide	
<u>To ensure early and accurate diagnosis we will:</u>		
D1	Commission biannual social marketing campaigns to raise awareness of COPD	
D2a	Develop targeted screening guidelines for COPD in accordance with the NICE guidance	
D2b	Implement a targeting screening approach consistently across all practices	
D3	Evaluate the community screening pilots in Lower Broughton and Little Hulton	
D4	Commission community screening services working with other agencies including pharmacies	

Code	Action	Progress
D5	Work with the IT team to ensure that all practices have stratified their COPD registers	
D6	Develop referral pathways for specialist support for diagnostic difficulty	
<u>To effectively treat and manage COPD to prevent deterioration we will:</u>		
TM1a	Audit adherence to local treatment guidelines for COPD	
TM1b	Devise, send out and analyse the results of a questionnaire to find out how useful the local treatment guidelines are deemed to be	
TM1c	Update local treatment guidelines if found to be necessary	
TM1d	Raise awareness amongst all clinicians about COPD guidelines	
TM2	Provide regular updates on treatment and management of COPD via paper and electronic newsletters	
TM3	Work with practices to ensure that they are using and acting upon POINTS	
TM4a	Evaluate the medication review pilot	
TM4b	Commission a medication review service if found to be effective	
TM5	Undertake a review of the evidence for increasing uptake of smoking cessation advice in COPD and make recommendations to SART	

Code	Action	Progress
TM6	Put in place measure to increase the uptake of flu and pneumococcal vaccinations	
TM7	Work with practices to encourage and monitor the usage of COPD management plans	
TM8a	Work to ensure that the needs of COPD patients are incorporated in the Salford self care model	
TM8b	Evaluate the impact of self care programmes upon COPD patients	
TM8c	Commission self care programmes for COPD patients according to their impact	
TM9a	Evaluate the Met Office weather forecasting pilot	
TM9b	Commission the Met Office service if found to be effective	
TM10a	Continue to produce and distribute annual COPD winter plans	
TM10b	Explore the inclusion of COPD in the Trust's heatwave plans	
TM11	Commission the expansion of pulmonary rehabilitation to ensure provision for all who need it	
TM12	Explore the potential for early pulmonary rehabilitation post exacerbation of COPD	
TM13a	Explore the needs of carers of people with COPD in Salford	
TM13b	Commission services to provide carers with knowledge and support	

Code	Action	Progress
<u>To manage and support patients with severe COPD to keep them well we will:</u>		
CC1a	Commission active case management services for COPD patients	
CC1b	Evaluate the impact of active case management on COPD patients	
CC2a	Evaluate the outcomes of the telehealth pilot	
CC2b	Commission telehealth services if found to be effective	
CC3a	Evaluate the impact of a community respiratory physiotherapist	
CC3b	Reassess provision of physiotherapy services for COPD patients using the evaluation results	
CC4	Work with primary care mental health teams to ensure that there is access to psychological therapies for COPD patients who would benefit	
CC5a	Commission the Home Oxygen Therapy Service	
CC5b	Evaluate the impact of the home oxygen service on COPD patients who are on oxygen	
CC6a	Undertake a scoping exercise and consider the various service delivery options for ensuring that COPD patients have access to NIV	
CC6b	Commission access to NIV for COPD patients	

Code	Action	Progress
<u>To reduce unscheduled hospital admissions we will:</u>		
UC1a	Review the pathways for COPD in secondary care	
UC1b	Update and disseminate the pathways for COPD in secondary care	
UC2	Commission adequate support for COPD patients from the hospital based stop smoking service	
UC3a	Continue to commission an early supported discharge service	
UC3b	Raise awareness of the CAST team and how it is accessed across Salford Royal NHS Foundation Trust staff	
UC4	Evaluate the effectiveness of the admissions avoidance scheme for COPD patients	
<u>To manage and support COPD patients at the end of life we will:</u>		
PC1	Implement and evaluate the end of life pathway (including supportive and palliative care) for COPD patients	
PC2	Implement the recommendations of the Palliative Care Strategy	
PC3	Continue the joint working between respiratory and palliative care teams	
PC4	Continue to implement and evaluate the impact of the implementation of the GSF, LCP and PPC	

Code	Action	Progress
<u>To aid effective COPD care by enabling good quality information we will:</u>		
I1	Develop the SIR to include COPD	
I2	Develop a robust clinical audit plan for COPD	
I3	Work with PPI and teams representing groups who find it difficult to access healthcare to ensure that the views of all patient groups are sought and that their needs are met	
I4	Support general practice to maintain COPD registers aided by POINTS software	
I5	Continue to provide access to specialist advice and multidisciplinary team meetings	
I6	Continue to have patient representation on all COPD working groups	
I7	Continue to conduct annual patient satisfaction surveys for all services providing care for COPD patients	
<u>To aid effective COPD care by providing staff training and development opportunities we will:</u>		
ST1a	Undertake an education and skills analysis to identify current and predicted training needs	
ST1b	Make recommendations for COPD training and development based upon the findings of the analysis	
ST2a	Further develop the COPD Training Passport	

Code	Action	Progress
ST2b	Advertise the availability of the training passport, particularly encouraging those staff groups with lower participation	
ST3	Continue to hold annual respiratory training days	
ST4	Develop the respiratory nurse role to facilitate case management, nurse led discharge and clinical support to wards, departments and PBC clusters	

9. Glossary of Terms

Acute pain or illness is one that quickly becomes very severe.

Adverse is to have a negative or harmful effect on something.

Ambient air means the air that we breathe and which surrounds us as we go about daily living.

Ambulatory oxygen is a portable oxygen supply that can be moved around with the patient.

Bronchodilator is a drug that relaxes the muscles of the airways and relieves constriction of the airways.

Cessation means to end or stop e.g. smoking.

Chronic refers to something bad (disease/condition) which is likely to continue for a long time.

Chronic Obstructive Pulmonary Disease (COPD) is the name given to a condition where people cannot breathe in and out properly because of long-term damage to the lungs. In COPD, the airways have become blocked ('obstructed') to some extent, and the air sacs may have become damaged. Causes of the blockage include an increased amount of mucus in the airways and narrowing of the passages as a result of the airway walls becoming thickened.

Consistent is always behaving or happening in a similar way.

Cor Pulmonale is a heart condition that happens as a consequence of a lung condition such as COPD.

Demographics is the quantity and characteristics of the people who live in a particular area, especially in relation to their age, how much money they have and what they spend it on.

Domiciliary oxygen is prescribed for patients in the home after careful valuation.

Disability is an illness, injury or condition that makes it difficult for someone to do the things that other people do.

Disproportionate is when something is too large or too small in comparison to something else, or not deserving its importance or influence.

Disseminate is to spread or give out something, especially news, information, ideas, etc., to a lot of people.

Evercare is a coordinated multidisciplinary approach to providing active follow-up to patients. It uses primary care staff to organise care that enables older people to remain as independent as possible.

Emphysema is the damage to the lung tissue in COPD that affects the ability of the air sacs to transfer air into the body and that makes the airways floppy.

Exacerbation is the worsening or flare-up of a condition.

Forum is a situation or meeting in which people can talk about a problem or matter especially of public interest.

Hypercapnic Respiratory Failure may happen during an exacerbation. The patient's blood becomes saturated with carbon dioxide and they are unable get enough oxygen into their blood. In these circumstances NIV should be used.

Hypoxaemia means that there is inadequate oxygen in the blood.

Incidence is the rate at which something happens.

Influenza is the formal name for flu, an infectious illness which is like a very bad cold, but which causes a fever.

Inhalers are small devices, which ensure that very small amounts of medication are delivered directly into the lungs. It is important to ensure that an inhaler device delivers the drugs to the airways consistently and in the right quantity.

Intervention is when a medical professional becomes involved in a difficult situation in order to improve it or prevent it from getting worse.

Kaiser Permanente Medical Care Programme is an approach to chronic disease management that emphasises integrated care, patient self-management, use of intermediate care and information systems that support patient care wherever they present.

Mortality is the number of deaths within a particular society and within a particular period of time.

Multi-disciplinary teams are made up of people from different areas of study/ expertise.

Non-invasive ventilation (NIV) is a method of helping a person to breathe artificially. The person wears a mask that covers the nose (or less commonly, a full face mask that covers the nose and mouth). This is connected to a small machine that pushes air through the mask and into the person's lungs.

Nebulisers are devices that convert liquid medicine into an aerosol (or mist) that can be breathed in. This allows higher doses of medicines to reach the lungs.

Palliative care is care that aims to relieve suffering and improve the quality of living and dying.

Pneumonia is a serious illness in which one or both lungs become red and swollen and filled with liquid. People who are bedridden can easily get pneumonia.

Predisposition is what makes someone more likely to behave in a particular way or to suffer from a particular illness or condition.

Prevalent is something that exists very commonly or happens frequently.

Primary Care is the first point of contact for people outside hospitals in local settings. Primary care health professionals include local GPs, community nurses, social workers, pharmacists, physiotherapists, occupational /speech / language therapists, opticians and dentists among others.

Proactive means to take action by causing change and not only reacting to change when it happens.

Pulmonary Rehabilitation is a programme of care and activities co-ordinated by different types of health care professionals who work as a team to help individuals live as normal a life as possible. The program should be designed specifically for the individual, with their full involvement. It should include exercises, information, diet and other ways of dealing with COPD.

Pulse Oximetry is a relatively inexpensive, non-invasive, simple and reliable means to determine oxygen saturation in blood.

Secondary Care is treatment/care delivered and received mainly in an acute hospital setting

Sedentary is someone who does little exercise or physical activity.

Obese is someone who is extremely overweight

Socio-Economic Groupings is the way the population is divided up with reference to income and job status:

Group A Represent 3% of the UK population; professional people, very senior executives in business, or top civil servants, also retired people, previously grade A, and their widows.

Group B
Represent 18% of the UK population; middle management executives in large organisations with appropriate qualifications, principle officers

in local government and civil service, senior managers or owners of small business concerns, educational and service establishments.

Group C1

Represent 27% of the UK population; junior managers, owners of small establishments, and all others in non-manual positions.

Group C2 Represent 24% of the population; skilled manual workers, and manual workers with responsibility for other people, also widows who receive a pension from their late husband's job.

Group D Represent 16% of the UK population; semi-skilled manual workers, unskilled manual workers, and apprentices and trainees to skilled workers.

Group E Represent 12% of the UK population; all those entirely dependent on the state long term, through sickness, unemployment, old age or other reasons, casual workers and those without a regular income. Households without a chief wage earner are coded in this.

Spirometry a breathing test used to diagnose COPD and to monitor any changes in lung function over time.

Tertiary Care- means treatment or care delivered and/or co-ordinated by health and social care staff in a specialist centre such as a regional centre attached to a major hospital.

Upper Respiratory Tract includes the mouth, pharynx, tonsils, sinuses and middle ears and is lined by a moist mucosa.

Vaccine is a substance which contains a harmless form of a virus or bacterium (extremely small organism), and which is given to a person or animal to prevent them from getting the disease which the virus or bacterium causes.

Vaccinate is to give someone a vaccine, usually by injection, to prevent them from getting a disease:

10. Abbreviations

A&E – Accident and Emergency

ACM – Active Case Management

AHP – Allied Health Professional

AQS – Air Quality Strategy

BTG – Bridging the Gap

CAST – COPD Assessment and Support Team

COPD – Chronic Obstructive Pulmonary Disease

CVD – Cardio-Vascular Disease

DNA – Did Not Attend

DoS – Directory of Services

ECDU – Emergency Clinical Decision Unit

EPP – Expert Patient Programme

EPR – Electronic Patient Record

FEV – Forced Expiratory Volume

GOLD - Global initiative for chronic Obstructive Lung Disease

HDU – High Dependency Unit

HIS – Health Inequalities Strategy

HPSS – Health and Personal Social Services

HRG – Healthcare Resource Group

ISTs – Integrated Service Teams

ICU – Intensive Care Unit

LA – Local Authority

LAQM – Local Air Quality Management

LDP – Local Delivery Plan

LIFT – Local Improvement Finance Trust

LTC – Long Term Condition

LVRS – Lung Volume Reduction Surgery

MaST – Manchester, Salford, Trafford

MAU – Medical Assessment Unit

MDT – Multidisciplinary Team

MIU – Medical Investigation Unit

MRC – Medical Research Council Dyspnoea Scale

NICE – National Institute for Health and Clinical Excellence

NIPPV - Non-Invasive Positive Pressure Ventilation

NIV – Non-invasive Ventilation

NSF – National Service Framework

NWAS – North West Ambulance Service

OSA – Obstructive Sleep Apnoea

PBC – Practice Based Commissioning

PCT – Primary Care Trust

PR – Pulmonary Rehabilitation

PSA – Public Service Agreement

QOF – Quality and Outcomes Framework

RCT – Randomised controlled trial

RNS – Respiratory Nurse Specialist

SART – Salford Asthma and Respiratory Team

SHIFT – Salford Health Improvement for Tomorrow

SIR – Salford Integrated Record

SLA – Service Level Agreement

SMR – Standardised Mortality Ratio

SPCT – Salford Primary Care Trust

SRFT – Salford Royal Foundation Trust

TIS – Tactical Information Service

WTE – Whole Time Equivalent