Is prevention better than the cure?

**EVIDENCE BASE**

Annual Public Health Report 2015

“Apparently they’re better than The Cure.”
Contents
Acknowledgements................................................................................................................................. 0
Foreword.................................................................................................................................................. 1
1. Opening lyrics......................................................................................................................................... 2
   Introduction............................................................................................................................................... 2
   Why this is important and why now?........................................................................................................ 4
2. Choosing the right record...................................................................................................................... 5
   Defining the problem ................................................................................................................................ 5
   Methodology - Why we selected the areas to focus on .............................................................................. 5
3. Finding the right track............................................................................................................................ 7
   Focus population groups .......................................................................................................................... 7
   Hospital activity ......................................................................................................................................... 7
   Programme budgeting ............................................................................................................................... 9
   What is programme budgeting? ............................................................................................................... 9
   How is programme budgeting data derived? ............................................................................................ 9
   What does the Suffolk data tell us? ......................................................................................................... 9
   Emergency admissions............................................................................................................................. 13
   Emergency (unplanned care) admissions in Suffolk analysed by age...................................................... 13
   Emergency (unplanned care) admissions in Suffolk analysed by cause .................................................. 15
   Social care spend and activity .................................................................................................................. 22
   Diseases and risk factors ........................................................................................................................ 27
   Summary of key conditions amenable to prevention selected from the analysis above ....................... 27
Identifying and managing existing conditions ................................................................. 32
Cardiovascular disease ....................................................................................................... 32
The Suffolk picture ............................................................................................................... 32
Hypertension ......................................................................................................................... 35
The Suffolk picture ............................................................................................................... 35
What are we doing about it? ............................................................................................... 37
What else should we do ....................................................................................................... 37
What shouldn’t we do ......................................................................................................... 38
What can we achieve? ......................................................................................................... 39
The management of hypertension - The Suffolk picture ..................................................... 42
What are we doing about it? ............................................................................................... 43
What else should we consider doing? ............................................................................... 43
Is there anything we should stop doing or that we know does not work? ....................... 44
What can we achieve? ......................................................................................................... 44
Atrial fibrillation .................................................................................................................. 47
The Suffolk picture – The detection and management of atrial fibrillation ...................... 47
What are we doing about it? ............................................................................................... 48
What else should we do? .................................................................................................... 49
What shouldn’t we do ........................................................................................................ 50
What can we achieve? ......................................................................................................... 50
Flu ........................................................................................................................................ 162
  Measures and epidemiology ............................................................................................ 162
  Current action .................................................................................................................. 162
  Pneumococcal vaccination ............................................................................................... 168
  What are we doing about it? ............................................................................................. 170
  What else to do? ................................................................................................................ 171
  What not to do? ................................................................................................................ 171
  What can we achieve? ....................................................................................................... 171
  Potential impact? ............................................................................................................. 172
Loneliness and social isolation ......................................................................................... 172
  Measures and epidemiology ............................................................................................ 172
  Current action .................................................................................................................. 176
  What else to do? ................................................................................................................ 178
  What not to do? ................................................................................................................ 178
  Potential impact .............................................................................................................. 179
Support for carers ............................................................................................................. 181
  Measures and epidemiology ............................................................................................ 181
  Current action .................................................................................................................. 183
  What else to do? ................................................................................................................ 184
  What not to do? ................................................................................................................ 185
  Potential impact .............................................................................................................. 185
6.  Track listing - summing up ............................................................................................. 187
7. Last year’s big hits ................................................................. 194
   What have we done since last year? ........................................ 194
8. Top ten prevention hits .......................................................... 198
   Recommendations .................................................................. 198
References ................................................................................ 199
Acronyms .................................................................................. 224
Glossary .................................................................................... 225
Figures .................................................................................... 226
Tables ....................................................................................... 228
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Foreword

This is my 4th Annual Public Health Report for Suffolk and by far the most challenging. Often in public health we take a long term view advising on actions that will have an impact in 20 or 30 years’ time. Here we set a challenge of examining what would work in the shorter term, a 5-10 year period. Here the public health team has pulled together the evidence that could drive a real change for people in Suffolk, helping us live longer in good health. This is in preparation for Suffolk’s first prevention strategy, under the watchful eye of the Health & Wellbeing Board.

In a recent article in the Local Government Chronicle, Graeme Gordon talks about how policy is driven by different kinds of evidence. He describes scientific evidence, the evidence of our own eyes and ears, and political belief systems which he likens to faith, ‘the substance of things hoped for: the evidence of things not seen’.

I hope that this report will drive change in policy in Suffolk. The content of this report speaks in some way to all three kinds of evidence. Being a public health report, the scientific evidence takes centre stage. It is patchy in places but nonetheless compelling. It reminds us that we have all seen friends and family and strangers who are unable to live the life they want to live because of ill health that was potentially preventable. I am yet to meet anyone who wants people to be less well or to direct scarce resources to avoidable treatments for preventable illness.

Compiling the evidence is only the start, the real challenge is putting evidence into action. The Health & Wellbeing Board is committed to preventing ill health, this report illustrates what can we do now, that will impact soon, to narrow the gap between healthy life expectancy and overall life expectancy.

Tessa Lindfield, Director of Public Health and Protection
1. Opening lyrics…

*Preventable disease is needlessly causing early death and disability in Suffolk.*

Introduction

We have all been told that an apple a day keeps the doctor away and that a stitch in time saves nine. That all we need to do to keep the NHS and social care on the straight and true is to ramp up work on prevention, because this will lower demand and then all will be well.

Certainly, government policy supports this view. The 5 Year Forward View – the NHS blueprint, is full of recommendations on prevention, and prevention made it into many of the manifestos in the 2015 election campaigns.

It is tempting to think that prevention is not relevant in a healthy place like Suffolk. Suffolk babies can expect to live into their 80s and longevity is continuing to rise. However, there is another pattern running alongside the trend of increasing lifespans which may be less welcome, that the number of years we can expect to live in good health, healthy life expectancy, is actually falling, which means the number of years living with disability is rising.

Not only is this a worrying trend from an individual’s point of view, it is leading to increasing pressure on health and care services.
Table 1: Male and female life expectancy summary, Suffolk 2009-2013

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Life expectancy</td>
<td>Healthy life expectancy</td>
</tr>
<tr>
<td>2009-11</td>
<td>80.3</td>
<td>65.6</td>
</tr>
<tr>
<td>2010-12</td>
<td>80.6</td>
<td>66.1</td>
</tr>
<tr>
<td>2011-13</td>
<td>80.7</td>
<td>64.8</td>
</tr>
</tbody>
</table>

Healthy life expectancy difference could be chance  
Healthy life expectancy significant difference


*Life expectancy, **Healthy life expectancy

This adds a particular urgency and focus to the prevention of ill health and disability. But is a ‘stitch in time’ approach likely to be effective in reducing pressure on health and care services? And if so, how much can it reduce demand by? Can the benefits be realised quickly or will it take generations to see an effect? And if it does work, what if it leads to us living more years in poor health?

What can Suffolk best do to prevent demand on health and care services in the next 5 to 10 years? This was the challenge laid down by the Suffolk Health & Wellbeing Board in 2015, in preparation for a new Suffolk Prevention Strategy, and is the focus of this report.
This report is not intended to cover all that we could do to prevent ill health or decrease demand in health and social care, and is not the only question to answer. In our response, we have chosen to focus our analysis on the potential impact on the most used service areas and on actions where there is evidence of effectiveness. Inevitably, some areas have been ignored and there is no doubt that this is the beginning of a significant programme of work, not the end of it.

This report identifies actions with potential to drive down demand through maximising healthy life expectancy; and estimates the potential impact on the system, particularly hospital care and social care. We look at actions to prevent illness before it starts and actions to prevent progression of illness. The actions are not just for health and care services themselves, but for the whole Suffolk system to take note.

**Why this is important and why now?**

There are so many idioms about prevention, and these have provided inspiration for some of the chapters in this report. Instinctively prevention makes sense. No one would choose to be unwell if it can be avoided, and no one wants their hard earned tax money spent on potentially unnecessary treatments and services. But despite this instinctive acceptance, we are not changing the way we behave as residents, neighbours and professionals anywhere near fast enough to make the difference we need to see.

This report is needed because we are running out of time. We are on our way to being less healthy now than our predecessors and if we want this to change, we need to change as individuals, families, communities and professionals.
2. Choosing the right record

Defining the problem

Methodology - Why we selected the areas to focus on

The information on who uses high end services for health and care in Suffolk is patchy. Social care datasets do not contain information on the reasons why people need care, only the care they need. Demographic information is incomplete and cannot be matched with NHS records yet, although this is in the pipeline. We do know that publically funded social care is a small proportion of social care in Suffolk, with most people funding their own care. However when looking at the public spend on social care, it is clear that over 40% is on older people and 20% is on people with learning disability.

NHS episodes of care, and programme budgeting data tells some of the story, with close to half of hospital admissions and over half of all inpatient costs in Suffolk attributable to people over the age of 65. Some reasons for admission and spend on health services stand out from others, some are preventable in the 5-10 year timeframe, and some are not. The detail of this analysis is available below or at www.healthysuffolk.org.uk.

We made an early decision to exclude severe mental ill health from our analysis, even though we are aware of the overlaps between mental ill health and physical ill health. Services for acute mental illness are often discrete from physical illness and the prevention opportunities are different from those for physical ill health. However services for mental health are a significant cost and have had less attention. We plan to examine this in more detail in the 2016 report.
We also decided to exclude children from our analysis. Last year we focused on children and the prevention opportunity in early years to lay down foundations for a healthy life. Chapter 7 looks back at the impact of last year’s report and the actions against each of the recommendations.

We selected the population over 65, as they are the majority cohort for health and social care use, we then used emergency admission to hospital as a proxy for high end health service use. Finally we selected the commonest reasons for admission which are amenable to prevention within the next 10 years.
3. Finding the right track

Focus population groups

In this chapter we look at local data to determine the areas of greatest spend and demand on health and care in Suffolk, and explore the drivers for this demand. In order to determine the “preventable demand” in Suffolk we analysed readily available health and social care cost and activity data as follows:

- Hospital activity data for Suffolk residents – we looked at Secondary Uses Service (SUS) data (Healthcare Resource Group (HRG) data) for the period 2011/12 - 2013/14 to determine the number of provider spells for all causes and the associated financial cost
- Programme budgeting – we looked at data from the 2013/14 Clinical Commissioning Groups (CCG) programme budgeting returns to broadly define areas of high spend by CCGs in Suffolk
- Emergency (unplanned) admissions to hospital among Suffolk residents – we looked at Hospital Episode Statistics (HES) data for the years 2011/12 – 2013/14 by age and International Classification of Diseases (ICD) -10 chapter codes
- Social care gross spend (care purchasing spend) and activity data for the period 2011/12 to 2014/15

Hospital activity

The findings from our analysis of hospital activity data between 2011/12 and 2013/14 is summarised in tables 2 and 3 below. These show the number and cost of all hospital admissions (planned and unplanned) among Suffolk residents by age-group. From the analysis, it is evident that over 65s are responsible for just over 45% of all inpatient spells and close to 54% of the cost of inpatient spells.
Table 2: Number and distribution of inpatient spells for all causes for all Suffolk residents by age (2011/12-2013/14)

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>0-14</th>
<th>15-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65-84</th>
<th>85+</th>
<th>All ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spells</td>
<td>37,520</td>
<td>32,761</td>
<td>90,895</td>
<td>128,410</td>
<td>190,411</td>
<td>48,064</td>
<td>528,061</td>
</tr>
<tr>
<td>% distribution of numbers of provider spells by age</td>
<td>7.1%</td>
<td>6.2%</td>
<td>17.2%</td>
<td>24.3%</td>
<td>36.1%</td>
<td>9.1%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015)

Table 3: Cost of inpatient spells for all causes for Suffolk residents by age (2011/12-2013/14)

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>0-14</th>
<th>15-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65-84</th>
<th>85+</th>
<th>All ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of provider spells</td>
<td>£36,583,478</td>
<td>£37,256,884</td>
<td>£113,898,856</td>
<td>£172,329,468</td>
<td>£312,573,911</td>
<td>£106,681,695</td>
<td>£779,324,293</td>
</tr>
<tr>
<td>% distribution of financial costs of provider spells by age</td>
<td>4.7%</td>
<td>4.8%</td>
<td>14.6%</td>
<td>22.1%</td>
<td>40.1%</td>
<td>13.7%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015)

We then undertook additional analysis of healthcare spend using programme budgeting, which is discussed next.
Programme budgeting

What is programme budgeting?
Programme budgeting is a technique that allows CCGs to analyse their expenditure on specific healthcare conditions. Diseases are categorised into 23 areas known as “programme budgets” based on the World Health Organisation International Classification of Diseases (WHO ICD). The amount spent on health and social care is mapped or allocated to a programme budgeting category. The data is then used to determine the health gain from investments and to identify areas where potential shifts could be made to maximise benefits, reduce health inequalities and improve value for money (Department of Health (DH) 2012).

How is programme budgeting data derived?
Calculating programme budgeting data is complex and CCGs have to follow standard guidance, procedures and mappings when calculating programme budgets. In programme budgeting, estimates of expenditure are calculated using the price paid for specific activities and services. Accident and emergency (A&E) expenditure is also apportioned across the different programme budgeting categories.

It is important to note that spending on child health is not split out separately within programme budgeting, so it is not possible to assess the relative level of spend on children’s services using this approach. In addition, not all healthcare activity or services can be classified directly to a programme budgeting category or care setting. When it is not possible to reasonably estimate a programme budgeting category, the expenditure is classified as ‘other’. Because the allocation of expenditure to programme budgeting subcategories is not always straightforward, it is recommended that the data is used with caution.

What does the Suffolk data tell us?
In our analysis, we reviewed the programme budget spend for the three Suffolk CCGs i.e. Great Yarmouth and Waveney CCG (GYWCCG), Ipswich and East Suffolk CCG (IESCCG) and West Suffolk CCG (WSCCG). GYWCCG expenditure was apportioned to
reflect the CCG population split between Suffolk and Norfolk. 54% of the population live in Suffolk, so this proportion of spend was attributed to Suffolk.

Table 4 below summarises the total expenditure by all Suffolk CCGs combined. Overall, planned and unplanned care (excluding maternity and reproductive health) take up a similar proportion of annual spend whilst the “other” category takes up almost half of the total CCGs annual spend.

Table 4: Suffolk* - Programme budgeting analysis, 2013-14

<table>
<thead>
<tr>
<th></th>
<th>Total annual spend (£m)</th>
<th>% of Total annual spend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unplanned care</td>
<td>222.0</td>
<td>26.5</td>
</tr>
<tr>
<td>Planned care</td>
<td>220.4</td>
<td>26.3</td>
</tr>
<tr>
<td>Other**</td>
<td>394.4</td>
<td>47.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>836.8</td>
<td></td>
</tr>
</tbody>
</table>


*Suffolk - all Suffolk CCGs combined

**Other - programme budgeting category comprising: primary care prescribing, condition not known, multiple conditions, condition data not recorded or reported, pass through payments and miscellaneous other.

Table 5 summarises Suffolk CCGs total spend, and spend on planned and unplanned care disaggregated to show the six highest areas of programme spend. The figures shown are for all Suffolk CCGs combined.
Table 5: Suffolk*: Programme budgeting analysis - Highest areas of programme spend, 2013-14

<table>
<thead>
<tr>
<th>Unplanned Care – TOTAL CCG</th>
<th>Planned Care – TOTAL CCG</th>
<th>Total Care – TOTAL CCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Specialty</td>
<td>Annual spend, £m</td>
</tr>
<tr>
<td>1</td>
<td>Trauma and injuries</td>
<td>31.2</td>
</tr>
<tr>
<td>2</td>
<td>Maternity and reproductive</td>
<td>26.2</td>
</tr>
<tr>
<td>3</td>
<td>Respiratory</td>
<td>23.7</td>
</tr>
<tr>
<td>4</td>
<td>Other</td>
<td>23.6</td>
</tr>
<tr>
<td>5</td>
<td>Gastro-intestinal</td>
<td>21.6</td>
</tr>
<tr>
<td>6</td>
<td>Neurological</td>
<td>17.4</td>
</tr>
<tr>
<td>Remaining specialties</td>
<td>78.3</td>
<td>35.3</td>
</tr>
</tbody>
</table>


*Suffolk - all Suffolk CCGs combined
We then undertook further analysis of spend by individual CCG. When total spend was considered the picture was very similar across all three CCGs. The six highest spending programme budgeting categories were:

- Mental health disorders
- Other – comprises primary care, condition not known, multiple conditions, data not recorded, pass through payments and other problems of the musculo-skeletal system sub-categories
- Problems of circulation – comprises coronary heart disease, cerebrovascular disease, problems of rhythm and problems of circulation sub-categories
- Problems of the gastro-intestinal (GI) system – comprises upper GI, lower GI, hepato-biliary and problems of the gastrointestinal system sub-categories
- Problems of respiratory system (for GYWCCG and WSCCG) – comprising obstructive airways disease, asthma and problems of the respiratory system sub-categories, and
- Problems due to trauma and injuries (for IESCCG)

When unplanned care spend was considered on its own, all three CCGs had programme budget categories “other”, problems due to trauma and injuries and problems of the circulatory, respiratory and gastrointestinal systems as high spend areas. In addition to these, maternity and reproductive health featured as a high spend area for IESCCG and WSCCG whilst neurological problems (comprising chronic pain and neurological subcategories) featured as a high spend areas in GYWCCG.

We sought to explore further the unplanned care expenditure and demand by analysing HES data on unplanned care activity and costs. This was selected as a focus because we know that nationally and locally, emergency admissions have continued to rise over the years. Unlike planned (elective) care, admissions for unplanned care (emergency admissions) tend to be unpredictable and happen at short notice (Purdy 2010). Unplanned care is thus often costly and in times of extreme pressure, can
lead to the cancellation or disruption of planned care activity as was seen in many health systems including Suffolk last winter (Keeble et al (2015a), Keeble et al (2015b)).

We know from published evidence that over 70% of hospital bed days are as a result of emergency admissions (Poteliakhoff and Thompson 2011), signifying that this is a big driver for demand on health and care. It is also thought that a lot of unplanned care is amenable to prevention; hence there have been several efforts to reduce emergency admissions to hospital nationally. However, the evidence on what works is less clear (Roland 2012).

The finding from our analysis of emergency (unplanned) hospital activity data for Suffolk is presented next.

**Emergency admissions**

**Emergency (unplanned care) admissions in Suffolk analysed by age**

Our analysis of emergency activity data showed that between 2011/12 and 2013/14 unplanned admissions were highest in the 65-84 age group. Notably, the over 65’s on their own were responsible for about 48% (94,403) of all emergency admissions in Suffolk. These findings are well illustrated in the chart below.
Figure 1: Emergency admissions among residents of Suffolk County for all causes by age band between 2011/12 – 2013/14

Source: HES dataset (2015)

Figure 2 below presents the same data disaggregated by year. The findings show that between 2011/12 and 2012/13, emergency admissions increased across all age bands except in the 45-64 year olds where this fell. The largest rise in emergency admissions was in the over 85’s (10.1% rise from 2011/12 baseline), followed by the 0-14 year age band (6.5% rise from 2011/12 baseline) and
the 65-84 year age band (5.3% rise from 2011/12 baseline). Further analysis would be required to determine whether this observation was statistically significant or whether the observation was due to chance.

Figure 2: Emergency admissions among residents of Suffolk County for all causes by age band and year

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>8660</td>
<td>9102</td>
<td>9223</td>
</tr>
<tr>
<td>15-24</td>
<td>4095</td>
<td>4102</td>
<td>4276</td>
</tr>
<tr>
<td>25-44</td>
<td>8448</td>
<td>8663</td>
<td>8591</td>
</tr>
<tr>
<td>45-64</td>
<td>12079</td>
<td>12325</td>
<td>11999</td>
</tr>
<tr>
<td>65-84</td>
<td>20738</td>
<td>21891</td>
<td>21838</td>
</tr>
<tr>
<td>85+</td>
<td>9443</td>
<td>10095</td>
<td>10398</td>
</tr>
</tbody>
</table>

Source: HES dataset (2015)

Emergency (unplanned care) admissions in Suffolk analysed by cause

We undertook additional analysis to determine the underlying reasons for emergency admissions in Suffolk. This was done by looking at the emergency admissions by ICD-10 chapter of the primary diagnosis for all Suffolk residents over the three year period from 2011/12 – 2013/14. The findings are illustrated in figure 3 below.
Figure 3: Emergency admissions by primary cause, for all age Suffolk residents, 2011-2014 (ICD-10 chapters with 1+ emergency admissions during period)

Source: HES dataset (2015)
We also undertook further analysis to determine the cause(s) of emergency admissions by age, focusing on those aged over 65. This group on its own was accountable for close to half of all unplanned admissions, which also increased over this time period. Table 6 below summarises the findings. It shows the top five underlying reasons for emergency admission between 2011/12 and 2013/14 for all Suffolk residents and in the over 65’s.

Table 6: Top five causes (ICD-10 chapter of primary diagnosis) for emergency admissions for all Suffolk residents and in selected age-bands between 2011/12 – 2013/14

<table>
<thead>
<tr>
<th>Rank</th>
<th>All Suffolk residents</th>
<th>Age band</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>65-84 years</td>
</tr>
<tr>
<td>1</td>
<td>Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified (18)</td>
<td>Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified (18)</td>
</tr>
<tr>
<td>2</td>
<td>Injury, poisoning and certain other consequences of external causes (19)</td>
<td>Diseases of the circulatory system (09)</td>
</tr>
<tr>
<td>3</td>
<td>Diseases of the respiratory system (10)</td>
<td>Diseases of the respiratory system (10)</td>
</tr>
<tr>
<td>4</td>
<td>Diseases of the circulatory system (09)</td>
<td>Injury, poisoning and certain other consequences of external causes (19)</td>
</tr>
<tr>
<td>5</td>
<td>Diseases of the digestive system (11)</td>
<td>Diseases of the digestive system (11)</td>
</tr>
</tbody>
</table>

Source: HES dataset (2015)
The primary diagnosis code identified as ICD-10 chapter 18 (symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified), appeared as a leading cause of admissions in the over 65’s and for all Suffolk residents. We therefore analysed the distribution of emergency admissions within this primary diagnosis chapter over the same time period. It is likely from the profile of conditions identified, that these were admissions due to conditions that were difficult to code for e.g. unknown and unspecified causes of morbidity, pain in the throat and chest, etc. In the over 85’s for example, conditions identified in this category included those quite often associated with frailty e.g. symptoms and signs involving the nervous and musculoskeletal systems, syncope and collapse, symptoms and signs involving cognitive functions and awareness, senility, retention of urine, malaise and fatigue, dysphagia, abnormalities of gait and mobility, etc. (see figure 4).

“Injury, poisoning and certain other consequences of external causes” (ICD-10 chapter 19) also featured in the top five leading causes of admission in all Suffolk residents and in those aged over 65. It is worth noting that the primary diagnosis code in this category describes the actual injury and not it’s underlying cause. We therefore looked at the associated secondary diagnosis codes to try and understand the actual cause of the injury or poisoning. The findings (see Figures 5 and 6) showed that underlying conditions like falls, hypertension and atrial fibrillation for example, were responsible for many emergency admissions.
Figure 4: Emergency admissions with primary diagnosis in ICD-10 chapter 18 (symptoms and signs not elsewhere classified, from 2011/12-2013/14, in all Suffolk residents age 85+)

Source: HES dataset (2015)
Figure 5: Emergency admissions with primary diagnosis in ICD-10 chapter 19 in Suffolk residents aged 65-84 years, split by secondary diagnosis (2nd-5th position), all Suffolk residents age 65-84, 2011-2014

Source: HES dataset (2015)
Figure 6: Emergency admissions with primary diagnosis in ICD-10 chapter 19 (injury and poisoning), split by secondary diagnosis code (2nd-5th position) in Suffolk residents age 85+, 2011-2014

Source: HES dataset (2015)
Diseases of the respiratory system and diseases of the circulatory system also featured as leading causes of emergency admissions for all Suffolk residents and in the over 65’s.

**Social care spend and activity**

An analysis of available data on gross adult social care spend and customer numbers for the years 2011/12 to 2014/15 is presented in tables 7 to 10 below. This shows the trend in care purchasing spend by client group over the time period. It includes all care that was purchased from external providers, both in the private sector and the voluntary and community sector (VCS). Data on customer numbers for 2011-12 was however not available.

As illustrated in table 7 below, overall spend on older people increased over this time period (from 30% of gross budget spend in 2011-12 to 42% in 2014-15) despite the average number of customers falling. Spending on the residential care, home care and direct payments showed a year on year rise while that on nursing fell. It is worth noting that spending on residential care in particular was significantly lower in 2011-12 and 2012-13 compared to the two successive years. This was mainly because Suffolk County Council had some in-house services until November 2013. These were divested from December 2013, hence the apparent rise in costs from 2011-12 to 2013-14. The period 2011-12 was the last full year pre-divestment, 2013-14 the first full year post-divestment and 2012-13 the transitional year.

Other factors that may have contributed to the increased spend on older people include the increasing complexity of customer needs, making it more expensive to look after them. Another factor is a small inflationary uplift of about 2% per annum.
Table 7: Types of care and spend, average customer numbers, 2011-2015

<table>
<thead>
<tr>
<th>Client group</th>
<th>Care type</th>
<th>&lt;-------- Gross Spend in financial year --------&gt;</th>
<th>&lt;-------- Average number of customers --------&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older people (65+)</td>
<td>Top 6 Types of Care</td>
<td>£m</td>
<td>£m</td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td>32.092</td>
<td>41.19</td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td>18.222</td>
<td>17.879</td>
</tr>
<tr>
<td>Home care</td>
<td></td>
<td>18.636</td>
<td>20.308</td>
</tr>
<tr>
<td>Very sheltered</td>
<td></td>
<td>8.885</td>
<td>6.672</td>
</tr>
<tr>
<td>Direct payments</td>
<td></td>
<td>2.034</td>
<td>3.451</td>
</tr>
<tr>
<td>Day care</td>
<td></td>
<td>1.206</td>
<td>1.598</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td>Older people (65+)</td>
<td><strong>81.075</strong></td>
<td><strong>91.097</strong></td>
</tr>
<tr>
<td>ACS gross budget (per budget book)</td>
<td></td>
<td>266.375</td>
<td>260.664</td>
</tr>
<tr>
<td>% of gross budget spent on service area</td>
<td></td>
<td>30%</td>
<td>35%</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

Learning disabilities (LD) spend as a proportion of the gross budget also increased from 17% in 2011-12 to 20% in 2014-15. The average number of customers (aged 18-64) also increased over the same time period. This can be attributed to more individuals with LD needs surviving into adulthood. A large proportion of these customers have higher needs which in turn cost more to meet. The increase in life span also means these customers are cared for longer. As they get older their care needs increase, again resulting in an increase in care costs.
Table 8: Learning disability client group spend, and average customer numbers, ages 18-64, 2011-2015

<table>
<thead>
<tr>
<th>Client group</th>
<th>Care type</th>
<th>&lt;&lt;------- Gross spend in financial year -------&gt;&gt;</th>
<th>&lt;&lt;------- Average number of customers -------&gt;&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning disabilities (18-64)</td>
<td>Top 6 types of care</td>
<td>£m</td>
<td>£m</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>0.362</td>
<td>0.324</td>
</tr>
<tr>
<td></td>
<td>Home care</td>
<td>2.467</td>
<td>3.45</td>
</tr>
<tr>
<td></td>
<td>Direct payments</td>
<td>3.715</td>
<td>4.372</td>
</tr>
<tr>
<td></td>
<td>Day Care</td>
<td>1.639</td>
<td>1.907</td>
</tr>
<tr>
<td>Sub total</td>
<td>Learning disabilities (18-64)</td>
<td>46.522</td>
<td>47.861</td>
</tr>
<tr>
<td></td>
<td>ACS gross budget (per budget book)</td>
<td>266.375</td>
<td>260.664</td>
</tr>
<tr>
<td></td>
<td>%age of gross budget spent on service area</td>
<td>17%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

Spending on mental health has remained flat at 3% of the gross budget. The number of customers in this client group went up slightly then fell. In 2014-15 the average number of customers was lower than that in 2013-14.
Table 9: Mental health client group spend, and average customer numbers, ages 18-64, 2011-2015

<table>
<thead>
<tr>
<th>Client group</th>
<th>Care type</th>
<th>&lt;--------- Gross spend in financial year ---------&gt;</th>
<th>&lt;--------- Average number of customers ---------&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental health (18-64)</td>
<td>Top 6 Types of Care</td>
<td>£m</td>
<td>£m</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
<td>2.399</td>
<td>2.356</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>0.588</td>
<td>0.779</td>
</tr>
<tr>
<td></td>
<td>Home care</td>
<td>0.039</td>
<td>0.026</td>
</tr>
<tr>
<td></td>
<td>Supported</td>
<td>3.605</td>
<td>3.8</td>
</tr>
<tr>
<td></td>
<td>Direct Payments</td>
<td>0.355</td>
<td>0.302</td>
</tr>
<tr>
<td></td>
<td>Day Care</td>
<td>0.7</td>
<td>0.344</td>
</tr>
<tr>
<td>Sub total</td>
<td>Mental health (18-64)</td>
<td>7.686</td>
<td>7.608</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)
Table 10: All customer group spend, and average customer numbers, 2011-2015

<table>
<thead>
<tr>
<th>Client group</th>
<th>Care type</th>
<th>&lt;--------- Gross spend in financial year ---------&gt;</th>
<th>&lt;--------- Average number of customers ---------&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2011-12</td>
<td>2012-13</td>
</tr>
<tr>
<td>Top 6 types of care</td>
<td>Residential</td>
<td>£56.3</td>
<td>£63.967</td>
</tr>
<tr>
<td></td>
<td>Nursing</td>
<td>£21.679</td>
<td>£21.132</td>
</tr>
<tr>
<td></td>
<td>Home care</td>
<td>£25.735</td>
<td>£28.524</td>
</tr>
<tr>
<td>All customer groups</td>
<td>Supported</td>
<td>£33.802</td>
<td>£32.748</td>
</tr>
<tr>
<td></td>
<td>Direct payments</td>
<td>£10.373</td>
<td>£12.972</td>
</tr>
<tr>
<td></td>
<td>Day care</td>
<td>£4.964</td>
<td>£5.089</td>
</tr>
<tr>
<td>Sub total</td>
<td>All customer groups</td>
<td>£152.853</td>
<td>£164.432</td>
</tr>
<tr>
<td>ACS gross budget (per budget book)</td>
<td>266.375</td>
<td>260.664</td>
<td>251.405</td>
</tr>
<tr>
<td>%age of gross budget spent on service area</td>
<td>57%</td>
<td>63%</td>
<td>73%</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

Table 10 summarises spend on all customer groups. Overall, the amount spent as a proportion of the gross budget increased over time, from 57% in 2011-12 to 71% in 2014-15. The average number of customers also increased over the time period. From the data tables above it is evident that a large proportion of adult social care budget is spent on care purchasing to support those most vulnerable in society with long term social care needs.
Diseases and risk factors

Having explored the epidemiology of demand in Suffolk we now have a picture of some of the drivers behind this demand. Ageing is a big factor.

Summary of key conditions amenable to prevention selected from the analysis above

We know that life expectancy in Suffolk currently stands at 80.7 years for men and 84.1 years for women, and as a result we are living longer. Earlier we highlighted that the length of time before we die when we are not healthy is increasing, and is 15.9 years in men and 18 years in women. As we age, about that half of us will develop at least two or more long term conditions and live with these in the last 15 years of our lives. However, how soon this happens will vary across different population groups. Deprivation, for example, has been shown to accelerate this process. Multi-morbidity can develop up to 10-15 years earlier in people living in more deprived areas. One of the comorbidities in this population group is also likely to be a mental health disorder e.g. depression or anxiety. Those affected experience a poorer quality of life, psychological distress, reduced functional capacity, increased risk of prolonged hospitalisation and complications following treatments, thus incurring higher health and care costs. Notably, the poor outcomes associated with multi-morbidity are quite often as a result of inadequate management of the underlying conditions. Current systems and guidelines are designed to manage individuals with single diseases, meaning that conditions not designated as the “primary” diagnosis end up being under-treated (Prados Torres et al 2014). These factors all play a role in determining an individuals’ healthy life expectancy.

National data suggests that people aged over 65 account for about 51% of gross local authority spending on adult social care and two thirds of the primary care prescribing budget. About 70% of health and social care spend is on people with long-term conditions, who are likely to be older as well. Associated with this is evidence that emergency admissions are more common in the
older age-groups and also in people with comorbidities (Oliver et al 2014), which is also true for Suffolk where we have an ageing population.

Recent findings from the South Somerset Symphony Project, a programme designed to improve collaborative care particularly for people with complex conditions, showed that an individual’s morbidity profile (rather than their age) was the biggest driver for health and social care costs. The more co-morbidities an individual had, the more likely they were to require care across diverse settings and the higher their costs. Increasing age was however also associated with increasing costs but age alone did not explain the variation in costs. Analysis showed a correlation between age and multi-morbidity, meaning that the older a person was, the more conditions they were likely to have and the higher the associated health and social care costs (Kasteridis et al. 2014).

It is therefore important that the health and care system in Suffolk adapts to the changing demographic profile – creating a system that responds to the needs of an older population, where an increasing number of people are living with multi-morbidity, and one which takes a more preventative approach.

A systematic review on multi-morbidity patterns showed that there was an association between some of the health problems faced by people with multi-morbidities. Despite the heterogeneity in the studies included in the review, three distinct patterns were observed – cardiovascular and metabolic diseases, mental health problems and musculoskeletal disorders. In the first category, the commonest diseases were diabetes, hypertension, heart disease, hyperlipidaemia and obesity. The second group had at least one mental health condition, the commonest being depression and anxiety. These were often associated with organic diseases such as thyroid problems, neurological disorders like dementia, pain, asthma or chronic obstructive pulmonary disease (COPD), musculoskeletal disorders, obesity and gastro-oesophageal reflux disease (GERD). In the third group, at least one musculoskeletal problem was identified, namely arthropathy, back or neck pain and osteoporosis. These were associated with obesity, prostatic
hypertrophy and GERD (Prados Torres et al 2014). These associations suggest that there may be similarities in the underlying causal mechanisms which is of interest when considering potential preventive interventions.

We have therefore identified a number of key conditions amenable to prevention in the short to medium term (3-5 years) and underlying risk factors which contribute to the development of these conditions and subsequently leading to high cost demand.

These conditions include:

- Cardiovascular disease
- Diabetes
- Respiratory disease (focusing on Chronic Obstructive Pulmonary Disease)
- Frailty
- Falls
We also look in more detail at a number of risk factors which contribute to the development of these diseases, and hence to high cost demand. These include:

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High blood pressure (also known as hypertension)</td>
<td>Cardiovascular disease</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>Diabetes</td>
</tr>
<tr>
<td>Smoking</td>
<td>Respiratory disease</td>
</tr>
<tr>
<td>Alcohol use</td>
<td>Frailty</td>
</tr>
<tr>
<td>Failure to maintain a healthy weight</td>
<td>Falls</td>
</tr>
<tr>
<td>Failure to be physically active</td>
<td>Dementia</td>
</tr>
<tr>
<td>Being lonely or socially isolated</td>
<td></td>
</tr>
<tr>
<td>Patients from high risk groups not being vaccinated against flu and pneumonia</td>
<td></td>
</tr>
<tr>
<td>Having diabetes which significantly increases your risk of developing other diseases</td>
<td></td>
</tr>
<tr>
<td>Being a carer for someone else increases your risk of ill health, (if the care then stops this often results in the one being cared for either being admitted to hospital or residential care)</td>
<td></td>
</tr>
</tbody>
</table>
Preventable disease and modifiable risk

Many risk factors have an impact on more than one preventable disease, as illustrated below.

Table 11: Risk factors and preventable disease links

<table>
<thead>
<tr>
<th>Modifiable risk factor</th>
<th>Cardiovascular disease</th>
<th>Diabetes</th>
<th>Respiratory</th>
<th>Frailty</th>
<th>Dementia</th>
<th>Falls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking reduction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthy weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social isolation and loneliness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support for carers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Pressure Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AF detection and management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes detection and management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Linked factor and disease
Not applicable
Currently unlinked

Source: Suffolk County Council (2015b)
4. All the current hits remastered

Identifying and managing existing conditions

This section focuses on the opportunities to prevent ill health resulting in high cost demand through secondary and tertiary prevention actions. The major causes of high cost demand potentially preventable through improved detection and management include:

- Cardiovascular Disease (CVD) with a focus on heart attack and stroke
- Respiratory Disease with a focus on COPD
- Frailty and related conditions with a focus on falls and dementia

Cardiovascular disease

The Suffolk picture

Cardiovascular disease (CVD) is a general term that describes a disease of the heart or blood vessels. Blood flow to the heart, brain or body can be reduced as the result of a blood clot (thrombosis), or by a build-up of fatty deposits inside an artery that cause the artery to harden and narrow (atherosclerosis). There are four main types of CVD - coronary heart disease, stroke, peripheral arterial disease and aortic disease. Despite recent reductions in mortality due to cardiovascular disease, the Global Burden of Disease Study has demonstrated that the UK does not perform well compared with a range of similar countries in terms of disability and mortality (Murray et al 2013).
• Too many people (about 500 a year) die early from CVD in Suffolk (PHE 2015)
• There is good evidence that much of the disease is preventable (15-25% of CVD deaths are linked to smoking)
• Tackling the substantial and widening excess burden of death and ill health due to CVD in disadvantaged communities is a major challenge in Suffolk
• Social gradients in the major lifestyle risk factors can explain approximately three quarters of this excess – smoking alone can explain more than half
• Treatment for the disease, although expensive, is becoming increasingly effective at improving the quality and length of life for individual patients. However, action is required to continue to maximise population coverage of effective treatments and to target initiatives to reduce lifestyle risk factors towards the most deprived communities in Suffolk

Circulatory disease is currently one of the highest causes of unplanned non-elective emergency admissions in Suffolk, with over 7,300 hospital admissions during 2013/14, one in ten of all emergency admissions during this period. Over two thirds of these emergency admissions were for heart attacks, strokes, atrial fibrillation, angina, hypotension or heart failure.

In addition to the clinical burden, CVD leads to significant costs to both the NHS and social care. This can be illustrated using 2015 as an example. Applying population incidence rates of a cardiovascular event from the National Institute of Health and Care Excellence (NICE) Prevention of Cardiovascular Disease costing template (NICE 2010), to the population of Suffolk, it is estimated that during 2015:

• 5,700 Suffolk residents will suffer a major cardiovascular event, including 2,000 Suffolk residents suffering a heart attack and 1,757 Suffolk residents suffering a stroke
• The NHS costs of caring for these people during 2015 will be approximately £27 million (NICE 2010, NICE 2014)
• Many stroke patients may also need ongoing social support, for example care at home or a nursing home place (Royal College of Physicians (RGP) 2014). It is estimated that these residential, nursing and home care costs in 2015 will be £3 million, excluding patients who pay for their own care
• In addition, some patients will need ongoing rehabilitation, support and care; over five years these additional support costs add up to an additional £45m (Nice 2010)

Cardiovascular disease also leads to indirect costs to the Suffolk economy. The cost of informal care and lost economic productivity due to cardiovascular illness and the death of workers in Suffolk may be in the order of £227 million each year (Allender et al 2008).

There are a number of risk factors for CVD including ‘fixed’ risk factors of age, sex and genetic background (DH 2013). The modifiable risk factors for CVD include:

• Lifestyle factors including smoking, physical inactivity, poor diet, obesity and alcohol
• High blood pressure (sometimes known as “hypertension”), elevated cholesterol, atrial fibrillation and diabetes

This next section covers the high impact interventions for improving the detection and management of the following risk factors for cardiovascular disease in Suffolk:

• Hypertension
• Atrial Fibrillation
• Diabetes
Hypertension

Hypertension, defined as a persistent raised blood pressure of 140/90mmHg, affects more than one in four adults in Suffolk. Hypertension is arguably the most important modifiable risk factor for coronary heart disease (the leading cause of premature death in the UK) and stroke (the third leading cause). It is also an important cause of heart failure and chronic kidney disease. This has ‘earned’ hypertension a reputation as the ‘silent killer’, making it a key priority for prevention, detection and control, and one of the most important challenges facing public health today (Faculty of Public Health 2005). Recent analysis from the USA suggests that eliminating hypertension would prevent more deaths from cardiovascular disease than eliminating smoking (McCarthy 2015).

Improvements in tackling blood pressure in the last decade, partly due to dietary salt reduction at a national level, have prevented or postponed many deaths. However, it is estimated that only four in ten of English adults with high blood pressure are both aware of their condition, and managing it to the levels recommended.

Hypertension is often preventable. Modifiable risk factors include excess salt, overweight and obesity, physical inactivity and excess alcohol. Hypertension is more common in people with diabetes – in England as many as 70% of adults with Type 2 diabetes have hypertension doubling the risk of a cardiovascular event. People from the most deprived areas are 30% more likely to have high blood pressure and the condition disproportionately affects some ethnic groups including black Africans and Caribbeans. Tackling hypertension has the potential to improve both health outcomes and health inequalities (PHE 2014).

Tackling hypertension in Suffolk will require a system-wide approach with professional leadership and collaboration for improvement across the three key elements of the blood pressure ‘pathway’ - prevention, detection and management.
The Suffolk picture

The detection of hypertension

Nearly 115,000 people in Suffolk have already been diagnosed with hypertension, just below 1 in 5 of the adult population (Health and Social Care Information Centre (HSCIC) 2014). Recent Public Health England data suggests that, despite this high number of diagnosed patients, there are still an estimated 91,000 people with hypertension in Suffolk who have not been diagnosed (PHE 2015a).

Figure 7: Estimated observed / expected prevalence of hypertension and undiagnosed patients in Suffolk, by CCG*

* Note:
WS = West Suffolk CCG
I&ES = Ipswich and East Suffolk CCG
GY&W = Great Yarmouth and Waveney CCG

* GY&W includes Suffolk proportion of CCG population only
Source: Public Health Suffolk analysis, Public Health England Cardiovascular Intelligence Packs by CCG, March 2015
What are we doing about it?

The diagnosis of hypertension is largely carried out in general practice. General advice is for adults to have their blood pressure tested at least every five years. Once tested, NICE guidelines suggest that all adults should have their blood pressure re-measured within five years, and this should be done more frequently for people with high-normal blood pressure. Many adults will have it checked as part of routine long term condition management. GP practices have national Quality and Outcome Framework (QOF) targets which relate to the detection of hypertension and the maintenance of a practice register of all their patients with hypertension. The measurement of blood pressure is also included in the NHS Health Check, which has above average acceptance levels in Suffolk.

What else should we do

Public Health England has suggested that a 15% increase in hypertension diagnosis rates should be achievable nationally (PHE 2014). If Suffolk could achieve this increase, an additional 17,000 people would be diagnosed. This would bring significant benefits in terms of preventing strokes, heart attacks and diseases including diabetes.

As well as increasing the overall diagnosis rates of hypertension in Suffolk, it is also important to note that the hypertension detection rates currently vary significantly between practices in Suffolk. Public Health England report a two-fold variation in local observed to expected rates at practice level (PHE 2015a). While genuine local factors may account for some of this difference, variation to this extent warrants further investigation as it may be contributing to inequalities. National data suggests that diagnosis rates are lowest among males and younger adults.
The requirements for accurate diagnosis of hypertension have changed over time, to try and combat both “white coat” hypertension (high readings which are exaggerated compared to readings taken outside of healthcare settings because patients are nervous), and “masked” hypertension (where a high reading only shows outside the clinic). NICE guidelines suggest that a diagnosis can only be made when a patient has a clinic blood pressure of 140/90mmHg or higher, and either subsequent ambulatory blood pressure monitoring daytime average or home blood pressure monitoring average of 135/85 mmHg or higher. The capacity required to achieve this home or ambulatory blood pressure monitoring requirement nationally is recognised to still be in development.

Suffolk can also consider the provision of opportunistic testing, in addition to routine monitoring by primary care. The voluntary sector typically provides independent testing initiatives, such as Blood Pressure UK’s “Know Your Numbers” week, or the Stroke Association’s “Know Your Blood Pressure” events. In addition, both workplace testing and testing by trained volunteers have proved successful routes for improving patients’ understanding of their blood pressure in international studies; similar approaches could be evaluated for local use.

**What shouldn’t we do**

We know that single recording of blood pressure in a clinical setting does not result in an accurate reading for the purposes of diagnosis. Ambulatory or home monitoring is also required.

There is no evidence that population-wide screening for high blood pressure is clinically or cost effective.
What can we achieve?

Over five years it is estimated that up to 136 deaths, 255 strokes and 171 heart attacks, together with £7.2 million of health and social care costs, could be avoided if Suffolk achieved a 15% increase in the proportion of adults who have had their high blood pressure diagnosed.

Using an approach known as ‘the Number Needed to Treat’ (NNT) (The NNT.com 2015) it is possible to estimate the reductions in deaths, strokes and heart attacks that would occur if 17,000 more people in Suffolk were diagnosed and optimally treated for their hypertension. The potential clinical impact of this over five years is substantial, and is shown below.
Figure 8: Clinical impact of increasing hypertension diagnosis rates in Suffolk by 15% over 5 years, by CCG

* Note:
WS = West Suffolk CCG
I&ES = Ipswich and East Suffolk CCG
GY&W = Great Yarmouth and Waveney CCG

Source: Public Health Suffolk analysis, Public Health England Prevalence Cardiovascular Intelligence Packs by CCG, The Number Needed to Treat Group
In addition to these clinical benefits, preventing these strokes and heart attacks will avoid health and social care costs. The estimated financial impact of this over five years, taking into account the additional treatment and diagnosis costs for the newly diagnosed patients is illustrated below in Figure 9. Although all of the additional costs of the newly diagnosed patients, who require GP appointments and medication, fall on the health service, there are net savings to both health and social care.

Figure 9: Net financial impact of increasing hypertension diagnosis rates in Suffolk by 15% over 5 years
These savings have been estimated using the health service costs of strokes and heart attacks calculated by NICE (NICE 2010), and from local social care costs applied to the need for social care reported by the Sentinel Stroke National Audit Programme (RGP 2014). These estimates of the clinical and financial impacts are, however, likely to overstate the achievable benefit for several reasons. They assume that all newly diagnosed patients receive optimal treatment and achieve optimal levels of blood pressure control. They also cannot take into account the fact that the newly diagnosed patients will have varying levels of underlying cardiovascular risk which may mean the benefits from diagnosing them will also vary.

Increasing the rate of diagnosis of hypertension in Suffolk by 15% would mean that the ratio of observed to expected prevalence of hypertension would increase from the current average of 0.55 across the three CCGs to 0.64. While this would lead to a significant improvement in clinical outcomes and costs, international best practice from Canada suggests that an even higher ratio of 0.83 can be achieved (Joffres et al 2013). If Suffolk were able to match this higher ratio, the benefits would increase proportionately, with 453 deaths, 846 strokes and 567 heart attacks being prevented over 5 years, and a larger net financial benefit to the health and social care system.

The management of hypertension -The Suffolk picture

Nearly 115,000 people in Suffolk have already been diagnosed with hypertension, but they are not all achieving optimal levels of blood pressure control. Defining “good blood pressure control” is complex, and varies according to the age of the patient. According to NICE guidance, for adults aged 79 or under, the target level for blood pressure is 140/90mmHg, but patients who are older than 80 should control their blood pressure to a higher target of 150/90mmHg. For reasons of data consistency this analysis uses the higher target of 150/90mmHg. This will have the effect of underestimating the benefits which can be achieved by
improved blood pressure management in Suffolk, since many of the patients will actually be treated to the lower target, as determined by their age.

**What are we doing about it?**

Again, the vast majority of prescribing and ongoing care planning and management for patients with diagnosed hypertension occurs in primary care, sometimes as part of wider long term condition management.

The 2013/14 QOF returns for Suffolk indicate that the majority of patients are managing their blood pressure well, with 77% of them recorded as achieving the QOF standard of 150/90mmHg or below. However, Public Health England analysis demonstrates that in the highest performing demographically similar CCGs, 82.5% of patients are achieving blood pressure controlled to 150/90mmHg or below. This suggests that there may be room for improvement in Suffolk.

The latest NICE guidelines recommend lifestyle interventions for all patients with high blood pressure as both a precursor to treatment and alongside drug therapy where appropriate (NICE 2011). Compared to other CCGs, Suffolk performance for the provision of lifestyle advice is not strong. Data from the same 2013/14 QOF returns reports that all three CCGs in Suffolk are currently in the lowest 25% of CCGs nationally for the provision of lifestyle advice for patients with hypertension (PHE 2015b).

**What else should we consider doing?**

Over 25,000 patients diagnosed with hypertension in Suffolk are not currently managing their blood pressure to the recommended QOF standard in QOF. Public Health England suggests that a 15% increase in the number of Suffolk patients managing their
hypertension well should be achievable. This would increase the number of patients achieving good blood pressure control by nearly 4,000, and would offer significant clinical and cost benefits to Suffolk.

A Cochrane review (Glynn et al 2010) showed that the key to improving blood pressure control was by primary care providing a programme of call and recall, with vigorous anti-hypertensive drug therapy, which follows a stepwise approach to increasing medicine as required, in order to meet treatment targets. Clinical decision systems can support this, particularly improving clinical practice if they are integrated as part of the clinician workflow to provide live recommendations.

Whilst improving the standard of hypertension management achieved overall is critical to the prevention of cardiovascular disease, it is also important to note that the rates of successful hypertension management currently vary. QOF data demonstrates that there is almost a four-fold variation in the proportion of patients achieving good hypertension control between Suffolk practices. While genuine local factors may account for some of these differences, variation to this extent warrants further investigation.

Is there anything we should stop doing or that we know does not work?

Population-wide screening for hypertension is not considered to be clinically or cost-effective.

What can we achieve?

Over five years it is estimated that up to 31 deaths, 58 strokes and 39 heart attacks, together with nearly £2 million of health and social care costs, could be avoided if Suffolk achieved a 15% increase in the proportion of adults with hypertension who lower their blood pressure to 150/90mmHg or below.
These prevented cardiac events in Suffolk have again been estimated using the ‘Number Needed to Treat’ approach.

Figure 10: Clinical impact of improving the management of hypertension in Suffolk over 5 years

Source: Public Health Suffolk; Public Health England Cardiovascular Intelligence Packs by CCG March 2015; NICE CG 127 Costing Template; NICE CG 180 Costing Template; The Numbers Needed to Treat Group
The reduction in health and social care costs resulting from these prevented strokes and heart attacks has also been estimated below (Figure 11). All the additional treatment costs (consisting of GP time and drug costs) are attributed to health, while the benefits accrue across the system. These costs are approximate, and there is the potential for both over and underestimation in the reporting of possible costs and benefits.

Figure 11: Net financial impact over 5 years of improving the management of hypertensive patients in Suffolk, £m.
Atrial fibrillation

Atrial fibrillation (AF) is the most common cardiac arrhythmia (heart rhythm disorder), affecting over 600,000 people in England. AF has an overall prevalence of approximately 5%, which rises from 1% in 55-59 year olds, to 18% in those aged 85 years and above. Men are more frequently affected than women. Heart rhythm disorders lead to high costs for the NHS.

The annual risk of a stroke is five to six times greater for patients with AF. In addition to this increased risk, strokes associated with AF are often fatal, and those patients who survive are left more disabled by their stroke and more likely to suffer a recurrence than patients with other underlying causes of stroke. AF related death rates increased almost three-fold between 1995 and 2010 in England, and it is estimated that over twelve thousand strokes in England are attributable to AF every year (NHS Improvement 2009). The early detection of AF followed by appropriate treatment can reduce the likelihood of stroke by two-thirds and alleviate symptoms.

Recent NICE guidelines recommend that a risk calculation tool should be used to assess the risk of stroke in an individual patient with AF. Previously a tool known as CHADS\_2 was used although a different version of the tool, called the CHA\_2DS\_2-VASC, is now preferred and is included in QOF for 2015/16 (NICE 2014). Anticoagulant drug therapies should be offered to those with a risk score of 1 or more on the CHADS\_2 risk scoring system.

The Suffolk picture – The detection and management of atrial fibrillation

Over 13,500 people in Suffolk are recorded on GP registers as having been diagnosed with atrial fibrillation (HSCIC 2014). However, atrial fibrillation may be clinically silent and remain undiagnosed. Public Health England estimates that there may be approximately 8,000 people with undiagnosed AF in Suffolk (PHE 2015a).
Figure 12: Observed/expected prevalence of atrial fibrillation in Suffolk and undiagnosed patients in Suffolk, by CCG

What are we doing about it?
The vast majority of patients have their atrial fibrillation diagnosed and managed in primary care. Over five years ago, Suffolk took part in an innovative NHS stroke improvement programme scheme which focused on opportunistic screening by pulse palpation of
patients aged over 65 to improve the detection of atrial fibrillation. This approach was found to improve both quality and productivity (NICE 2009), and much of the learning from that scheme is still benefitting the Suffolk system today.

However, Suffolk QOF data for 2013/14 includes an indicator showing the number of patients who have had their stroke risk assessed using CHADS2. While all three Suffolk CCGs are achieving close to 90% of their patients being risk assessed, this performance is in the lowest quartile of CCGs nationally. The highest performing CCG in England risk assessed 99.4% of its patients, suggesting that there is scope for continued improvement locally (PHE 2015b).

National data suggests that 38% of the patients who could benefit from anti-coagulation are not receiving it (Kerr 2014). Suffolk QOF data from 2013/14 suggests a better picture locally - on average only 30% of patients across Suffolk who met the risk scoring criteria were not on anticoagulant therapy.

What else should we do?

Whilst improving the management of AF overall is valuable, it is also important to note that there is also considerable variation in the proportion of patients who have AF and elevated cardiovascular risk, but who are not being treated. In some Suffolk practices everyone eligible is recorded as receiving anticoagulants, while in others only one out of two eligible patients is.

In addition to this variation in treatment, there is also variation between practices in the numbers of patients deemed to be excluded from treatment. Patients can be “excluded” by their practice from particular treatment targets, possibly because the treatment is not safe or appropriate for that individual, or possibly because the patient does not respond to repeated requests to attend the practice for monitoring. On average across the practices in Suffolk, 16% of patients were excluded from the AF QOF treatment target, although there is variation in the rate of exclusion between practices ranging from 0% to 39%. Both of these
sources of clinical variation, which may be contributing to inequalities and to poorer outcomes for some patients, warrant further investigation.

There are a number of initiatives under active consideration by Suffolk CCGs which aim to improve the treatment of local AF patients. It is suggested that participation in whichever of these schemes seems most appropriate locally is likely to be beneficial.

**What shouldn’t we do**

There is no evidence that population wide screening for AF is clinically or cost effective.

**What can we achieve?**

Over five years it is estimated that up to 160 deaths, 267 strokes and £4 million of health and social care costs could be avoided if the three CCGs in Suffolk increased the diagnosis of AF to the highest level that similar CCGs are already achieving.

A similar approach to that used for hypertension can be taken to assess the potential clinical and cost benefits of diagnosing more patients with atrial fibrillation. Analysis of the number needed to treat (NNT) for oral anticoagulant drug treatment in non-valvular atrial fibrillation suggests that, by treating patients with warfarin for 18 months, one stroke can be prevented by treating 25 patients, and one death prevented by treating 42 patients. If the three CCGs in Suffolk raised their diagnosis of AF to the highest level that similar CCGs are already achieving, approximately 2,000 additional patients could be diagnosed. The estimated clinical impact of this increase in diagnosis is illustrated below.
These avoided strokes would also reduce the cost burden for the local health and social care system. Applying the same cost saving estimates per case used for hypertension indicates that the following savings could be achieved in Suffolk over 5 years.
Figure 13: Estimated net financial impact over 5 years of increasing AF diagnoses in Suffolk to highest levels per CCG cohort, £m

It is likely that both the clinical and financial benefits are over-estimated as they assume that the additional patients are not only diagnosed but are then treated optimally (see below). It is of note that the net savings for healthcare appear small as it also meets all of the additional treatment costs. However, the benefits to the health and social care system as a whole are substantial.

Considering the potential to improve the management of AF, over five years it is estimated that up to 107 deaths, 180 strokes and £2.8 million of health and social care costs could be avoided in Suffolk if all diagnosed AF patients who meet the criteria for anti-coagulation were treated optimally.

There is scope for improvement in the treatment of patients with AF in Suffolk. In 2013/14 just over 2,500 patients had diagnosed AF but were not treated with anti-coagulants. Half the untreated patients had been excluded from the treatment target, but if the remaining patients were treated optimally, we can use the NNT to estimate the number of strokes and deaths which could be prevented.
In addition to these clear clinical benefits, preventing these strokes will avoid health and social care costs. The financial impact of this over five years, taking into account the additional treatment and diagnosis costs for the newly diagnosed patients, and the costs of treating patients who have an adverse outcome from anticoagulation, has been estimated (Figure 15). It should be noted...
that all the additional costs are attributed to the health care, as the newly diagnosed patients will require GP appointments and medication. Despite these increased costs for health, the system as a whole will still make net savings.

Figure 15: The net financial impact of improved AF management in Suffolk over 5 years. £m

Cardiac rehabilitation

The Suffolk picture

While improving the detection and management of patients with hypertension and atrial fibrillation in Suffolk to prevent strokes and heart attacks is important, it will not prevent every cardiovascular event. Following a heart attack or a planned coronary intervention, cardiac rehabilitation is recommended by NICE (NICE 2010a, NICE 2010b) as an appropriate secondary prevention strategy.

Cardiac rehabilitation (CR) services are comprehensive, long-term programmes involving medical assessment, prescribed exercise, cardiac risk factor modification (for example, smoking cessation support), education and counselling.

There is evidence that exercise-based cardiac rehabilitation:

- Is effective in reducing total and cardiovascular mortality and hospital admissions in people with coronary heart disease (Heran et al 2011)
- Reduces all-cause and cardiovascular mortality rates in patients after MI when compared with usual care, provided it includes an exercise component (NICE 2013)
- Significantly reduces hospitalisation for chronic heart failure and significantly improves quality of life and exercise tolerance for people with heart failure (NICE 2010b)

Across the UK, many people who might benefit do not receive adequate CR. The National Service Framework for Coronary Heart Disease (DH 2000) suggested that 85% of patients who have had a heart attack, a percutaneous coronary intervention (PCI) or a coronary artery bypass graft (CABG) should be offered cardiac rehabilitation. A 2013 national audit (British Heart Foundation (BHF)
2013) showed that cardiac rehabilitation programmes have seen increasing numbers of patients compared with previous years but that average uptake has not significantly changed, with just 43% of eligible patients receiving CR. This is influenced by an increase in the number of cardiology procedures, and patients but also influenced by poor uptake of cardiac rehabilitation.

Patients in Suffolk can receive CR from a number of different providers, including the three local acute trusts and the community trust. A 2015 audit of East Anglian CR services concluded that Suffolk services were innovative, flexible and able to contact patients very quickly following referral. No overall figures for uptake were presented, and outcomes were not reported by all units, however there was local evidence that CR does improve levels of exercise and anxiety, reduces smoking, and is highly valued by patients. There was little evidence that CR reduced blood pressure or body mass index, although the relatively short outcome measurement period may have an impact here (Anglia Cardiac Re-Prevent Alliance 2015).

**Diabetes**

**The Suffolk picture - Detecting and managing patients with diabetes**

Diabetes affects 6% of adults in England. The health and care outcomes for people with or at risk of diabetes have improved over recent years as a result of improvements in the quality of NHS services. The recent Global Burden of Disease Study 2010 showed that the UK has the lowest rates of early death due to diabetes of the 19 wealthy countries included in the analysis (Murray et al 2013). However, there remains room for improvement.

There are nearly 38,000 people already diagnosed with diabetes in Suffolk, a number which is increasing by 5% each year.

- Diabetes is a major cause of premature mortality (HSCIC 2012)
• Diabetes doubles the risk of cardiovascular disease (heart attacks, heart failure, angina, strokes) (Emerging Risk Factors Collaboration 2010)
• Diabetes is the most common reason for end stage kidney disease and the most common cause of blindness in people of working age (Diabetes UK 2012)
• Diabetes is estimated to have cost the UK £9.8 billion in direct costs in 2010/2011, which equates to approximately 10% of the total NHS budget. It is estimated that 80% of these costs are incurred in treating potentially avoidable complications (Hex et al 2012)
• Nearly 1 in 5 people with diabetes have clinical depression (Ali et al 2006) and for those with anxiety and/or depression, health care costs increase by around 50%

One key element of tackling the devastating and costly implications of Type 2 diabetes is to bridge the gap between anticipated prevalence and those diagnosed. It is estimated that there may be approximately 7,500 people with undiagnosed diabetes in Suffolk. Public Health England estimate that if rates of diagnosis in Suffolk equalled the best performing comparison CCGs, a further 5,795 diabetics could be diagnosed leading to a reduction in diabetic complications (PHE 2015a).
Figure 16: Estimated observed/expected prevalence of diabetes and the number of undiagnosed diabetic patients in Suffolk, by CCG

O/E prevalence of diabetes

- West Suffolk CCG
- Ipswich & East Suffolk CCG
- Great Yarmouth & Waveney CCG*

Estimated undiagnosed population by CCG

- WS CCG
- I&ES CCG
- GY&W*

* Note:
WS = West Suffolk CCG
I&ES = Ipswich and East Suffolk CCG
GY&W = Great Yarmouth and Waveney CCG

* GY&W includes Suffolk proportion of CCG population only
Source: Public Health Suffolk analysis, Public Health England Cardiovascular Intelligence Packs by CCG, March 2015

Total: 7,502
When the management of Suffolk patients who already have diabetes is considered, there is also scope to improve local care. NICE has defined nine care processes, which contribute to reducing diabetic complications, together with three treatment target standards for patients with diabetes (NICE 2009, NICE 2011a, NICE 2011b, NICE 2012). The national audit of diabetes care 2012-13 (HSCIC 2014a) includes eight of these care processes and the three treatment targets. The most recent national audit (2012-13) indicated that 53% of Suffolk patients received all 8 recommended diabetic care processes in 2012/13, compared to 60% for England as a whole. This means that over 11,300 diagnosed diabetics in Suffolk did not receive the 8 recommended care processes in 2012-13.

There is also a four-fold variation between practices in Suffolk in the numbers of patients not receiving the 8 care processes, ranging from 24% of patients to nearly 80% of patients. This level of variation in local care warrants further exploration. The three treatment targets for diabetic patients are controlling blood pressure (hypertension), blood sugar and cholesterol. Across the country, nowhere is meeting all 3 targets well – the national CCG average is 36% and the best is 48%. Within Suffolk, 36% of people with diabetes have well controlled blood pressure, blood sugar and cholesterol, which is similar to the national average. However, this overall average figure hides some variation between the three CCGs, with Ipswich & East Suffolk achieving 39.6%, Great Yarmouth & Waveney 33.8%, and West Suffolk only 28.5%.

In addition to this variation at CCG level, there is also variation between practices, with the lowest performing practice achieving the treatment targets for 1 in 5 of its patients and the highest performing practice achieving the targets for nearly 1 in 2. Again, this level of variation warrants further local exploration.

The National Diabetes Audit also explores the current rates of diabetic complications occurring by CCG. Despite Suffolk’s current performance in delivering care processes and treatment targets, and the variations of care which exist between practices,
Suffolk’s diabetic patients are currently experiencing the same rate of diabetic complications as patients across England as a whole. Indeed, the rate of admission for angina in patients with diabetes is lower than average in all three Suffolk CCGs, the rate of admission for heart failure is lower than average in West Suffolk and Great Yarmouth & Waveney and the rate of admission for renal replacement therapy is lower than average in West Suffolk.

While it is clearly good news that current rates of diabetic complications are no higher in Suffolk than in England as a whole, the concern must be that if adherence to care processes and treatment targets remains at the current levels, this will have a detrimental impact on the outcomes of Suffolk patients in the future. It seems likely that the current rate of complications is a function of the care given to individuals over many years, although we cannot say how good diabetes care has been in Suffolk over recent decades.

**What are we doing about it?**
Following the 2012-13 National Audit, there has been a significant local focus on improving practice performance in relation to the coverage of care processes, and the achievement of treatment targets.

**What else should we consider doing?**
A large proportion of Type 2 diabetes cases could be prevented. The recently launched National NHS diabetes prevention programme, which is a joint initiative between NHS England, Public Health England and Diabetes UK, aims to significantly reduce the four million people in England otherwise expected to be living with Type 2 diabetes by 2025 (NHS England 2015).

The national diabetes prevention programme has commissioned two evidence reviews examining the effectiveness of diabetes prevention interventions and the effectiveness of weight management programmes (NHS England 2015a). Preliminary findings from these evidence reviews suggest that diabetes prevention programmes:
are effective in reducing the incidence of diabetes by between 30% and 60% (Ahmad and Crandall 2010)
are effective for all age groups
may be more effective for women than men
may achieve a greater impact in patients who are already overweight or obese (NHS England 2015a)

If these findings for the reduction of incidence were replicated in Suffolk, the national programme could prevent between 750 and 1500 patients per year being diagnosed with diabetes in the future. NICE estimates that each diabetic patient costs £141.78 per year in primary care prescribing costs alone. Preventing 750 – 1500 Suffolk patients from developing diabetes could therefore save £0.7m - £1.5m over three years. This estimate does not include the additional savings which will accrue later from avoided diabetic complications, such as heart attacks, kidney disease, blindness or amputations.

While the national programme is being developed, in Suffolk we are already taking steps to improve the prevention of diabetes. The NHS Health Check Programme already has the potential to detect people with Type 2 diabetes and to identify those at high risk, who can then be given support and lifestyle interventions to reduce their risk and prevent onset of the condition. The ‘Healthy Lifestyles’ service will expand from April 2016 to include blood pressure and diabetes screening for high risk individuals who are too young to be eligible for the NHS Health Check Programme. In addition, the new service will support employers to roll out workplace based health checks, which will detect modifiable risk factors in lower-risk individuals. We will also be adapting the forthcoming ‘One You’ programme from Public Health England to meet our local needs. This programme will concentrate on helping individuals aged 40-60 to make effective lifestyle changes, with a particular focus on exercise, healthy weight, eating, alcohol consumption and smoking.
Is there anything we should stop doing or that we know does not work?

There is no evidence that population-wide screening for diabetes is clinically or cost effective.

What can we achieve?

The benefit of diagnosing and treating the currently undiagnosed diabetics in Suffolk is likely to be significant, but is very difficult to quantify. Reducing the risk of the complications of diabetes requires control of blood pressure, blood glucose and cholesterol which each have an overlapping impact on the outcomes.

The table below illustrates the ‘number needed to treat’ for blood glucose and blood pressure control in order to reduce mortality, reduce the risk of major cardiovascular events or slow the rate of progression of complications, such as retinopathy, nephropathy and neuropathy (O’Connor et al 1998). While both treatment goals are important, it is clear that managing blood pressure is more effective at reducing all three complications than managing blood glucose control, meaning that detecting and treating hypertension in people with diabetes is fundamental to both secondary and tertiary prevention.
Table 12: Comparison of the Numbers Needed to Treat for hypertension management and blood glucose management in patients with diabetes

<table>
<thead>
<tr>
<th>Treatment strategy</th>
<th>NNT - Reduction in mortality</th>
<th>NNT - Reduction in major cardiovascular events</th>
<th>NNT - Slower progression of complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycaemic control (Metformin)</td>
<td>14 over 10 years</td>
<td></td>
<td>19 over 10 years</td>
</tr>
<tr>
<td>Blood pressure control</td>
<td>15 over 10 years</td>
<td>10 to 20 over 5 – 10 years</td>
<td>6 over 10 years</td>
</tr>
</tbody>
</table>


It is clear from the review of current performance that there is also a significant opportunity to improve diabetes management for the future benefit of patients in Suffolk, although it is difficult to quantify the potential clinical and financial impact of this. The following factors should be considered when considering the local potential to improve clinical outcomes and reduce costs:

- The substantial numbers of additional patients who could be diagnosed
- Suffolk’s current low performance in achieving all three treatment targets
- The relatively low ‘numbers needed to treat’ to avoid a death or a complication
- The estimate that 1 in 5 of Suffolk’s diabetics may also have anxiety and depression, and considerably increased associated healthcare costs

We were unable to form a clear view on this as the overlapping effects of the different treatment targets and the many and complex treatment regimens for diabetes mean that any simple conclusions are likely to be misleading. This is why we put the table in above, which demonstrates the possible effects. Arguably it is more important to achieve good blood pressure control in
diabetics, rather than good glycaemic control, but this is very difficult to quantify – even NICE do not attempt to quantify the value of their suggested diabetes interventions. I had hoped we had covered actions enough with health checks and the expansion of the healthy lifestyles service while we await the national programme, all described above.

**Respiratory conditions**

Respiratory disease is a medical term that encompasses a wide range of conditions that can be mild and self-limiting, such as the common cold, or life-threatening, such as bacterial pneumonia, pulmonary embolism, and lung cancer. Respiratory disease is one of the highest causes of unplanned emergency hospital admission in Suffolk. This section focuses on chronic obstructive pulmonary disease (COPD) - the name for a collection of lung diseases including chronic bronchitis, emphysema and chronic obstructive airways disease. COPD, together with pneumonia and chest infections which frequently complicate COPD, accounts for nearly 60% of all unplanned admissions for respiratory disease.

COPD is the UK’s fifth biggest killer, leading to 30,000 deaths each year, an estimated 420 of which are in Suffolk. It is estimated that there are more than 3 million people living with the disease in the UK, of whom only about 900,000 have been diagnosed (NICE 2010c). This is in part because many people who develop symptoms of COPD do not seek medical help because they often dismiss their symptoms as a ‘smoker’s cough’. COPD affects more men than women, although rates in women are increasing. It usually only starts to affect people over who are older than 35, although most people are not diagnosed until they are in their 50s. The prevalence of COPD rises with age, which has implications for future demand for health and social care in Suffolk.

The main cause of COPD is smoking, which accounts for about 75% of cases. The likelihood of developing COPD increases with the duration of smoking and the number of cigarettes smoked. Some cases of COPD are caused by fumes, dust, air pollution and genetic disorders, but these are rarer. Over many years, the inflammation caused by smoking or other irritants leads to permanent
changes in the lung. These changes cause the typical symptoms of COPD including breathlessness, cough with phlegm and frequent chest infections. People with COPD may experience exacerbations (‘flare-ups’), which are a sudden worsening of symptoms. These increase disease progression and accelerate decline in lung function. The prevalence of COPD exacerbations makes the condition a leading cause of emergency admission to hospital in the UK (DH 2011). One in twelve patients admitted to hospital as an emergency with COPD will die during their hospital stay, with a further one in six dying within three months.

The Department of Health estimates that the total annual cost of COPD to the NHS is over £800 million (DH 2010). This equates to an estimated £9.6m per year for Suffolk. In the late 1990s, 24 million working days were lost due to COPD each year, with the annual cost of lost productivity being estimated at around £2.7 billion - this suggests that COPD may be leading to £38 million of lost productivity for Suffolk annually.

As the majority of cases of COPD are caused by smoking the most effective way to prevent the disease is to discourage people from starting to smoke, or supporting them to quit if they already smoke. As the disease may be less commonly caused by occupational to chemicals, fumes or dust, ensuring that workers in these occupations have proper access to protective respiratory equipment is the most effective form of risk reduction and prevention in these environments.

Anxiety and depression are very common comorbidities in COPD and have significant impact on patients, families, society and the course of disease. Estimates of the prevalence of anxiety and depression in COPD vary widely but may co-exist in 20-50% of COPD patients. Undetected and untreated anxiety and depression may increase physical disability and use of health care. Recent NICE Guidance 101 (NICE 2010c), recommends that healthcare professionals should be alert to the presence of anxiety and depression in patients with COPD and that pulmonary rehabilitation programmes should incorporate psychological intervention.
Improving the diagnosis of COPD – The Suffolk picture
There were nearly 14,000 people on GP registers with a diagnosis of COPD in Suffolk in 2013/14, an increase of over 3% on the previous year. Nationally, it is estimated that only one third of COPD patients have been diagnosed, but analysis by Public Health England suggests that we are doing better than average in Suffolk, and have diagnosed an estimated two thirds of our COPD patients.

Figure 17: Estimated observed/ expected prevalence of COPD in Suffolk, and numbers of undiagnosed patients by CCG

* Note:
WS = West Suffolk CCG
I&ES = Ipswich and East Suffolk CCG
GY&W = Great Yarmouth and Waveney CCG

* GY&W population includes Suffolk proportion of CCG population only
Source: Public Health Suffolk analysis; Public Health England InHALE database, 2011/12 data
The Public Health England InHALE database provides emergency admission rates for the three CCGs in Suffolk. It is estimated that in 2012/13 approximately 4,600 patients in Suffolk were admitted to hospital with COPD. The rates of admission vary between the three CCGs, with Great Yarmouth and Waveney in the highest 25% of CCGs nationally, Ipswich and East Suffolk in the mid-range of CCGs, and West Suffolk in the lowest 25% of CCGs.

As well as the potential to diagnose more patients, there is also scope for improvement in the accuracy of COPD diagnoses currently made in Suffolk. NICE guidance recommends that patients newly diagnosed with COPD should have their diagnosis confirmed with spirometry between 3 months before and 12 months after their entry onto the COPD register (NICE 2010). Over 20% of patients who have been diagnosed with COPD in Suffolk since April 2011 are not recorded as having their diagnosis confirmed with spirometry (HSCIC 2014). Two out of the three Suffolk CCGs are in the bottom quartile nationally for achievement of this diagnostic standard PHE (2015c). It is not known how many patients diagnosed before 2011 have had their diagnosis confirmed with spirometry. An additional element of COPD diagnosis involves patient assessment using the MRC dyspnoea score - all three CCGs in Suffolk are in the lowest quartile of CCGs in England for the achievement of this standard PHE (2015c).

**What are we doing about it?**
Nationally, it is estimated that only one third of COPD patients have been diagnosed, but analysis by Public Health England suggests that we are doing better than average in Suffolk, and have diagnosed an estimated two thirds of our COPD patients.

**What else should we consider doing?**
Ensure that all practices have access to accurate spirometry and support primary care practitioners with education programmes. Some parts of the country have commissioned virtual clinics for the review of COPD patients. GPs and secondary care consultants are supported by respiratory consultants to improve the diagnosis, care planning and prescribing for COPD patients (D’Ancona et al 2014).
What shouldn’t we do?
A study conducted in London examined at the impact of poor quality COPD diagnosis on patient safety and costs (White et al 2013). The study found that 29% of the diagnosed COPD patients did not reach the spirometry threshold for a confirmed diagnosis and that a further 38% of patients with a registered diagnosis of COPD were being over-treated with inhaled corticosteroids, according to guidelines current at the time. One third of the incorrectly diagnosed patients were also being treated with inhaled corticosteroids. Further work on COPD diagnosis standards has found that 13% of patients diagnosed with COPD using the GOLD diagnostic standard had been misdiagnosed and that many of these misdiagnosed patients actually had undiagnosed and untreated heart failure (Miller and Levy 2015).

While further analysis is needed to determine the extent to which these findings may be replicated in Suffolk, if relevant to the local health economy, they suggest that there may be the potential to improve clinical outcomes for local COPD patients by confirming accurate diagnosis and ensuring they are not being over-treated. As COPD medication costs about £400 per patient per year, reducing over treatment and inappropriate treatment of patients has the potential to save considerable costs for the system. In addition, preventing the over-treatment of patients also has the potential to improve clinical outcomes, as inhaled corticosteroids are known to increase the risk of pneumonia. NICE estimated the annual number needed to harm for severe pneumonia as a consequence of inhaled steroid use as 60 to 72.

What can we achieve?
If people remain undiagnosed until they are severely disabled by their COPD, or are admitted to hospital as an emergency, the benefits of treatment to the individual are greatly reduced. Late or under-diagnosis has been shown to have a strong association at practice level with hospital admission for exacerbations. It also increases costs, as it costs the NHS nearly ten times more to treat severe COPD than mild disease (DH 2011). Nationally, 10% of patients who are currently admitted to hospital with an exacerbation...
of COPD have no prior COPD diagnosis (NHS England 2014). In Suffolk this number is likely to be lower, reflecting our higher than average diagnosis rate.

If, for illustrative purposes, the local rate is assumed to be 5%, approximately 230 Suffolk patients might be admitted to hospital each year without a prior COPD diagnosis at a cost to the NHS of £0.5m. 22 of these patients would be expected to die either during their hospital stay, or within the following three months. NHS England suggests that an earlier diagnosis might reduce these late-stage undiagnosed deaths by a quarter, meaning that 28 deaths could be prevented in Suffolk over 5 years. If these 28 patients all avoided just one admission to hospital through earlier diagnosis, that would save £325,000 in avoided hospital costs over 5 years.

**COPD**

**Improving the management of COPD - The Suffolk picture**
Recent publications including the NICE Quality Standards for COPD (NICE, 2011), NICE guidance (CG 101: Chronic Obstructive Pulmonary Disease, 2010), the Department of Health Outcomes Strategy for COPD and Asthma (Department of Health, 2011) all contain numerous recommendations for improving the care and management of patients with COPD. NICE recommends the following management for patients with diagnosed COPD:

**Support to stop smoking**
- Pneumococcal and influenza vaccination
- The use of effective drug therapy, for example using an inhaler to make breathing easier
- Pulmonary rehabilitation to help with the amount of activity patients can do
- The use of non-invasive ventilation
- Effective management of COPD exacerbations
• Multidisciplinary working

It is possible to review some of the elements of this recommended care pathway in Suffolk for effectiveness, and for evidence of variation, which may be contributing towards inequalities and to poorer outcomes overall.

Support to stop smoking

Stopping smoking, even after a diagnosis of COPD, is the most effective action that patients can do take improve their outcomes. Smoking cessation is therefore regarded as treatment for COPD, particularly for patients in the early stages of the disease, when quitting can lead to a decline in symptoms similar to that of healthy patients who have never smoked, and reduce cough, phlegm and wheeze for most patients within one year (DH 2011). Practices can access support for patients to stop smoking through the Livewell Suffolk smoking cessation service, but in order to target people effectively for this intervention, it is necessary to know who in the practice population is a smoker.

All three CCGs in Suffolk are in the lowest 25% of CCGs in England for their performance in the QOF indicators relevant to smoking, including recording patients’ smoking status within the most recent one or two years, and recording an offer of cessation support and treatment being offered (PHE 2015c). This either suggests that practices are not recording smoking status or offers of support to quit accurately enough, or are simply not monitoring smoking status or making enough offers of support to patients. In addition to this overall low level of recorded support for smoking cessation, evidence from QOF 2013/14 suggests that there is also significant variation (up to ten-fold) between the performance of individual practices in Suffolk in offering and recording smoking cessation support, which warrants further local investigation.
When smoking quit rates are considered, the Public Health England Respiratory Profiles for 2011/12, which pre-date CCGs, demonstrate that Great Yarmouth & Waveney PCT was achieving a quit rate of 54.4% at 4 weeks, while Suffolk PCT was achieving quit rates of 49.9%, similar to the England average of 49.1% (NHS Rightcare 2012). While these rates are better than many PCTs were achieving, it is worth noting that the highest performing PCT, Leeds North, was achieving a quit rate of 70.7%, so there may be further potential to improve.

**Influenza vaccination**

Pneumococcal and influenza vaccination are both recommended for patients of any age with COPD. On average, nearly 1 in 5 COPD patients in Suffolk did not receive a flu vaccine the previous winter with considerable variation between practices in the rates achieved. Overall, two of the CCGs are achieving similar flu vaccination rates to the national average, while one (Great Yarmouth & Waveney) is in the lowest quartile of CCGs nationally (PHE 2015c). These relatively modest levels of uptake suggest that there is room for improvement in the flu vaccine coverage of Suffolk COPD patients.

**Effective drug therapy**

The use of effective drug therapy has already been discussed in the section relating to diagnosis. Targeted case finding of patients on COPD medication but without a clear or accurate diagnosis is recommended to reduce the level of inappropriate prescribing.

**Effective management of exacerbations**

Effective management of exacerbations can be achieved through prompt administration of antibiotics. NICE recommends that COPD patients at high risk of exacerbations should be given a course of antibiotic (e.g. amoxicillin or doxycycline, guided by local antibiotic guidelines) and corticosteroid tablets to keep at home (known as ‘rescue packs’), thus allowing prompt self-management of infective exacerbations.
The use of non-invasive ventilation

If patients are admitted to hospital with a COPD exacerbation, NICE makes recommendations concerning the use of non-invasive ventilation amongst other therapies. The 2012 Atlas of Variation for Respiratory Care shows that all three CCGs in Suffolk are in the top quartile nationally for the provision of acute non-invasive ventilation, a marker of high quality care.

Pulmonary rehabilitation

Pulmonary rehabilitation is a multidisciplinary programme of care for patients with chronic respiratory impairment, that is individually tailored to optimise each patient’s physical and social performance and autonomy. NICE recommends that pulmonary rehabilitation should be made available to all appropriate people with COPD including those who have had a recent admission to hospital for an acute exacerbation. The East of England Strategic Clinical Network for Respiratory Disease recently reported that pulmonary rehabilitation services in Suffolk were achieving high levels of uptake and completion (both exceeding 70%) and that patients in the Suffolk service were reporting the highest quality of life scores in the East of England. However, the Network also reported that the level of commissioned places in Suffolk was only 47% of the estimated required places, indicating that there may be potential to improve access to services (Suffolk Pulmonary Rehab 2015).

What are we doing about it?

A number of local initiatives are in place to support patients diagnosed with COPD, including support for patients in care homes, a specialist COPD integrated team who work to prevent COPD patients from being admitted to hospital by helping to optimise their management and medication, and help to facilitate their supported discharged from hospital, if they do require admission.

What else should we consider doing?

The setting up of COPD virtual clinics, as described above, would also benefit patients who already have a confirmed diagnosis.
**What shouldn’t we do?**
There is no evidence that population-wide screening for COPD is clinically or cost-effective.

**What can we achieve?**
NHS England suggests that if all CCGs achieved the COPD mortality rates currently being achieved by the best-performing CCGS, 7,800 lives each year could be saved. In Suffolk, all the CCGs are already achieving mortality rates from respiratory disease in the under 75s equal to, or better than, the average across England. Therefore, it is difficult to assess the possible impact of improving the management of COPD locally. However, for illustrative purposes, if it is assumed that the scope to improve COPD management locally is only a quarter of the level suggested by NHS England, there would still be potential to prevent approximately 135 deaths over 5 years.

In the first chapter, we highlighted the fact that, a large proportion of health and social care spend is on people aged over 65. This is largely because, as people age, they are more likely to develop and live with comorbidity, multi-morbidity, disability and / or frailty (Oliver et al 2014). In this section we discuss frailty, falls and dementia and the issues for Suffolk, highlighting the opportunities for prevention.

**Frailty**

**What is frailty?**
Frailty is a clinically recognisable state of increased vulnerability in older people. This is as a result of the gradual loss of in-built reserves across several body systems. Frail, older individuals are therefore less able to cope with seemingly minor stressor events e.g. infection or changes to medication. They may consequently experience a dramatic deterioration in their physical and mental...
wellbeing, become unstable or develop adverse outcomes (e.g. falls, delirium, disability, long-term care and death) when these occur. The loss of skeletal muscle function (sarcopenia) is a key feature of physical frailty.

The prevalence of frailty rises with increasing age and studies show that this is higher in women. Age and gender are therefore risk factors. Emerging evidence also suggests that physical inactivity, sub-optimal protein and calorie intake, vitamin D insufficiency, poor diet, smoking and obesity may also play a role. Frailty is therefore potentially preventable, given the association with some modifiable risk factors.

Individuals with frailty commonly present with non-specific signs and symptoms like extreme fatigue, unexplained weight loss, recurrent infections, falls, delirium, or day to day instability with fluctuating levels of disability (Clegg et al 2013). There are five recognised frailty syndromes, which if present, suggest an individual has frailty. A seemingly simple presentation may therefore mask a more serious underlying problem. These syndromes include (British Geriatrics Society (BGS) 2015):

- Falls e.g. collapse, legs giving way, found lying on the floor
- Immobility e.g. sudden change in mobility, gone off legs, stuck on the toilet
- Delirium e.g. acute confusion, worsening of pre-existing confusion, short-term memory loss
- Incontinence e.g. new onset or worsening of urinary or faecal incontinence
- Susceptibility to side-effects of medication e.g. confusion with codeine, hypotension with anti-depressants

The degree of frailty in individuals tends to vary, hence individuals will present differently. A 9-point Clinical Frailty Scale has therefore been developed (Dalhousie University 2007-2009). Using the scale people could be categorised as “very fit”, “well”, “managing well”, “vulnerable”, “mildly frail”, “moderately frail”, “severely frail”, “very severely frail” or “terminally ill”. The scale is
therefore useful in determining the level of need and when intervention is required. Other tools for the grading of frailty e.g. the electronic frailty index (eFI) exist and are being developed further.

It is important to distinguish between frailty, long-term conditions (LTCs) and disability. Frailty is often present in people with multi-morbidity (i.e. where an individual has multiple LTCs). This may however be missed due to a focus on the LTCs. There may also be an overlap in existing strategies to manage frailty and multi-morbidity. Notably about 20% of people with frailty will have no other long term condition (Young 2015). It is therefore likely that they will neither be known to their GPs nor in contact with health or social care services. Frailty can develop as a result of disability, while in some people disability can develop as a result of frailty. Consequently, many people with frailty also have a disability, and several people with long-term disabilities do not have frailty (BGS 2015).

**The Suffolk picture**
As mentioned earlier, Suffolk’s population is ageing and will be significantly older than the rest of England by 2037 (Suffolk County Council 2015). We therefore anticipate a rise in the number of people living with frailty.

We currently do not have any local data quantifying the number of frail people in Suffolk. This is largely because “frailty” is seldom identified as a primary diagnosis. Quite often the presenting condition, which may be one of the frailty syndromes, will be identified as the diagnosis. We can however apply published frailty prevalence estimates to ONS population projections for Suffolk to model local frailty estimates.

About 10% of people aged over 65 are thought to have frailty. This rises with age to between 25% and 50% in those aged over 85 years (BGS 2015). Using these estimates we could assume that at present, there are at least 15,300 frail individuals in Suffolk and this
is expected to rise to about 25,700 by 2037. The number could however be even bigger as there will be an even larger cohort of frail individuals aged 85+ yrs. The table below shows the modelled estimates for the year 2012 compared to 2037.

Table 13: Modelled estimates of the number of frail people in Suffolk in 2012 and 2037

<table>
<thead>
<tr>
<th></th>
<th>2012 Population</th>
<th>2012 Frail</th>
<th>2037 Population</th>
<th>2037 Frail</th>
</tr>
</thead>
<tbody>
<tr>
<td>65+ years (10% frail)</td>
<td>153,000</td>
<td>15,300</td>
<td>257,000</td>
<td>25,700</td>
</tr>
<tr>
<td>85+ years (25% frail)</td>
<td>21,500</td>
<td>5,375</td>
<td>59,000</td>
<td>14,750</td>
</tr>
<tr>
<td>85+ years (50% frail)</td>
<td>21,500</td>
<td>10,750</td>
<td>59,000</td>
<td>29,500</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015)

It is important to note that these individuals will all be at different points on the clinical frailty scale so not everyone will require the same level of intervention or support. It is also likely that a large number will not be known to health or social care professionals. Preventive interventions could therefore range from simple low level support to allow individuals to age well and stay well, to end of life support.

What are we doing about it?
Locally, the Health and Wellbeing Board in Suffolk has agreed a vision for healthy ageing in Suffolk which aims to ensure “older people in Suffolk have a good quality of life”. The Suffolk joint health and wellbeing strategy points out the need to establish a model for the proactive management of health and social care for older people. Priority areas have been identified as:
• Ensuring health and social care services are integrated at the point of delivery
• A focus on prevention including the promotion of healthy lifestyles and self-care
• A focus on reducing loneliness and social isolation of older people

Partner organisations in health, social care and the voluntary sector in Suffolk have adopted shared commissioning principles and work is ongoing to transform the way services are delivered. This aims to create a responsive system that is in keeping with our vision for healthy ageing in Suffolk. The integration of health and social care services is seen as an essential lever. To facilitate the transformation, early adopter sites, namely Connect Sudbury and Connect East Ipswich, have been established to begin the implementation of this new way of working. Integrated Neighbourhood Teams (multi-agency teams that coordinate services around people’s needs) and Neighbourhood Networks with Local Area Coordination (networks to help people get connected to their local communities) are key elements that will help facilitate the shift from fragmented, reactive care to more integrated and proactive care. There will also be a greater focus on prevention and self-care and a more integrated approach to reablement in this new approach.

Suffolk County Council’s Adult and Community Services team has enhanced the delivery of social care through the implementation of the Supporting Lives Connecting Communities (SLCC) programme and ongoing work to implement the Care Act 2014. This will mean that more people will be able to access the care and support they need and will have more choice and control over the type of support they receive. CCGs in Suffolk are also leading work with partners to improve the identification and management of frailty.
What else should we consider doing?
Frailty is a gradual process; it develops over a period of 5 to 10 years (NHS 2014a). Frailty is also not a static condition – it can get worse or with the right intervention, get better over time. Some of the risk factors for frailty mentioned earlier are lifestyle-related, hence modifiable. There are therefore opportunities for primary, secondary and tertiary prevention. Some of what is described in this section is already happening or being developed in Suffolk, but more could be done to harness these opportunities by scaling these up at pace.

It is recommended that older people are assessed for the presence of frailty whenever they come into contact with health and social care professionals. The use of a variety of tests to recognise frailty is suggested. These include slow gait speed, the PRISMA questionnaire, the timed-up-and-go test and the Edmonton Frail Scale. The recognition and identification of frailty is important as this allows for intervention to prevent deterioration and unnecessary harm (BGS 2014).

The diagram below, taken from the report “Making our health and care systems fit for an ageing population” published by the King’s Fund (Oliver et al 2014), illustrates 10 essential components of care for older people which contribute to maintaining an individual’s health and independence. The report also urges a shift from “high cost, reactive and bed-based care to care that is preventive, proactive and based closer to people’s homes, focusing as much on wellness as on responding to illness”.
Figure 18: Ten components of care for older people

Source: Oliver et al (2014)
The components described focus on older people and their needs rather than service structures and may not all apply to all frail individuals depending on where they are on clinical frailty scale. They however summarise potential interventions in the prevention of frailty which are discussed next.

**Opportunities for primary prevention**
We know that ageing generally results in a gradual decline in physiological reserve; however, in frailty, this decline happens more rapidly and body’s regulatory systems begin to fail. As is illustrated below, an individual starting off from a lower level of fitness is more likely to tip into dependency when faced by minor stressors (Clegg et al 2013). Ensuring people get to old age as fit and as healthy as possible is crucial as this could potentially delay the onset of frailty, subsequent dependency and cost to the health and care system.
Figure 19: Vulnerability of frail older people to a sudden change in health status after a minor illness

The green line represents a fit elderly individual who, after a minor stressor event such as an infection, has a small deterioration in function and then returns to homoeostasis. The red line represents a frail elderly individual who, after a similar stressor event, undergoes a larger deterioration, which may manifest as functional dependency, and who does not return to baseline homoeostasis. The horizontal dashed line represents the cutoff between dependent and independent.

Source: Clegg et al (2013)

The 2010 Marmot Review on health inequalities (Institute of Health Equity 2010) showed that nationally, there was a difference in life expectancy between people living in poorer areas and those living in more affluent areas. People living in poorer areas on average died 7 years earlier than those living in the most affluent areas. Even more staggering was the difference in disability-free
life expectancy which was on average estimated to be about 17 years. When compared to those living in the most affluent areas, people living in poorer areas on average live shorter lives and spend more of that time living in disability. This has been described as the “fitness gap” - the difference between where a person’s health state actually is and where it might be (Young 2015).

Although life expectancy in Suffolk is higher than that nationally, we know that there is a life expectancy gap between our most deprived and least deprived areas. A boy and a girl born in the most deprived part of Suffolk will live 6.4 years and 4.2 years less than a boy and girl born in the least deprived part of Suffolk respectively. At 66.1 years for males and 68.2 years for women, healthy life expectancy is also much lower than life expectancy meaning that both men and women live close to 15 years with some form of disability or in ill-health (Suffolk County Council 2015). Worryingly, as pointed out in the introduction, this is rising in Suffolk.

Health inequalities therefore remain an important consideration in the prevention of frailty given that certain groups within our community are at greater risk of developing frailty. Action across the life-course to reduce the socio-economic gradient in health outcomes is thus likely to reduce the risk of developing frailty.

NICE has recently published public health guidelines on “Dementia, disability and frailty in later life – mid-life approaches to delay or prevent onset” (NICE 2015). The guidelines highlight the importance of behaviour change in:

- Reducing the prevalence of behaviours that increase the risk of dementia disability and frailty
- Reducing the occurrence or delaying the development of dementia, disability and frailty
- Reducing the risk of developing other long-term conditions

Key behaviour change interventions highlighted include encouraging people to stop smoking, to be physically active, to improve their diet, to lose weight where appropriate and maintain a healthy weight, and to reduce alcohol intake. Details of these interventions are discussed in section 5.
Opportunities for secondary and tertiary prevention

An evidence summary (Hattunen-Lenz 2015) on frailty highlights challenges in the treatment and care for frail elderly people. It recognises the considerable impact frailty can have on the sufferers themselves, their care givers, families, as well as on society. The report outlines a number of approaches that have been successfully applied in an attempt to mitigate the effects of frailty. These include:

- **Hospital based interventions** to improve outcomes - frail elderly patients needing hospital admission appear to benefit from comprehensive geriatric assessment on specialist elderly care wards. In comparison to elderly frail patients admitted to general medical wards, those admitted to specialist elderly care wards are more likely to return home, less likely to experience cognitive or functional decline, and have lower in-hospital mortality rates.

- **Home-based interventions** to reduce the effects of frailty for community dwelling older adults - evidence indicates that complex interventions based on comprehensive geriatric assessment delivered to elderly people in the community can increase the likelihood of continuing to live at home. Community interventions may reduce the need for care home admissions and reduce the risk of falls. However, it appears that community interventions may not be effective for the frailest patients.

- **Exercise interventions** – these have been shown to improve mobility and functional ability of frail elderly individuals. It is suggested that exercises particularly aimed at building strength and balance could improve mobility and functional abilities.

- **Pharmacological agents** – a few have been trialled in the prevention and reduction of frailty. However, some research has argued that avoiding multi-pharmacy and its related complications can benefit the frail elderly.
Modern health-care systems tend to be organised around single-system illnesses. However, this model fits badly with many elderly people who have multi-organ problems. Frailty can therefore be seen as a practical, unifying notion in the care of elderly patients that helps to direct attention towards a more holistic treatment and away from the single-organ diagnoses and treatment.

The British Geriatric Society (BGS) in association with the Royal College of General Practitioners and Age UK, has produced two “Fit for Frailty” reports (BGS 2014, BGS 2015) which summarise consensus best practice guidance on the care of older people living with frailty in community and outpatient settings. The reports make recommendations to improve the detection of frailty and to prevent further deterioration in those identified as frail. These include:

- The **opportunistic identification of frailty** in individuals when they come into contact with health and social care professionals. This is aimed at improving outcomes and avoiding unnecessary harm.

- **Comprehensive Geriatric Assessment (CGA)**, which is considered the gold standard in the management of frailty in older people. This is a holistic, interdisciplinary assessment of an individual and has been shown to improve outcomes. Key elements include an assessment of functioning and medical, psychological, social and environmental assessments. However, the process can be time consuming and it is acknowledged that it may be not feasible for every frail older adult living in the community to undergo a full multidisciplinary review with a geriatrician and/or an old age psychiatrist.

- **A personalised shared care and support plan** which documents treatment goals, management plans, plans for urgent care, and if appropriate an **end of life care plan** is crucial in preventing crises. This should be shared across the system between primary care, emergency services, secondary care and social services.

- **Joint working and full integration** is crucial across the system to ensure complex medical, functional, social and psychological aspects of frailty are effectively managed.

- Other important observations from the evidence review include the need for a **timely response** by the multidisciplinary teams which can help in preventing crises or hospital admissions. The provision of a **single point access** (for patients, carers,
and professionals) and **case management** allows for the effective **coordination of care**. The **signposting of older people with frailty** to the appropriate statutory or voluntary services is also highlighted as important.

- **Identification and support for carers**, friends and family involved in the long-term support and care of frail individuals. This is particularly important when designing services for frailty and dementia, as carers of people with dementia are at risk of developing frailty themselves.
- A recognition of the risks associated with hospitalisation when a frail individual is admitted to hospital, hence the **provision of real and safe alternatives to hospital**.
- Where hospital admission is appropriate, pathways to pull older frail individuals out of hospital should be developed i.e. **pull-based discharge** and delayed transfers of care prevented.

**Reablement** is another key preventative intervention which could potentially reduce costs (Jones et al 2009), meet the wishes of people who use services (Social Care Institute of Excellence 2012) and reduce demand on home care services (Research in Practice for Adults (RIPFA) 2007). This is defined as a short and intensive service, usually delivered in the home, which is offered to people with disabilities and those who are frail or recovering from an illness or injury. It helps people who have experienced deterioration in their health and/or have increased support needs to relearn the skills required to keep them safe and independent at home (Social Care Institute of Excellence 2012).

What shouldn’t we do?
Whilst it is recommended that older people should be assessed for frailty, routine population screening for frailty is not recommended. This is because it would be costly yet there is no evidence of improved outcomes. It may also be publicly unacceptable for individuals to be categorised as “frail” (BGS 2014).
What can we achieve? (Potential impact)
As the world’s population ages, many health and care systems are faced with the challenge of providing care that meets the needs and demands of an older population. The demographic shift has necessitated a shift from traditional models of service provision to more coordinated and efficient models.

The integration of care, highlighted earlier as the 10th component of care for older people, has become increasingly important and is now at the forefront of government legislation and policy. Evidence suggests that this has the potential to prevent duplication of interventions; design care around the needs of patients rather than organisational structures and give clarity to service users (Warner and Gould 2003), clearly demonstrating the need for change. This was well articulated in a Health Service Journal (HSJ) publication where it was highlighted that, “continuing to focus on individual conditions rather than individuals leads to fragmented, poorly coordinated care, which is inefficient, ineffective and delivers poor patient experience” (McShane and Mitchell 2013).

There are however, significant gaps in the evidence, with limited knowledge on the long-term impact of various initiatives to integrate health and social care services. Cost reductions, for example, are unlikely to be obvious in the short-term, hence a long-term evaluation (minimum 3-5 years) of any model that is implemented is needed. Integrated care initiatives implemented in Torbay Care Trust and the Greater Manchester (GM Health and Social Care (2011), Seymour (2013), Valuing Older People Partnership(2010)), have demonstrated potential ‘managerial’ cost reductions and cost savings that can be achieved through health and social services integration.

A recent evaluation of the national integrated care pilots in the UK also demonstrated a number of benefits for staff, patients and service users as a result of integration initiatives. These included:

- More care plans
• Better coordination upon hospital discharge;
• Net reductions in overall secondary care costs for sites focusing on case management of elderly people at risk of hospital admissions;
• Staff enthusiasm and belief that patient care improved.
• Better service user experience
• Better patient outcomes
• Less confusion and complexity for patients and their carers (RAND Europe, Ernst & Young LLP 2012)

There are therefore significant gains to be made from integrating health and social care. These will vary depending on the approach adopted. However, as clearly stated in a report by the King’s Fund (Ham and Walsh 2013), we need to be “realistic about the costs of integrated care” – one of the laws of integrated care is that “it costs before it pays”. Investment in new models might be required before funding is released from existing models. Innovations in integrated care may also need to be pump primed. Evidence suggests that integrated care can improve quality of services, however, there is little if any evidence that integrated care can be delivered more cheaply. International experience however suggests that integrated care can reduce waste and inefficiency by tackling duplication and fragmentation.

The “Fit for Frailty” report (BGS 2014) suggests that CGA increases independence after hospitalisation and reduces mortality. It cites a Cochrane review which showed those undergoing a CGA in the ward were 30% more likely to be alive and in their own home after 6 months (OR 1.31 CI 1.15-1.49) and a “number needed to treat” (NNT) of 13 to avoid one unnecessary death or institutionalisation compared to standard care. Another review which showed that CGA in the community focused on frail individuals could reduce admissions.
However, the second “Fit for Frailty” report (BGS 2015) also highlights the fact that “outcomes such as reduced unplanned admissions and reduction in health and social care costs may take time to achieve and are unlikely to be seen in the immediate aftermath of a service or structural change. These outcomes are also unlikely unless there has been a change in working practice at scale”. This should therefore be considered when evaluating the impact of local initiatives to improve the management of frailty.

**Reablement** has also been shown to improve independence, prolong people’s ability to live at home and remove or reduce the need for commissioned care hours (in comparison with standard home care). The best results (McLeod et al 2009) show that up to 62% of reablement users no longer need a service after 6–12 weeks (compared with 5% of the control group), and 26% had a reduced requirement for home care hours (compared with 13% of the control group). Additional studies suggest that these benefits persist. For example, in one study 76% of reablement users did not need services up to four months after completion (Lewin 2010). An Australian study (Le Mesurier and Cumella 1999) which used a randomised design, showed that 78% of those receiving reablement no longer required a support service after 3 months (compared with 31.1% of the control group). At 12 months, 85.8% no longer required a service (compared with 57% of the control group). Furthermore, over two years, the reablement group was less likely than the control group to use hospital emergency services. It is however worth noting that people with a high need for assistance on referral to reablement will not benefit as much as those with lower support requirements. These individuals may need a longer-term intensive service. It is therefore possible that people’s functional abilities at entry may affect the benefit they derive from the service.

A Social Policy Research Unit (SPRU) / Personal Social Services Research Unit (PSSRU) study (Glendinning et al 2010) provides detailed information on health costs and social care costs associated with reablement. The report found that health care costs were significantly higher for the reablement group during the initial eight week period (£1,600 compared with £1,095). Over the
subsequent 10 months and the whole 12-month study period, the reablement group incurred greater health care costs, although those differences were not significant. During the 12-month study period the reablement group incurred slightly lower overall social care costs compared with people using conventional home care, although the difference of £380 was not statistically significant. Overall, the study showed that following reablement, people’s need for social care services reduced by 60% compared to conventional home care. It also highlighted the fact that reablement requires significant initial investment with an average cost per user of £2,000 compared with an average of £1,392 for a six-week period of home care.

The SPRU/PSSRU study also reported the findings from a cost-effectiveness analysis based on wellbeing measures. The researchers combined the outcome results with health, social care and overall cost data to measure the incremental cost-effectiveness ratio (ICER), or the ratio of cost difference to outcome difference. The conclusions were that reablement was cost effective with regard to improving the outcomes measured by the EQ-5D (personal functioning). Using the National Institute for Health and Clinical Excellence cost-effectiveness threshold, reablement was cost effective in terms of health and social care costs. However, the reduction in social care costs was almost entirely offset by the initial cost of the reablement intervention. Overall, there is good evidence that reablement reduces the need for ongoing conventional home care and improves outcomes for people who use services and is therefore an important preventative intervention in people with frailty.

Quite often, people with frailty have cognitive impairment and dementia or vice versa. The two areas overlap - dementia contributes to frailty and physical frailty contributes to cognitive impairment and dementia. Risk factors for both conditions are also similar (BGS 2015). Other common problems in frailty which need to be addressed to reduce the severity and improve outcomes include falls, continence, mobility, weight loss and poor nutrition, polypharmacy, physical inactivity, low mood, excess alcohol intake, smoking, vision problems, social isolation and loneliness (BGS 2014). Some of the interventions to prevent these are discussed in section 5. We discuss the secondary and tertiary preventive interventions specifically in relation to dementia and falls next.
Dementia

What is dementia?
Dementia is a syndrome characterized by impaired cognitive functioning and is most common in older people. The ICD-10 definition of dementia is:

‘A syndrome due to disease of the brain, usually of chronic or progressive nature, in which there is disturbance of multiple higher cortical functions, including memory, thinking, orientation, comprehension, calculation, learning capacity, language and judgement. The impairments of a cognitive function are commonly accompanied, and occasionally preceded, by deterioration in emotional control, social behaviour, or motivation’.

Dementia develops over time, initially characterised by a minor decline in cognitive function. Whilst it is recognised that brain damage accumulates and cognitive function gradually declines with age, dementia is not a normal part of ageing. Majority of older people will therefore never develop the disease in their lifetime. The degree of exposure to risk factors or protective factors throughout one’s life course is thought to play an important role in determining the inter-individual differences in cognitive function observed within populations. A lot of the underlying pathophysiology is still poorly understood and as such delaying the clinical onset of the disease is seen as central to prevention (Prince et al 2014).

Although it is known that age and genetics play a role in determining a person’s risk of developing dementia, little is known about other modifiable risk factors for most sub-types of dementia. An exception to this is vascular dementia, for which there is evidence about a number of modifiable risk factors. These vascular risk factors contribute to a significant number of dementia cases, which
are hence potentially preventable. A smaller number of dementia cases are also associated with other preventable risk factors like head injury and excessive alcohol intake (PHE 2014a).

The Dementia UK Report (Alzheimer’s Society 2007) estimated that 62% of all cases of dementia were due to Alzheimer’s disease. The next most common subtypes of dementia were vascular dementia (17%) and mixed dementia (10%). These estimates suggest that close to 2,000 people in Suffolk have vascular dementia. Assuming the estimates remained the same, this number could double, rising to 4,000 by 2037. This therefore gives an indication of the size of the opportunity to intervene early and prevent an increase in the numbers of people developing vascular dementia in Suffolk.

The 2014 Blackfriar’s Consensus report reinforces this message. It highlights the contribution made by public health interventions to the modification of vascular risk factors and subsequent decline in deaths from cardiovascular disease. Evidence that the same primary prevention approach may have led to a decline in age-specific dementia rates in some countries is also cited (PHE 2014a).

There are a number of factors that increase the risk of developing vascular dementia. These include:

- A medical history of stroke, high blood pressure, high cholesterol, diabetes (particularly type II), heart problems or sleep apnoea (where breathing stops for a few seconds or minutes during sleep)
- A lack of physical activity, drinking more than recommended levels of alcohol, smoking, eating a fatty diet, or leaving conditions such as high blood pressure or diabetes untreated
- A family history of stroke or cardiovascular disease
- An Indian, Bangladeshi, Pakistani, Sri Lankan ethnic background (differences in vascular risk factors, such as heart disease, in these communities contribute to the increased risk)
- An African-Caribbean ethnic background (more research is needed to know why African-Caribbean people have an increased risk of vascular dementia)

Evidence (Prince et al 2014) also suggests that dementia risks exist throughout an individual’s life-course. The risks are clustered around specific developmental periods and the effects accumulate even decades before the onset of symptoms. Low birthweight, poor nutrition in early childhood, and low education in early life for instance influence growth and development of the brain and subsequent cognitive function. This in turn may be associated with an increased risk of developing dementia.

Developing brain and cognitive reserve in early life and consolidating this midlife (e.g. by ensuring people have access to a good education, mentally stimulating activity, social engagement and physical activity) from childhood is therefore crucial.

Many people are also fearful of dementia and feel socially isolated as a consequence of the associated stigma and a lack of empathy within the community. It is therefore important to address these issues by improving people’s awareness of the subject.

**The Suffolk picture**

In 2012/13, the estimated prevalence of dementia in Suffolk was approximately 11,000 people (Dementia UK population projections). By 2024, it is anticipated that this will rise to about 16,000 and by 2037 the prevalence of dementia will have more than doubled to just over 24,000. If we apply national estimates of incidence to the local population, we would expect to see approximately 435 new cases of dementia per year.

According to 2013/14 Quality Outcomes Framework (QOF) data, the number of registered patients in Suffolk with a dementia diagnosis is 5,470, giving Suffolk a detection rate of around 50% (PHE 2015d). It is therefore estimated that there are around 6,000 people with dementia in Suffolk who remain undiagnosed.
Nationally, NHS England has set out ambitions to target the ‘shockingly low’ diagnosis rates of dementia in England, which currently sit at around 45%. The plan aims to see two thirds (66%) of people living with dementia identified and given appropriate support (NHS England 2013). For Suffolk to meet the 66% national target, a further 1,800 people need to be identified and offered appropriate support.

As can be seen in the graph below, between 2009/2010 and 2012/13 Suffolk’s detected prevalence gradually increased and was higher than the England and East of England average. Although this is presented in the chart as being ‘worse’ the national and regional averages, the identification and diagnosis of dementia in more people is a good thing, as early diagnosis of dementia enables the person with dementia and their family carers to make choices about their care. It also allows access to specialist dementia services which provide care and support to the family, thereby reducing the likelihood of crises, admission to hospital and residential care.

Figure 19: Trend in dementia prevalence in Suffolk

Source: PHE (2015d)
As illustrated in figure 20 the risk of developing dementia increases with age - 85% of people with dementia in Suffolk are over the age of 75 years. The number of people living with dementia in Suffolk is therefore expected to rise as the population ages. If these projections remain true, there will be a rise in demand for services which is likely to place a significant strain on existing services.

Figure 20: Dementia cases by age and year in Suffolk

It is also worth noting that an estimated 70% of people in Suffolk with dementia live in the community and 30% live in residential care.
What are we doing about it? (Current action)
We know that at present, many people with dementia only get a diagnosis of dementia at a late stage. An early diagnosis of dementia is vital as it will allow a people living with dementia and their carers to access services and make choices about their care and their future. CCGs in Suffolk therefore continue to focus on improving dementia diagnosis rates.

A wide range of services to support people with dementia and their carers are available across Suffolk. However, a recent dementia needs assessment found that these were fragmented and access to the services was variable. In response, partners from both the statutory and voluntary sector in Suffolk are currently working together to provide a more integrated service for people living with dementia and their carers – through from diagnosis to more advanced stages of the illness. An example of this is ongoing work to commission an integrated post-diagnosis dementia service which will transform the quality and experience of dementia care by ‘joining up’ health and social care support and pool existing resources together to deliver better outcomes for people.

Suffolk has endorsed the national dementia friendly communities programme, and we are working with a wide range of partners to develop local resources within our communities and encourage more Suffolk communities to become ‘dementia friendly’. Examples of these in Suffolk include the Debenham Project and local projects in Halesworth and Wickham Market.

Work is also ongoing to raise dementia awareness by supporting national and local awareness campaigns and providing “dementia friends” training e.g. for staff within the council, Health and Wellbeing Board members, etc.

There has also been investment in infrastructure improvements to make the environment more dementia friendly. These include e.g. enhancements to people’s own homes, care homes, garden development and also the deployment of a range of assistive technologies.
What else should we consider doing?

As earlier mentioned, a number of modifiable factors increase the risk of developing vascular dementia. A number of these are amenable to primary prevention. People can therefore make lifestyle changes which can help prevent dementia – so smoking cessation, eating healthily, exercising, staying mentally and socially active and keeping stress in check are all important. The primary prevention interventions useful in addressing lifestyle factors and other modifiable risk factors are discussed further in section 5.

Evidence shows that the risk factors for frailty are also risk factors for dementia. Given this overlap with frailty, key interventions relevant to the secondary and tertiary prevention of frailty will also be relevant to dementia prevention. These are discussed in detail in the frailty section of this report. It is therefore important that this is considered when designing services to support the assessment and management of frailty. The assessment of cognitive impairment and dementia should be incorporated into frailty services (BGS 2015).

A recent publication by the National Dementia Intelligence Network documents that nationally, there has been a 48% rise in emergency admissions involving people with dementia since 2008/09. It highlights the fact that 20% of these admissions are due to potentially preventable acute conditions e.g. diseases of the urinary system, pneumonia and respiratory tract infections. The report also points out that 26% of the admissions were short stays (0-1 days) and that 18% of these short stay admissions were related to injuries to the head, hip and thigh. The report also presents data showing seven ICD 10 chapters which account for about 78% of the primary diagnoses for emergency admissions relating to people with dementia (PHE 2015e). These are strikingly similar to the ICD 10 codes identified as the leading causes of admission in people aged 65-84 years and over 85 years in Suffolk (see Section 3). This therefore further confirms the assertion that frailty and dementia overlap and preventative interventions will have an impact on
both conditions. To prevent admissions, the report suggests the adoption of “evidence-based and comprehensive admission programmes”. These include case-management, crisis resolution teams, intermediate care, telehealth, team-based interventions in A&E and the proactive management of long-term conditions. A focus on falls-prevention initiatives targeted at older people with dementia and home accident prevention interventions is also suggested to reduce injury-related admissions.

A longitudinal study which examined a cohort of people with dementia and their carers to identify what patient and carer characteristics influenced their transition into residential care (Banjaree et al 2003) showed that having a co-resident carer had a 20-fold protective effect (odds ratio 0.05, 95% confidence intervals 0.01 to 0.42, p=0.006). These findings illustrate the pivotal role carried out by carers of people with dementia. As highlighted in the section on frailty, support for carers is crucial in preventing permanent admission into residential care and in keeping people with dementia independent at home. This could in turn have an impact on social care costs.

**What shouldn’t we do?**

Services to support people living with dementia should not be designed in isolation. These should be included in services for the assessment and management of frailty.

**What can we achieve? (Potential impact)**

Dementia costs the UK economy an estimated £23 billion. Information is currently not available on how much is spent on health and care services for people with dementia and their carers in Suffolk. It is anticipated that these costs could rise in the future if life expectancy continues to increase despite worsening trends in obesity, diabetes, physical inactivity and excessive alcohol intake. There is however debate about whether the projected rise in dementia prevalence will happen following evidence that primary prevention approaches may have led to a decline in age-specific dementia rates in some countries (PHE 2014a).
Primary prevention to target risk factors earlier on in the life-course could potentially reduce the prevalence of dementia and hence the associated health and social care costs. The benefits will however take a while to evidence, given the time-lag between intervention and effect.

The dementia prevalence calculator estimates there are 3,300 people with dementia who live in Suffolk Care Homes. As illustrated in the chart below, in 2013/14, the Suffolk rate of permanent admissions to residential and nursing care homes in people 65+ per 100,000 of the population was 630 people. Based on the 2013 mid-point population figures for people 65+ in Suffolk (156,353) the overall number of permanent admissions to residential and nursing care homes was estimated to be 985 people in 2013/14.

Figure 21: Permanent admissions to residential nursing care homes per 100,000

Source: PHE (2015d)
A longitudinal study titled ‘Care Homes for Older People: admissions, needs and outcomes’ by Bebbington et al (2001) looked at the characteristics of newly admitted long-stay publicly-funded residents, and their outcomes and costs over a 3.5 year period. The survey, which covered approximately 2500 residents in 18 local authorities, showed that mental health problems (43%) and carer stress (38%) were major reasons for permanent admission to care homes.

Assuming 40% of Suffolk’s permanent admissions to residential and nursing care homes (~400) result from dementia carer stress and breakdown, and these clients remain 2 years in special needs residential or nursing care (£538 per week), the cost of this care would be £22,380,800 to adult social care commissioners.

Based on the conservative assumption that 10% (40) of these admissions could be delayed by one year through the cumulative effect of early diagnosis, access to specialist dementia services, reduced carer stress and the protective effect of a co-resident carer, this would produce a saving to adult social care commissioners of £1,119,040.

More ambitiously, assuming Suffolk’s dementia diagnosis rate increased to the 66% target set by NHS England and an additional 16% of Suffolk’s estimated dementia population were benefiting from the cumulative effect of early diagnosis, access to specialist dementia services, reduced carer stress and the protective effect of a co-resident carer. We might assume that as much as 16% (64) of these admissions could be delayed by one year, resulting in a saving to adult social care commissioners of £1,790,464. It is however important to note that there may be additional costs to the system associated with providing support to people living with dementia and their carers within the community.
Falls and fragility fractures

We saw earlier in section 3 that “Injury, poisoning and certain other consequences of external causes” (ICD-10 chapter 19), and in this category falls, featured as a leading causes of unplanned admission Suffolk residents aged over 65. Falls are a common problem in people living with frailty as well as with dementia. We therefore discuss falls and related injuries – namely fragility fractures and the opportunities for their prevention in this section.

What is a fall?
Many definitions of “a fall” exist in literature. A definition taken from a consensus statement is cited in a relatively recent Cochrane review (Gillespie et al 2012). In the review, a fall is defined as “an unexpected event in which the participant comes to rest on the ground, floor, or lower level”. It is however noted that the concept of a “fall” amongst older people may differ from that of researchers and healthcare professionals. Consequently it is advised that when asking older people whether they have fallen, one should ask whether they have had any fall including a slip or trip in which they lost their balance and landed on the floor or ground or lower level.

There are numerous reasons why people fall. Falls may cause no harm, other than mere embarrassment. However, they become a problem when they occur during ordinary and necessary activities, become recurrent, cause injury, induce fear and subsequently restrict activity leading to loss of independence.

Falls are not considered an “inevitable consequence” of ageing. Many of the associated risk factors are modifiable and should therefore be identified to prevent further falls and injuries. These include for example a previous fall, impaired gait and balance, muscle weakness, cognitive impairment (e.g. in dementia or delirium), polypharmacy (e.g. sedatives), visual impairment, syncope
and acute medical illnesses. Recurrent falls are often due to impaired postural stability and the resultant loss of strength, balance and concentration or insight. This can occur as a result of cardio-respiratory conditions, frailty, arthritis, stroke and Parkinson’s disease (DH 2009). Other risk factors for falls include alcohol abuse, poor and cold housing.

As our population ages, the incidence is increasing by about 2% annually (DH 2009). People aged 65 and over have the highest risk of falling. It is estimated that 30% of people aged over 65 and about 50% of people aged over 80 fall at least once a year (NICE 2013a). Between 10% and 25% of such fallers will sustain a serious injury (British Orthopaedic Association 2007). Hip fractures are the most serious consequence and commonest cause of accident-related death in older people. About 20% die within four months and 30% within a year. A half of those who were previously independent become partly dependent and a third become totally dependent (DH 2009). Falls and fall-related injuries are therefore a common and serious public health problem and have serious consequences for individuals and the health and care system.

What are fragility fractures?

Fragility fractures are a manifestation of osteoporosis (Mitchell and Adekunle 2010, NICE 2012a). In osteoporosis, the structure of bone tissue deteriorates and weakens, making it fragile and susceptible to fractures. Common sites for fragility fractures include the spine, hip and wrist. It could however also affect bones in other parts of the body. These fractures occur as a result of low-level trauma that would not ordinarily result in a fracture, quite often following a fall from a standing height or lower. Risk factors for osteoporosis include increased age, female sex, family history, previous fractures and the use of oral or systemic glucocorticoids (steroid) treatment.

Osteoporosis develops over time and quite often goes unnoticed until a fragility fracture occurs, for example when an older person falls and sustains a fracture. Without intervention, osteoporosis will have serious consequences. People with osteoporosis will often
initially suffer minor fragility fractures and as the disease progresses suffer more debilitating fractures. The diagram below, clearly illustrates this. It shows the severity of fragility fractures increasing with increasing age and risk of falls and with reducing bone density. The fragility fractures could therefore result in severe pain and disability, reduced quality of life and when hip or vertebral fractures occur, reduced life expectancy. The progressive nature of the osteoporosis however allows for targeted preventative interventions to reduce its consequences.

Evidence (Mitchell and Adekunle 2010) from studies in the US, Australia, and Scotland shows that over half of all patients who present with a hip fracture have had prior fragility fractures. A prior fracture at any site was associated with the doubling of future fracture risk. These prior fractures therefore serve as “signal” fractures and present an opportunity for secondary prevention or intervention. Most non-vertebral fragility fractures occur following a fall and are hence also amenable to falls prevention interventions.
Evidence (Mitchell and Adekunle 2010) from studies in the US, Australia, and Scotland shows that over half of all patients who present with a hip fracture have had prior fragility fractures. A prior fracture at any site was associated with the doubling of future fracture risk. These prior fractures therefore serve as “signal” fractures and present an opportunity for secondary prevention or intervention. Most non-vertebral fragility fractures occur following a fall and are hence amenable to falls prevention interventions.
It is also important to point out that women are more likely to be affected because they are at higher risk of falling. Women are also more likely to sustain fragility fractures following a fall due to their increased osteoporosis risk after menopause.

**The Suffolk picture**

As pointed out earlier, our population continues to age, and we anticipate that about a third of the population will be aged over 65, a quarter between 65 and 84, and about 7% over 85 by 2037. We will therefore have a large cohort of people at high risk of falling.

Co-morbidities further compound the problem - for example, almost a quarter of 75 to 84 year olds and half of over 85’s report that their day to day activities are limited by poor health; we have about 11,000 people living with dementia in Suffolk and this is predicted to rise to 16,000 by 2037; about 25-50% of over 85’s are frail, suggesting we could have as many as 30,000 frail individuals by 2037; we also have about 5,000 people registered as visually impaired in Suffolk – all these individuals are at risk of falling and sustaining serious injuries.

Care home residents are also three times more likely to fall than older people living in the community, and in Suffolk a third (33.1%) of residents are aged 65 to 84 years old and over half (57.1%) are over 85, hence at an even higher risk of falling.

We also know that in Suffolk, the proportion of males to females changes as the population ages e.g. ONS, 2013 mid-year population estimates show that:

- 45.9% of the over 65s are male and 54.1% female
- 47.5% of 65 to 84 year olds are male and 52.5% female
- 35.8% of over 85s are male and 64.2% females
This is particularly important as it further illustrates that we have an increasing cohort of older women at risk of injurious falls.

Table 14 below shows estimates of the number of people in Suffolk predicted to have a fall. It is anticipated that this will continue to rise reflecting the increased risk of falls in our ageing population.

Table 14: People aged 65 and over in Suffolk predicted to have a fall, by age, projected to 2030

<table>
<thead>
<tr>
<th>Age band</th>
<th>2014</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-69 years</td>
<td>10,421</td>
<td>10,572</td>
<td>9,393</td>
<td>10,016</td>
<td>11,538</td>
</tr>
<tr>
<td>70-74 years</td>
<td>8,663</td>
<td>9,093</td>
<td>11,739</td>
<td>10,504</td>
<td>11,262</td>
</tr>
<tr>
<td>75-79 years</td>
<td>6,983</td>
<td>7,048</td>
<td>8,241</td>
<td>10,695</td>
<td>9,645</td>
</tr>
<tr>
<td>80-84 years</td>
<td>7,288</td>
<td>7,415</td>
<td>8,415</td>
<td>10,046</td>
<td>13,144</td>
</tr>
<tr>
<td>85 years and over</td>
<td>9,761</td>
<td>10,191</td>
<td>12,083</td>
<td>14,706</td>
<td>18,404</td>
</tr>
<tr>
<td>Total population aged 65 and over</td>
<td>43,116</td>
<td>44,319</td>
<td>49,871</td>
<td>55,967</td>
<td>63,993</td>
</tr>
</tbody>
</table>

Source: Table produced on 16/07/15 12:20 from www.poppi.org.uk version 9.0

As illustrated in table 15 below, there is likely to be a similar trend in admissions to hospital as a result of falls. Projections to 2030 show a rising trend. Those admitted are either likely to have sustained a serious injury or are at risk of serious injury.

Table 15: People aged 65 and over predicted to be admitted to hospital as a result of falls, by age, projected to 2030

<table>
<thead>
<tr>
<th>Age band</th>
<th>2014</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>65-69 years</td>
<td>264</td>
<td>267</td>
<td>237</td>
<td>254</td>
<td>292</td>
</tr>
<tr>
<td>70-74 years</td>
<td>338</td>
<td>355</td>
<td>456</td>
<td>408</td>
<td>439</td>
</tr>
<tr>
<td>75 years and over</td>
<td>2,764</td>
<td>2,826</td>
<td>3,290</td>
<td>4,088</td>
<td>4,585</td>
</tr>
<tr>
<td>Total population aged 65 and over</td>
<td>3,365</td>
<td>3,449</td>
<td>3,983</td>
<td>4,750</td>
<td>5,316</td>
</tr>
</tbody>
</table>

Source: Table produced on 16/07/15 12:20 from www.poppi.org.uk version 9.0
Cost and hospital activity for falls and fragility fractures in Suffolk

We analysed hospital activity and cost data on falls obtained from the three Suffolk CCGs. The findings are summarised next.

Falls

Available data on emergency admissions for falls in Suffolk patients aged 50 years and over between 2011/12 and 2013/14 is summarised in the tables below. The data includes any diagnosis for falls (ICD 10 diagnosis codes W00-W19). The data does not show an obvious trend. It is however worth noting that the falls projections above are likely to be higher than the actual activity below e.g. actual activity in 2013/14 is 428 less than the 2014 projections. This could be for a variety of reasons e.g. the former is based on Suffolk’s GP registered population and the latter on the Suffolk resident population; the difference in reporting periods; and potentially inaccuracies in coding which means not all falls-related admissions are captured.

Analysis of the data showed that between 2011/12 – 2013/14, those aged over 65 were responsible for close to 90% of the falls-related admissions, over 75s for close to 75%, and over 85’s for close to 44% of these admissions. Falls related emergency admissions in patients aged 50 and over cost the NHS over £ 30 million. About 78% of the cost was attributable to the over 75’s and 46% of the cost to the over-85’s. Women accounted for just over two-thirds (66%) of all falls-related admissions and about 68% of the cost during this time period. Just over half (52%) of all falls related admissions were in women aged over 75. Women in this age group were responsible for close to 55% of the associated costs. There is therefore merit in targeting over 65s, and in particular women, for falls-prevention interventions, especially given the increased risk of serious injury due to underlying osteoporosis in the post-menopausal period.
### Table 16a: Emergency admissions for falls in all Suffolk patients aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>368</td>
<td>527</td>
<td>1,105</td>
<td>1,593</td>
<td>3,593</td>
<td>3,225</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>371</td>
<td>441</td>
<td>992</td>
<td>1,372</td>
<td>3,176</td>
<td>2,805</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>341</td>
<td>501</td>
<td>990</td>
<td>1,446</td>
<td>3,278</td>
<td>2,937</td>
</tr>
<tr>
<td><strong>2011/12-2013/14</strong></td>
<td></td>
<td><strong>1,080</strong></td>
<td><strong>1,469</strong></td>
<td><strong>3,087</strong></td>
<td><strong>4,411</strong></td>
<td><strong>10,047</strong></td>
<td><strong>8,967</strong></td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

### Table 16b: Cost of emergency admissions for falls in all Suffolk patients aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>£ 950,681</td>
<td>£ 1,520,178</td>
<td>£ 3,420,190</td>
<td>£ 5,017,452</td>
<td>£ 10,908,502</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>£ 853,478</td>
<td>£ 1,222,510</td>
<td>£ 2,921,082</td>
<td>£ 4,245,345</td>
<td>£ 9,242,414</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>£ 791,153</td>
<td>£ 1,405,721</td>
<td>£ 3,125,956</td>
<td>£ 4,576,995</td>
<td>£ 9,899,825</td>
</tr>
<tr>
<td><strong>2011/12-2013/14</strong></td>
<td></td>
<td><strong>£ 2,595,312</strong></td>
<td><strong>£ 4,148,409</strong></td>
<td><strong>£ 9,467,228</strong></td>
<td><strong>£ 13,839,792</strong></td>
<td><strong>£ 30,050,741</strong></td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

### Table 17a: Emergency admissions for falls in male Suffolk patients aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>168</td>
<td>231</td>
<td>399</td>
<td>457</td>
<td>1,255</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>191</td>
<td>179</td>
<td>341</td>
<td>364</td>
<td>1,075</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>156</td>
<td>199</td>
<td>330</td>
<td>379</td>
<td>1,064</td>
</tr>
<tr>
<td><strong>2011/12-2013/14</strong></td>
<td></td>
<td><strong>515</strong></td>
<td><strong>609</strong></td>
<td><strong>1070</strong></td>
<td><strong>1,200</strong></td>
<td><strong>3,394</strong></td>
</tr>
</tbody>
</table>
**Table 17b: Cost of emergency admissions for falls in male Suffolk patients aged 50 years and over**

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>£ 403,191</td>
<td>£ 619,739</td>
<td>£ 1,136,697</td>
<td>£ 1,349,150</td>
<td>£ 3,508,778</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>£ 382,194</td>
<td>£ 499,637</td>
<td>£ 955,548</td>
<td>£ 1,114,181</td>
<td>£ 2,951,560</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>£ 301,202</td>
<td>£ 494,938</td>
<td>£ 1,071,585</td>
<td>£ 1,205,278</td>
<td>£ 3,073,003</td>
</tr>
<tr>
<td><strong>2011/12-2013/14</strong></td>
<td></td>
<td><strong>£ 1,086,587</strong></td>
<td><strong>£ 1,614,314</strong></td>
<td><strong>£ 3,163,830</strong></td>
<td><strong>£ 3,668,608</strong></td>
<td><strong>£ 9,533,340</strong></td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

**Table 18a: Emergency admissions for falls in female Suffolk patients aged 50 years and over**

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>200</td>
<td>296</td>
<td>706</td>
<td>1,136</td>
<td>2,338</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>180</td>
<td>262</td>
<td>651</td>
<td>1,008</td>
<td>2,101</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>185</td>
<td>302</td>
<td>660</td>
<td>1,067</td>
<td>2,214</td>
</tr>
<tr>
<td><strong>2011/12-2013/14</strong></td>
<td></td>
<td><strong>565</strong></td>
<td><strong>860</strong></td>
<td><strong>2,017</strong></td>
<td><strong>3,211</strong></td>
<td><strong>6,653</strong></td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

**Table 18b: Cost of emergency admissions for falls in female Suffolk patients aged 50 years and over**

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>£ 547,490</td>
<td>£ 900,439</td>
<td>£ 2,283,493</td>
<td>£ 3,668,301</td>
<td>£ 7,399,723</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>£ 471,284</td>
<td>£ 722,873</td>
<td>£ 1,965,533</td>
<td>£ 3,131,164</td>
<td>£ 6,290,855</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>£ 489,950</td>
<td>£ 910,783</td>
<td>£ 2,054,371</td>
<td>£ 3,371,717</td>
<td>£ 6,826,822</td>
</tr>
<tr>
<td><strong>2011/12-2013/14</strong></td>
<td></td>
<td><strong>£ 1,508,725</strong></td>
<td><strong>£ 2,534,095</strong></td>
<td><strong>£ 6,303,397</strong></td>
<td><strong>£ 10,171,183</strong></td>
<td><strong>£ 20,517,400</strong></td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)
Hip fractures

We analysed data on emergency admissions for hip fractures in Suffolk patients aged 50 years and over between 2011/12 and 2013/14. This is summarised in the tables below. The data includes emergency admissions with a primary diagnosis code ICD-10: S72.0, S72.1, S72.2. The data does not show an obvious trend. However, it is important to point out that during this time period, most (about 83%) of the hip fractures were in people aged over 75 years, and similarly 84% of the cost was attributed to this age group. The over 85’s alone were responsible for close to half (49%) of the hip fracture costs during this period. Overall, hip fractures cost the NHS over £15 million over the three year period.

Further analysis showed that almost three quarters (74%) of the hip fractures were in females, with 62% of all hip fractures occurring in females aged over 75. Similarly, females were responsible for about 74% of the costs, with over 75s responsible for close to 63% of the hip fracture costs during this time period.

Table 19a: Emergency admissions for hip fractures in Suffolk patients aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td>53</td>
<td>113</td>
<td>334</td>
<td>456</td>
<td>956</td>
</tr>
<tr>
<td>2012/13</td>
<td>44</td>
<td>110</td>
<td>340</td>
<td>447</td>
<td>941</td>
</tr>
<tr>
<td>2013/14</td>
<td>54</td>
<td>128</td>
<td>345</td>
<td>510</td>
<td>1,037</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td>151</td>
<td>351</td>
<td>1,019</td>
<td>1,413</td>
<td>2,934</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)
### Table 19b: Cost of emergency admissions for hip fractures in Suffolk patients aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>£ 236,714</td>
<td>£ 601,362</td>
<td>£ 1,775,615</td>
<td>£ 2,437,373</td>
<td>£ 5,051,064</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>£ 199,923</td>
<td>£ 510,480</td>
<td>£ 1,597,956</td>
<td>£ 2,245,544</td>
<td>£ 4,553,903</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>£ 218,114</td>
<td>£ 628,928</td>
<td>£ 1,925,457</td>
<td>£ 2,825,883</td>
<td>£ 5,598,383</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td></td>
<td>£ 654,751</td>
<td>£ 1,740,771</td>
<td>£ 5,299,027</td>
<td>£ 7,508,801</td>
<td>£ 15,203,350</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

### Table 20a: Emergency admissions for hip fractures in Suffolk males aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>20</td>
<td>30</td>
<td>77</td>
<td>111</td>
<td>238</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>11</td>
<td>47</td>
<td>93</td>
<td>106</td>
<td>257</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>19</td>
<td>34</td>
<td>97</td>
<td>116</td>
<td>266</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td></td>
<td>50</td>
<td>111</td>
<td>267</td>
<td>333</td>
<td>761</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

### Table 20b: Cost of emergency admissions for hip fractures in Suffolk males aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>£ 109,001</td>
<td>£ 165,081</td>
<td>£ 410,902</td>
<td>£ 564,740</td>
<td>£ 1,249,724</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>£ 49,004</td>
<td>£ 208,993</td>
<td>£ 443,068</td>
<td>£ 531,984</td>
<td>£ 1,233,049</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>£ 84,746</td>
<td>£ 159,939</td>
<td>£ 613,283</td>
<td>£ 675,057</td>
<td>£ 1,533,025</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td></td>
<td>£ 242,751</td>
<td>£ 534,013</td>
<td>£ 1,467,253</td>
<td>£ 1,771,782</td>
<td>£ 4,015,798</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)
Table 21a: Cost of emergency admissions for hip fractures in Suffolk females aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td>33</td>
<td>83</td>
<td>257</td>
<td>345</td>
<td>718</td>
<td></td>
</tr>
<tr>
<td>2012/13</td>
<td>33</td>
<td>63</td>
<td>247</td>
<td>341</td>
<td>684</td>
<td></td>
</tr>
<tr>
<td>2013/14</td>
<td>35</td>
<td>94</td>
<td>248</td>
<td>394</td>
<td>771</td>
<td></td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td>101</td>
<td>240</td>
<td>752</td>
<td>1,080</td>
<td>2,173</td>
<td></td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

Table 21b: Cost of emergency admissions for hip fractures in Suffolk females aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td></td>
<td>£ 127,712</td>
<td>£ 436,281</td>
<td>£ 1,364,713</td>
<td>£ 1,872,633</td>
<td>£ 3,801,340</td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td>£ 150,920</td>
<td>£ 301,487</td>
<td>£ 1,154,888</td>
<td>£ 1,713,560</td>
<td>£ 3,320,855</td>
</tr>
<tr>
<td>2013/14</td>
<td></td>
<td>£ 133,368</td>
<td>£ 468,990</td>
<td>£ 1,312,174</td>
<td>£ 2,150,826</td>
<td>£ 4,065,358</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td></td>
<td>£ 412,000</td>
<td>£ 1,206,758</td>
<td>£ 3,831,775</td>
<td>£ 5,737,019</td>
<td>£ 11,187,552</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

Non-hip fragility fractures

We also undertook an analysis of data on emergency admissions due to non-hip fragility fractures (i.e. osteoporosis with pathological fracture - primary diagnosis: M80) in Suffolk patients aged over 50 between 2011/12 and 2013/14. This does not however capture all non-hip fragility fractures because most people presenting with simple fractures are unlikely to be admitted. Non-hip fragility fractures are also often missed e.g. vertebral fractures. European data suggests non-hip fragility fracture rates are estimated to be about five times the hip fracture rate (International Osteoporosis Association 2012). This suggests that the number of non-hip fragility fractures could in Suffolk could have been close to 14,700 (close to 5,000 each year), based on the number of
hip fractures in Suffolk during this time period. The findings from our analysis of the emergency admissions data are summarised in the tables below.

The data suggests that over this period there was a fall in non-hip fragility fractures. Most admissions (close to 80%) were in the over-75 age group and similarly 80% of the cost was attributable to this age group. As would be expected, 84% of the people admitted were females, with about 82% of the admission costs attributable to females as well. During this period majority (68%) of those admitted were females aged over 75.

Table 22a: Emergency admissions for non-hip fragility fractures in Suffolk patients aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50-64</td>
</tr>
<tr>
<td>2011/12</td>
<td>4</td>
</tr>
<tr>
<td>2012/13</td>
<td>5</td>
</tr>
<tr>
<td>2013/14</td>
<td>2</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td>11</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

Table 22b: Cost of emergency admissions for non-hip fragility fractures in Suffolk patients aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>Age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50-64</td>
</tr>
<tr>
<td>2011/12</td>
<td>£ 9,607</td>
</tr>
<tr>
<td>2012/13</td>
<td>£ 17,865</td>
</tr>
<tr>
<td>2013/14</td>
<td>£ 10,655</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td>£ 38,127</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)
Table 23a: Emergency admissions for non-hip fragility fractures in Suffolk females aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td>3</td>
<td>7</td>
<td>22</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>2012/13</td>
<td>2</td>
<td>3</td>
<td>14</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>2013/14</td>
<td>1</td>
<td>5</td>
<td>15</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td>6</td>
<td>15</td>
<td>51</td>
<td>40</td>
<td>112</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

Table 23b: Cost of emergency admissions for non-hip fragility fractures in Suffolk females aged 50 years and over

<table>
<thead>
<tr>
<th>Financial year</th>
<th>50-64</th>
<th>65-74</th>
<th>75-84</th>
<th>85+</th>
<th>50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011/12</td>
<td>£ 6,955</td>
<td>£ 26,015</td>
<td>£ 89,312</td>
<td>£ 80,865</td>
<td>£ 203,148</td>
</tr>
<tr>
<td>2012/13</td>
<td>£ 6,068</td>
<td>£ 9,190</td>
<td>£ 52,745</td>
<td>£ 48,491</td>
<td>£ 116,494</td>
</tr>
<tr>
<td>2013/14</td>
<td>£ 5,699</td>
<td>£ 13,442</td>
<td>£ 52,312</td>
<td>£ 13,299</td>
<td>£ 84,751</td>
</tr>
<tr>
<td>2011/12-2013/14</td>
<td>£ 18,722</td>
<td>£ 48,647</td>
<td>£ 194,369</td>
<td>£ 142,655</td>
<td>£ 404,393</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015a)

It is worth noting that QOF registers, if complete, could be used to estimate the prevalence of osteoporosis. Practices are required to establish and maintain a register of patients:

- Aged 50 or over and who have not attained the age of 75 with a record of a fragility fracture on or after 1 April 2012 and a diagnosis of osteoporosis confirmed on DXA scan, and
- Aged 75 or over with a record of a fragility fracture on or after 1 April 2014
Table 24 below shows the numbers identified via GP QOF registers and estimated prevalence by CCG in Suffolk compared to regional and national estimates.

Table 24: prevalence of osteoporosis in persons aged 50 and over (2013/14)

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of patients on osteoporosis registers</th>
<th>Sum of estimated list sizes Persons aged 50 years and over</th>
<th>Prevalence of osteoporosis (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ipswich and East Suffolk CCG</td>
<td>690</td>
<td>158,627</td>
<td>0.43%</td>
</tr>
<tr>
<td>West Suffolk CCG</td>
<td>279</td>
<td>98,187</td>
<td>0.28%</td>
</tr>
<tr>
<td>Great Yarmouth and Waveney CCG</td>
<td>366</td>
<td>100,605</td>
<td>0.36%</td>
</tr>
<tr>
<td>Suffolk County</td>
<td>1,195</td>
<td>308,744</td>
<td>0.39%</td>
</tr>
<tr>
<td>East Anglia Area Team</td>
<td>4,043</td>
<td>983,319</td>
<td>0.41%</td>
</tr>
<tr>
<td>Midlands and East of England Commissioning Region</td>
<td>25,105</td>
<td>6,151,960</td>
<td>0.41%</td>
</tr>
<tr>
<td>England</td>
<td>79,526</td>
<td>19,702,685</td>
<td>0.40%</td>
</tr>
</tbody>
</table>

Source of data: HSCIC (2015)

The QOF data here suggests that osteoporosis prevalence is quite low. However, as pointed out earlier, 1 in 3 women and 1 in 12 men aged over 50 are affected by osteoporosis. If this was applied to CCG populations locally, we would expect to see a prevalence of about 21.4% in each of the CCG areas. The QOF prevalence could be low due to the registers being incomplete.
This was evident in an audit done in one Suffolk practice - this for example, showed that there were more people in that practice on bone sparing agents than were on the osteoporosis register.

**What are we doing about it?**

In early 2014, partner organisations in Suffolk agreed to “A Proposed Strategy for Integrated Falls and Osteoporotic Fragility Fracture (IFFF) Prevention & Care, 2014 – 2019”. The strategy was put together by our local integrated falls and fragility fracture (IFFF) groups. Progress towards the objectives set out in the document is regularly monitored through the Suffolk Health and Wellbeing Board.

As stated in the strategy, our vision for integrated falls and fragility fracture prevention and care in Suffolk is “to ensure we, as a local system, implement the four objectives set out in the DoH’s systematic approach to falls and fracture prevention and, in doing so, create pathways of care that are integrated and orientated around the needs of patients and their family carers, evidence-informed, and offer compassionate quality care to Suffolk’s most frail and elderly”.

The diagram below summarises this approach, taken from the Department of Health’s (DH 2009) prevention package for older people.
Linked to each tier above, is an objective. The four objectives, listed below in priority order in terms of impact and evidence-base, are as follows:

Source: Department of Health (2009)
• **Objective 1:** Improve patient outcomes and improve efficiency of care after hip fractures through – by following the 6 ‘Blue Book’ standards

• **Objective 2:** Respond to a first fracture and prevent the second – through fracture liaison services in acute and primary care settings

• **Objective 3:** Early intervention to restore independence – through falls care pathways, linking acute and urgent care services to secondary prevention of further falls and injuries

• **Objective 4:** Prevent frailty, promote bone health and reduce accidents – through encouraging physical activity and healthy lifestyle, and reducing unnecessary environmental hazards

The local system has made significant progress toward delivering the DoH’s Stepwise Implementation Plan. For example, our local acute trusts have implemented a “best-practice tariff” to improve hip fracture care (objective 1); whilst only a third of all CCGs in England have Fracture Liaison Services (FLS) commissioned, we have two FLS operational, one in the East and one in the West of the county (objective 2). It is however acknowledged that more needs to be done to go to close gaps in current practice and better coordinate services across the health and social care and the voluntary sectors. Work is ongoing for example to improve our falls care pathways e.g. implementing NICE guidelines and quality standards for falls prevention, and as alluded to earlier in this report, to prevent frailty and ill health and promote healthy lifestyles (objectives 3 and 4).

**What else should we consider doing?**
Given our ageing population and the estimates we have of the number of people predicted to fall, we should do more to ensure that all older people who come into contact with health and care professionals are routinely asked whether they have fallen in the past year. We should then ensure we have in place mechanisms to follow them up and offer a multi-factorial falls risk assessment and an individualised multifactorial intervention as appropriate (NICE 2013a).
Current service provision for the prevention of falls should be reviewed with a view to improving quality. The recently published NICE quality standard (QS 86) – “Falls in older people: assessment after a fall and preventing further falls” (NICE 2015a), sets out high priority areas for quality improvement and addresses falls in older people living in the community and those in hospital. A review against these standards would make a good starting point.

As earlier mentioned, identifying people who have had fragility fractures and those at risk of fragility fractures presents us with the opportunity to intervene and prevent up to half of all hip fractures. Health and care providers in our fracture liaison services (FLS), primary and secondary care and in the community should work together to systematically identify and follow up people in these risk groups. Ensuring that NICE guidelines on osteoporosis - assessment of fragility fracture risk, are implemented could help to support this work (NICE 2012a).

More could be done achieve objective 4 in our systematic approach to falls and fragility fractures prevention, i.e. to prevent frailty, promote bone health and reduce accidents – through encouraging physical activity and a healthy lifestyle, and reducing unnecessary environmental hazards. We know for example, that there is a dose-response relationship between physical activity and hip fracture risk, therefore the more physical activity people do the less their risk of a hip fracture (DH 2011a). We should therefore encourage behaviour change in individuals, and in particular in older and working age people, and offer opportunities for evidence-based physical activity.
What shouldn’t we do?

We should not offer interventions that are not evidence-based for the prevention of falls and fragility fractures. NICE guidelines for falls prevention give a list of interventions that cannot be recommended for falls prevention due lack of evidence or insufficient evidence (NICE 2013a).

People under the age of 50 are unlikely to be at high risk of fragility fractures. We should therefore not routinely assess fracture risk in this age group of people unless they have major risk factors e.g. oral or systemic corticosteroid use, premature menopause, or history of a previous fragility fracture (NICE 2012a).

What can we achieve? (Potential impact)

Over the three year period between 2011/12 and 2013/14, there were 2,934 hip fractures (costing the NHS over £ 15 million) across Suffolk and possibly up to five times more the number of non-hip fragility fractures (close to 14,700). Given the opportunity to intervene in up to half of all hip fractures, one could argue that close to 500 hip fractures are preventable in Suffolk each year with a cost saving of up to £2.5 million to the NHS less any expenditure on preventive activity e.g. bone sparing agents, falls prevention exercise, existing FLS services, etc. Prevention would still cost the Suffolk system less as the cost estimates do not include those associated with loss of independence (e.g. need for social care packages, loss of personal productivity, etc.) as a result of the hip fracture). Work by Tricordant in Suffolk showed that falls were the leading reason for permanent admission into residential care (Tricordant Ltd 2011). Over 20% of all older people admitted Suffolk hospitals with a hip fracture in 2013 were discharged to nursing or residential care. Each placement carries a mean life-time cost of £64,000 to adult social care budgets (National Hip Fracture Database 2013). Falls and fragility fracture prevention would therefore have a significant impact on both health and social care costs.
Evidence on the cost burden associated with falls is presented in a report by the Kings Fund (Tian et al 2013), which looked at evidence from Torbay. Their analysis showed that the cost of a major fall resulting in an inpatient spell was around £3,000. A large majority of patients in their cohort study presented with ‘injuries’ as their primary diagnosis, and many patients had co-morbidities, the most common of which were dementia, hypertensive diseases and diabetes. Interestingly, the use of patient-level linked data in Torbay in a cohort of 412 fallers showed that in the 12 months following a fall, care costs rose by 70%. Moreover, the biggest increase was in community healthcare care costs (160% increase), compared to a 37% increase in social care costs and a 35% increase in acute hospital care. The findings are illustrated in the chart below.

Figure 24: Cost burden data

According to the King’s Fund study, the majority of the costs of caring for patients after a fall are outside the acute hospital setting – something that is perhaps often missed because data on costs is rarely brought together. This might therefore suggest even bigger returns across the system from the prevention of falls and fragility fractures.

**Self-care**

**Measures and epidemiology**

Self-care is what people do in their everyday lives – what they eat, how much they exercise and how far they follow medical advice – largely determines their health and their need for health care. It is important to remember that someone with a long-term condition spends on average 3 hours each year in contact with a healthcare professional, and 8757 hours looking after themselves (Wallace et al 2012). Given the pressures on NHS and social care resources, one way of using these resources more effectively is to encourage people to engage in self-management, which refers to care taken by people to support their own health and well-being, and can include adoption of a healthy lifestyle, and actions taken to better manage long-term conditions and to meet psychosocial needs. As well as the potential benefits for health, self-care also offers a more participatory approach to health care, with patients making a critical contribution to achieving health gain and making decisions to ensure that their care is personalised to their needs.

Formal self-care support in England can be provided through a number of different models (DH 2008). These include:

- Increasing access to health information (Coulter and Ellis 2007)
- Deployment of assistive technologies such as telehealth and telecare (Barlow et al 2007, Murray et al 2005)
• Facilitation of community-based skills training and support networks, such as the Dose Adjustment For Normal Eating (DAFNE) (DAFNE Study Group 2002) and Diabetes Education and Self-Management for Ongoing and Newly Diagnosed (DESMOND) (Davies et al 2008)
• Courses for particular conditions and the NHS version of the CDSMP (the Expert Patients Programme) (Rogers et al 2008) for generic long-term conditions interventions led by health professionals

Current action
Self-care is no longer routinely, or consistently, commissioned by Clinical Commissioning Groups. The only self-care interventions currently commissioned by CCGs in Suffolk are through annual Commissioning for Quality and Innovation (CQUIN) schemes with local hospitals (for example, a scheme to incentivise the provision of additional written advice for patients to support self-care when they are discharged from hospital), and the DESMOND programme.

What else to do?
While there is a considerable evidence base relating to the provision of self-care, it is a complex area which is difficult to research. A recent systematic review and meta-analysis of 184 studies considered the evidence base up to 2013, and assessed which models of formal self-care support for patients with long-term conditions were associated with significant reductions in health services utilisation (including hospital use) without compromising patient outcomes (Panagioti et al 2014).

The review found that self-care support rarely compromises patient outcomes, and was generally associated with small improvements in patients’ quality of life. Some self-care interventions also reduced utilisation of health care, with the best evidence of this in respiratory and cardiovascular patients. For patients with these particular diseases, there is a significant evidence base suggesting small but consistent reductions in hospital use and costs resulting from supported self-care. However, the effects on resource utilisation and costs were generally modest, and there was no evidence for effects on utilisation in patients with diabetes, arthritis, or a combination of long-term conditions.
The role of telehealth (including the remote monitoring of physiological data and the use of technology to enable remote consultation between health professionals and a patient), and telecare (which includes alarms or sensors, usually employed in the patient’s home, and enabling people to live more independently) is also developing rapidly, and has the potential to enable self-care. The current evidence suggests that telehealth/telecare interventions and assistive technologies may be a useful contribution for management of some conditions, e.g. heart failure, but that each telemedicine intervention requires careful consideration, and should be tailored for a specific target group (Mortenson et al 2012, Robinson et al 2013, Woods ad Snow 2012, Anttila et al 2012).

A different approach to disease-specific patient-support is to look at the overall issue of “patient activation”. Patient activation describes the knowledge, skills and confidence a person has in managing their own health and health care. People who have low levels of activation are less likely to play an active role in staying healthy. They are less good at seeking help when they need it, at following a doctor’s advice and at managing their health when they are no longer being treated. Their lack of confidence, and experience of failing to manage their health, often means that they prefer not to think about it.

An individual patient’s level of activation can be assessed and scored, and these scores have been robustly demonstrated to predict a number of health behaviours (Hibbard and Gilburt 2014). They are closely linked to clinical outcomes, the costs of health care and patients’ ratings of their experience. Highly activated patients are more likely to adopt healthy behaviour, to have better clinical outcomes and lower rates of hospitalisation, and to report higher levels of satisfaction with services; overall, to be more effective self-carers.

Given this modest evidence for disease-specific patient self-care, including telehealth, but a growing interest in the concept of patient activation, it is suggested that the following could be explored:
• Commissioning disease-specific patient self-care initiatives in Suffolk for the patient groups where there is evidence that they do no harm to outcomes and can reduce use of services and costs, notably for patients with cardiac and respiratory diseases
• Understanding the Patient Activation Measure (PAM) in more detail, and assessing it’s suitability for local use in stratifying Suffolk patients into tailored interventions likely to be benefit to them

What not to do?
Self-care support is not a “quick fix”; any approach adopted is likely to need sustained commitment over a period of time.
5. Predicting future chart toppers

Preventing conditions from developing in the first place

How we chose the areas to focus on

The previous chapters have identified the illness and issues causing the highest demand in the health and care system. This chapter looks at how we can prevent some of the demand by improving health through “primary prevention”, which aims to protect healthy people from developing a health issue or experiencing an injury. We examine interventions that will have a short and medium impact (before 10 years), look at what we are currently doing in Suffolk and where we need to improve. Where possible we look at whether we are addressing health inequalities through our interventions.

The top five risk factors that contribute to early death and reduced quality of life in the UK are:

- Smoking tobacco
- Having high blood pressure
- Being overweight or obese
- Lack of physical activity
- Excessive alcohol consumption (Murray et al 2013)

These have already been highlighted as underlying causes of the high demand areas locally. The top four alone are underlying causes of 40% of disability life years lost through their contribution to heart disease, stroke and lung cancer among other types of illness. All except high blood pressure are directly related to our lifestyle and poor lifestyle is a risk factor in developing high blood
pressure. All are well known causes of premature death and disability and yet the most recent figures suggest that in Suffolk 18.5% of adults still smoke, 67% of men and 57% of women are overweight or obese, 27% of residents are physically inactive with many more not taking enough exercise and almost 20% of adults have alcohol drinking patterns which may be harmful.

The evidence base for prevention interventions is growing. In 2012 NICE analysed 200 public health interventions (NICE 2013) ranging from smoking cessation to exercise on prescription. Their effectiveness was compared against a control. Thirty were found to be cost-saving, 141 were deemed good value for money (costing less than £20,000 per QALY); 7 fell into the £20,000 to £30,000 per QALY range. The remaining 22 were deemed not to provide value for money or to actually cost more than they saved.

Overall, NICE found the most cost effective interventions were those aimed at a whole population, such as mass-media campaigns to promote healthy eating or legislation to reduce young people’s access to cigarettes. Many of the interventions targeted at disadvantaged groups still met the value for money criteria but were less cost-effective, however these type of interventions are important in helping us achieve our aim to decrease health inequalities.

Many wider actions have a proven impact on health including those related to the strength of our communities, housing and being in work. The Kings’ fund have looked at many of these wider determinants and Table 25 shows those with the highest impact on health. However for most of these factors intervention only improves health in the longer term and will not influence the demand for health and care services within the next 10 years. Of the three with quicker impact on health, interventions promoting active safe travel are included in this section as they will have an impact on the areas identified in the first section of this report.
Table 25: Direct impacts of actions on health outcomes

<table>
<thead>
<tr>
<th>Area</th>
<th>Scale of problem in relation to public health</th>
<th>Strength of evidence of actions</th>
<th>Impact on health</th>
<th>Speed of impact on health</th>
<th>Contribution to reducing inequalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs and work</td>
<td>Highest</td>
<td>Highest</td>
<td>Highest</td>
<td>Quicker</td>
<td>Highest</td>
</tr>
<tr>
<td>Public protection</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Quicker</td>
<td>High</td>
</tr>
<tr>
<td>Active and safe travel</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Quicker</td>
<td>Lower</td>
</tr>
<tr>
<td>Warmer and safer homes</td>
<td>Highest</td>
<td>Highest</td>
<td>High</td>
<td>Longer</td>
<td>High</td>
</tr>
<tr>
<td>Strong communities, wellbeing and resilience</td>
<td>Highest</td>
<td>High</td>
<td>Highest</td>
<td>Longer</td>
<td>High</td>
</tr>
<tr>
<td>Healthy schools and pupils</td>
<td>Highest</td>
<td>Highest</td>
<td>Highest</td>
<td>Longer</td>
<td>Highest</td>
</tr>
<tr>
<td>Access to green spaces and leisure services</td>
<td>High</td>
<td>Highest</td>
<td>High</td>
<td>Longer</td>
<td>Highest</td>
</tr>
<tr>
<td>Best start in life</td>
<td>Highest</td>
<td>Highest</td>
<td>Highest</td>
<td>Longest</td>
<td>Highest</td>
</tr>
<tr>
<td>Health and spatial planning</td>
<td>Highest</td>
<td>High</td>
<td>Highest</td>
<td>Longest</td>
<td>Highest</td>
</tr>
</tbody>
</table>

Source: Buck and Gregory (2013)

We will also explore other interventions that have been identified as modifiable underlying causes for local demand such as flu vaccination, social isolation and loneliness and support to carers.
Smoking

Measures and epidemiology
Smoking remains Suffolk’s number one cause of premature death, though its prevalence has started to fall; in 2013 one in five (18.5%) of Suffolk population smoked. Smoking accounts for about half of the difference in life expectancy seen between our lowest and highest income groups. Men in the 20% most deprived areas are more than twice as likely to smoke (32.9%) compared with men in the least deprived areas (14.3%). Smoking rates amongst women are show a similar pattern (26.1% to 10.2%).
Smoking is a key cause of health inequalities making up for half the difference in premature deaths between the richest and poorest within the UK. Smoking rates vary across economic groups as shown in the figures below. Adult routine and manual workers are twice more likely to smoke than average. Young people who work in routine occupations are 5 times more likely to smoke than their peers. Similarly women who smoke throughout pregnancy are more likely to come from the less affluent parts of our communities. Smoking is also higher among people with mental health problems, minority ethnic groups and the LGBT population (Action on smoking and health (ASH) 2015).
The cost of tobacco represents a higher proportion of household income amongst poorer smokers, meaning that their tobacco use not only damages their health but also contributes to poverty, including child poverty. This is additional to the impact that second hand smoke has on the health of children in a smoking household. Children whose parents smoke are much more likely to grow up to smoke themselves and so, in our poorest communities, there has been an inter-generational cycle of smoking, deprivation and increased child poverty (Tobacco Advisory Group 2000).

Smoking prevalence varies across Suffolk. Most districts and boroughs have rates similar to the England average but Babergh District has a significantly lower rate of 9.8% and Waveney District has a significantly higher rate of 30%. In every district and borough there will be deprived communities that have a high proportion of smokers.
Current action

For over a decade, Suffolk has commissioned stop smoking service based on the NHS four week quit model. Historically Suffolk met national targets for numbers of individuals successfully quitting through the service and it met its target consistently. Recently the service has been less successful in helping people stop smoking, which is a picture seen across England. Figure 26 shows this decreasing performance which is thought to be due to a combination of the effect of people moving to e-cigarettes as a way of decreasing tobacco use, that those who are still smoking have often used services previously and not succeeded and also the changes in the NHS which mean that primary care is less focused on identifying smokers and supporting them to quit.

Figure 26: Three year comparison of smoking quits taken at quarter 3, Ipswich and East CCG and West Suffolk CCG

<table>
<thead>
<tr>
<th>Year</th>
<th>Total 4 week quits</th>
<th>Quits from BAME groups</th>
<th>Pregnant Women Quits</th>
<th>Routine and Manual Workers Quits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>3069</td>
<td>164</td>
<td>71</td>
<td>794</td>
</tr>
<tr>
<td>2013-14</td>
<td>2370</td>
<td>132</td>
<td>58</td>
<td>646</td>
</tr>
<tr>
<td>2014-15</td>
<td>1701</td>
<td>175</td>
<td>34</td>
<td>492</td>
</tr>
</tbody>
</table>

Source: Suffolk County Council (2015)
However the service has improved their targeting of certain at risk groups and the charts below show that there has been an increase in the proportion of those who successfully quit through local stop smoking services from routine and manual workers and those who qualify for free prescriptions.

Figure 27: Percentage of Suffolk clients who quit smoking from routine and manual occupation groups compared to total quits in 2009/10

Source: Suffolk County Council (2015)
What else to do?

Although the prevalence of smoking is now decreasing after a period of stagnation, the services commissioned to support smokers to quit are less successful. This suggests that they may no longer be a cost effective way of supporting individuals to stop smoking. A wide range of personal, social and environmental factors influence who starts smoking, who continues to smoke and who gives up. The changing social landscape around smoking, particularly e-cigarettes and smoke free public places, means other
approaches need to be tried, many of which need a multiagency approach. The Suffolk Health and Wellbeing Board have recognised this and agreed to support the objective of “working towards a tobacco free Suffolk” with three themes:

- **Prevention** - creating an environment where people choose not to smoke
- **Protection** – protecting people from second-hand smoke and supporting tobacco control interventions
- **Cessation** – supporting and enabling people to stop smoking

The plans to reduce smoking in Suffolk have been assessed against the new NICE guidance (NICE 2013a), and an action plan is almost complete. The tobacco free alliance will oversee the implementation of the plans which range from reducing smoking prevalence of smokers aged 11 to 17, improving the awareness of the risks of second hand smoke in the home and car. As well as ensuring that front line staff across the public sector are trained to deliver health lifestyle messaging, including advice on stopping smoking. Reducing availability of cigarettes is also an important measure including work in collaboration with HMRC and Trading Standards to reduce the availability of illicit cigarettes which come into Suffolk through the port of Felixstowe.

It is important that whilst we reshape the way we try to reduce tobacco consumption we do not lose the focus on health inequalities and ensure that our efforts are targeted at those with greatest need.

**What not to do?**

The WHO Framework Convention on Tobacco Control highlights the importance of protecting policy making and commissioning decisions from the influence of the tobacco industry. This will preclude their funding or support for any tobacco prevention programmes.

Currently there is no evidence to support the effectiveness of hypnotherapy as an intervention to stop smoking.
Potential impact

Stopping smoking has proven short and medium term benefits which include:

1 year after quitting: Circulation improves and lung function increases within three months of stopping smoking. Half the risk of coronary heart disease compared with a person who continues smoking.

5 years after quitting: Half the risk of cancer of the mouth, throat, oesophagus, and bladder. Cervical cancer risk falls to that of a non-smoker. Stroke risk can fall to that of a non-smoker after 2-5 years.

10 years after quitting: Half the risk of dying from lung cancer than that of a person who is still smoking. The risk of cancer of the larynx (voice box) and pancreas decreases.

Within 1 to 5 years we will see:

- Sustained reduction in smoking prevalence
- Greater numbers of clients from disadvantaged groups i.e. most deprived communities, BAME groups, LTC, routine and manual workers attending stop smoking services and successfully quitting
- Reductions in smoking at time of delivery
- Reduction in smoking prevalence among young people

Using the NICE return on investment tool we can see that the stop smoking quit based service taken in isolation will give a return of 1:1.1 at 2 years and 1:1.24 at 5 years. However this includes the financial benefits of welling to the individual. Savings to the public purse do not deliver until 10 years when the return on investment is 1:1.2. However there are many more savings associated with the wider actions to decrease smoking prevalence. For example the first year after the smoke free legislation saw 1,200 fewer emergency admissions for heart attacks across England (Sims et al 2010) equating to a saving of £10.5 million (NICE 2010). This was
a significant but small reduction of 3%, which may be an underestimate as it was lower than the 8% found in New York, 13% in Italy and 17% reduction found in Scotland after they introduced similar legislation (Sims et al 2010).

**Healthy weight**

**Measures and epidemiology**

Being obese or overweight is becoming the social norm and individuals often do not recognise that they or other members of their family (including children) are overweight. Excess weight (being overweight or obese) is associated with increases in the risk of cardiovascular disease, diabetes and some cancers (PHE 2014). The picture in Suffolk is similar to the national picture where excess weight affects 2 out of 3 of us (65.3% of Suffolk residents and 63.8% of those in England (PHE 2015). In Suffolk 21.8% of adults (approximately 131,100) are obese and 43.5% (261,500) are overweight (Sport England 2015).

Morbid obesity (BMI >40 kg.m\(^{-2}\)) is of even greater risk to health and levels are continuing to increase, particularly in women. In England morbid obesity has increased between 1992 and 2013 from 0.2% to 1.6% in men and 1.4% to 3.9% in women (Moody 20147). Obesity is also increasing in pregnancy with 5% of women with a known BMI ≥ 35, and 2% of women with a known BMI ≥ 40 (Centre for Maternal and Child Enquiries (CMACE) 2010).

**Current action**

A whole system approach is needed to tackle obesity. Healthy diet and appropriate calorie intake is essential and much of this requires a national approach as the large food producers and supermarkets have a huge influence on the nations diet. Locally we ensure our campaigns mirror national ones to maximise their impact and recent areas of focus include excessive sugar in the diet and ensuring you eat 5 fruit and vegetables a day. One in 4 Suffolk jobs are within the public sector, which, through the Health and Wellbeing Board, has supported the introduction of evidence based workplace health initiatives which gives the opportunity to promote healthy eating.
Where adults are overweight there are a variety of services available to help them reduce their weight. There are private companies offering support and the County Council commissions and adult weight management service offering a “tier 1” service which includes a cook and eat programme for those in the population who are in higher risk groups. The short course provides information about healthy eating and offers an opportunity to prepare healthy meals. Ten courses were provided by Livewell Suffolk in 2014/15, in the Ipswich and East CCG and West Suffolk CCG areas. Equivalent courses will be offered by Joy of Food in Waveney in 2015/16.

The “tier 2” weight management service offers a multi-component weight loss programme to adults who are obese (BMI ≥ 30 kg.m⁻² or with a BMI ≥ 28 kg.m⁻² for those from BAME groups (NICE 2013b)). The adult weight management service is a targeted service to support those in the 20% most deprived communities or who come from an identified groups who are known to have a higher risk for the complications caused by having excess weight. At risk groups include individuals with Long Term Conditions; carers; those from a BAME group and those with mental health condition or learning disability.

The adult weight management tier 2 service offers a 12 week intervention which is evidence based and includes the fundamental elements of behaviour change, nutrition and physical activity. Of the 505 adults in Suffolk who accessed weight loss services during the period 2013/14, 69% were females and 31% males (Ipswich and East CCG and West Suffolk CCG figures only as there was no weight management service in Waveney during this period). Equivalent services will be provided by Livewell Suffolk in Waveney in 2015/16. Slimming World on Referral is now being offered across the county in 2015/16 and this service will be evaluated.

The programme aims to achieve initial weight loss of 5% (NICE 2014) which is considered best practice. 26% of those who completed the weight management programme in Suffolk in 2013/14 achieved this level of weight loss and this represented an
average weight loss for all clients completing the programme of 2.8kg. Weight loss is also monitored at 3, 6 and 12 months after completing the course.

There is currently work taking place to introduce a more comprehensive weight management services from April 2016, with the introduction of the new integrated healthy lifestyle service. Although the service will still be targeted towards those at greatest risk, it will be equitable across the whole of Suffolk and offer services to those in certain groups who are overweight as well as obese.

**What else to do?**

We only have information about the publicly funded service, but the trend of increasing excess weight is continuing and so we are not reaching enough people. New approaches need to be considered in order to engage with a greater proportion of those needing to reduce their weight. There is also underrepresentation of men in those accessing weight loss services and this needs to be addressed (Roberston et al (2014). Furthermore, less men recognise if they are overweight or obese in comparison with women (Johnson et al 2014).

Recent NICE guidance has seen the introduction of specific advice relating to weight maintenance and prevention of weight regain subsequent to weight loss (NICE 2015). Currently a programme is being piloted that uses a calorie monitoring app/website (Nutracheck) to support continued weight loss and maintenance (Swift et al 2014). There needs to be continued integration and support into physical activity services and partner organisations as this is an important element for weight maintenance (Swift et al 2014). We could increase the use of new technologies to encourage self-management such as wearable technology and ‘apps’, but these approaches would need to be evaluated. Although there is local work to improve diet and have appropriate calorie intake more could be done. For example all public sector restaurants and cafés could provide information on the calories in each portion of food sold and joint work with the private sector could work towards this in all restaurants across Suffolk to enable people to make an informed choice on what they decide to eat.
A fully integrated weight management pathway would result in significant cost savings; average short term costs for weight loss surgery are approximately £6000, and estimated figures indicate that there is a potential cohort of 0.53% of the adult population who may be eligible or wish to take up weight loss surgery (equivalent to 3112 adults in Suffolk) (NHS Commissioning Board 2013). Tier 3 weight management services are currently provided on an individual basis from Addenbrookes hospital, although current CCG data are unavailable for cost and activity data for this service. However, in order for a full weight management pathway to be available to those in most need a tier 3 service integrated into the current tier 1 and 2 services is required. Different models of tier 3 services are available: a multi-disciplinary tier 3 weight management service based in primary care (Fakenham, Norfolk model) cost £900-£1250 (Jennings et al 2014); the Rotherham Institute for Obesity integrated tier 2 and tier 3 weight management service equated to a cost of £454 per success in 2010, which is the service the Fakenham model was based on, a previous GP led tier 3 service in Suffolk cost £770 per person. The average cost of tier 2 lifestyle weight managements programmes lasting for 12 weeks range between £76 and £112 per person (Jolly et al 2011); the economic model put forward by NICE estimated that a 12-week multi-component weight management programme costing £100 or less will be cost-effective for adults who are overweight or obese (NICE 2014).

**What not to do?**

Physical activity has many important benefits, including maintenance of healthy weight but it cannot be considered the solution to the obesity epidemic (Lee et al 2010). Effective nutrition and lower calorie consumption is essential for weight loss. In reducing obesity a focus should be on the key drivers related to increased energy expenditure (Swinburn et al 2007). It is unlikely that sufficient increases in physical activity are achievable in order to negate the effects of increased energy intake (Blair et al 2004).

**Potential impact**

Table 26 shows the saving we could make to health care costs which have been calculated by applying the PHE Weight Management Economic Assessment Tool to our local population. After 10 years the health care costs saved exceed the costs of
funding an evidence based weight management programme for people who are obese and it is more cost effective for individuals who are overweight which is why the new weight management service will provide services to this group. The figures also highlights how much we would save if a whole systems approach significantly reduced the 131,100 obese and 261,500 and that savings to the health service start accruing from year one.

Table 26: Potential saving to health care cost for weight management programmes

<table>
<thead>
<tr>
<th>Obesity cost savings</th>
<th>Number of clients</th>
<th>Cost of each intervention</th>
<th>Cumulative savings in health care costs with no discounting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>Men</td>
<td>1500</td>
<td>£100</td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Assumptions about clients: mean age 50, mean starting BMI 37, BMI reduction of 2, time taken to reduce weight 6 months, 25% drop out rate, duration of weight loss 25 years

<table>
<thead>
<tr>
<th>Overweight cost savings</th>
<th>Number of clients</th>
<th>Cost of each intervention</th>
<th>with no discounting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>Men</td>
<td>1500</td>
<td>£100</td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Assumptions about clients: mean age 50, mean starting BMI 29, BMI reduction of 1, time taken to reduce weight 3 months, 25% drop out rate, duration of weight loss 25 years

Source: PHE (2015a)
A successful whole system approach will see the proportion of adults with excess weight decrease in Suffolk. However early indicators of success would include an increase in the number of adults engaging with weight management services and an increase in the number of adults achieving 5% weight loss and maintaining weight loss for a minimum of 12 months.

**Physical activity including active travel**

**Measures and epidemiology**

Physical activity has an independent positive effect on health. It should not be confused with exercise or sport and should be part of everyday activity. Physical inactivity, particularly in youth, is known to be associated with increased cardiovascular risk factors, obesity and a tendency to metabolic syndrome which incorporates diabetes type II and hypertension (Kaur 2014, Landry et al 2012, Mountjoy et al 2011). There is scientific evidence for the effects of physical activity at a cellular and molecular level which can explain many of the above health benefits. Physical activity, either incorporated into daily life or in the form of specific programmes, can significantly improve quality of life by enhancing physical and cognitive function and reducing the risk of falls and accidents particularly in certain conditions like Parkinson’s or Multiple Sclerosis, and amongst at risk population such as the elderly or in Alzheimer’s disease (Chen et al 2014, Crizzle and Newhouse 2006, Dalgas et al 2008, Dibble et al 2009, Hernandez et al 2010 Kannus 1999, Klein et al 2014, Latimer-Cheung et al 2013, Motl 2014, Speelman et al 2014).

There is strong evidence for effectiveness of active travelling either by cycling, walking or combination of both on reducing the risk factors for heart disease and achieving health benefits of physical activity (Audrey et al 2014, Hendriksen et al 2000, Heron 2014 Laverty et al 2013). There have been concerns backed by some evidence that significantly higher risk of serious injury and mortality occurs amongst active travellers compared to those travelling by car. Although the risk is unacceptable, road safety
improvements have led to a noticeable decline in overall injury rates, and overall the evidence suggests health benefits of physical activity far outweigh the injury risks (Heron 2014).

With ageing there is a decline in the functional efficiency of the human immune system, and there is evidence that regular physical activity can delay this process by affecting both the structure and function of immune system components. The resulting improvements in the function of immune system is in turn associated with better vaccine response, lower vulnerability to infections, and a reduced incidence of and improved prognosis for cancers (de Araújo et al 2013, Bingle et al 2013, Simpson et al 2012, Walsh et al 2011).

Physical inactivity is estimated to cost the Suffolk health service in excess of £14 million each year (Sport England 2013) and is considered an important underlying cause of: 21–25% of breast and colon cancer; 27% of diabetes and 30% of ischaemic heart disease (WHO 2014).

In Suffolk, the percentage of physically active adults is 59.4% in comparison with 55.6% for the national average (PHE 2015). The definition of inactive as defined by the PHE Public Health Outcomes Framework is; “less than 30 equivalent minutes of at least moderate intensity Physical Activity (PA) per week in bouts of 10 minutes of more in the previous 28 days” and in Suffolk 26.8% of the population were identified as inactive and in England the figure was 28.9% (PHE 2015).

Some parts of Suffolk seem to be less active than others and low levels of regular physical activity (at least four 30 minute sessions of at least moderate intensity per week) adults have been found Ipswich (28.9%) and Waveney (28.6%) significantly lower rates than the national average of 35.5%.
Individuals with a limiting illness or disability are less likely to physically active with 20.7% of this group in Suffolk with a participating in organised sport and physical activity at least once a week, compared to 36.6% of people with no limiting illness or disability (Sport England 2013a).

**Current action**

The development of the Suffolk Walking strategy, Suffolk Cycling strategy, Suffolk Nature Strategy and Suffolk Disability and Physical Activity Strategy in the last two years, shows the commitment to physical activity and the need to promote and develop opportunities for participation in physical activity, exercise and sport for everyone in the community. A wide variety of short to medium term projects are being supported by public health, Most Activity County and other funding organisations including Sport England. In line with this Suffolk is seeking to promote PA through its current Year of Cycling to be followed by a Year of Walking with relevant activities, events and opportunities for the public to engage with these campaigns.

Two projects are increasing PA opportunities in rural communities, namely Fit Village and Active Hubs. Fit villages is a programme designed to help villages in rural locations to set up their own sport and physical activity programmes, using village facilities such as village halls, community centres or playing fields. The project is designed to be self-sustaining such that after initial support the activity programmes will be maintained and supported by the local community. Recently nine active hubs have been developed in small towns to increase participation in physical activity by older people, through building on people’s skills and interests to overcome barriers that often prevent older people from accessing physical activities. A variety of gardening projects, falls prevention Otago exercise projects and walking football is available, to encourage people to remain and get back to physical activity as they age.

Alongside the walking strategy the Beat the Streets project which took place in Lowestoft in June 2015, to engage the whole community to get active and record their walking activity through a series of Beatboxes (sensors) located around the town,
rewards related to distance walk are awarded to local schools and charities. Parkruns are now available in five locations in Suffolk, and there also several Great Run Locals offering more rural areas an opportunity to bring together runners of all abilities to take part in a weekly running event, both projects are supported by local volunteers.

The get healthy get into sport programme funded by Sport England is fully integrated in to the healthy lifestyle services offered by Livewell Suffolk. The programme has seen significant increases in people increasing and then maintaining their physical activity levels as they are supported into trying a wide range of sports and activities. This programme also offers support to those with long term conditions, to broaden the physical activity options and support and advice available to them, utilising the advantages of the natural environment available to benefit both physical and mental health and wellbeing and building on the natural assets of Suffolk [5,6,7]. The Being Well in the Wild “green care” project is seeking to broaden the opportunities to improve health and wellbeing by utilising the benefits of Suffolk’s natural assets, with some aspects of this project targeted at reducing health inequalities and improving mental health.

The doorstep sports club in Ipswich is designed to be inclusive and has been created with the aim of increasing and sustaining participation in sport and physical activity by young disabled people between the ages of 14 and 25 years.

There are also specific, targeted programmes commissioned for those at risk. An exercise referral programme in the Waveney district is targeted to those with long term conditions. During the period 2013/14 1281 adults participated in the exercise referral programme which includes circuit training, the I-Move freely exercise programme, seated exercise classes and Nordic walking. Of 221 referrals 75 medium to high risk adults completed the exercise referral programme. Other self-funded exercise on referral schemes are provided through leisure facilities within the local district and boroughs. The walking scheme in Waveney usually has 3-4 led walks each week; in 2013/14 211 walks took place and 1591 people participated. There is currently similar physical activity
provision for adults in the rest of the county other than the “health walks” offered through Livewell Suffolk; however the introduction of the new integrated healthy lifestyle service in 2016 will see an expansion of services offered.

What else to do?
Physical activity/exercise needs to be “rebranded”, in order that the population recognise the significant health benefits that can be achieved by making small changes to incorporate physical activity in their daily routines, and understand the importance of physical activity separate to obesity. In addition, it is necessary to build on opportunities, for example using Make Every Contact Count, to ensure the recommended guidelines for physical activity are understood and shared.

In addition to increasing physical activity, there is a significant opportunity to tackle sedentary behaviour, for example promoting opportunities within the workplace to promote avoiding extended periods of sitting.

The public health advisory committee recognised that the maximum benefit for those participating in exercise referral programmes would be for those considered to be sedentary or inactive but with an existing health condition, or other factors that put them at increased risk of ill health (NICE 2014a). Increased targeted support and activities available for those with the lowest levels of activity and significant clinical need is required, e.g. building on the success of phase 2 of the get healthy get into sport programme, which has included targeting those with diabetes; cancer and cardiovascular disease; opportunities for gym- and non-gym based exercise referral. Alongside this the referral process needs to be made as simple as possible for both the individual and health care professional who is referring into a programme or activity.

Programmes need to focus on long term behaviour change and therefore self-management opportunities and integrated pathways for maintaining physical activity as part of any sustained healthy lifestyle behaviour change are important (NICE 2015). E.g. the get healthy get into sport programme; beat the streets.
There may be opportunity to introduce PA by stealth opportunities where activities don’t feel like PA and health interventions and increased PA is merely a “side-effect” of the activity e.g. art-trails. This can also be incorporated within planning and design of both indoor and outdoor environments to promote PA and make the active choice the default option.

Improving access to high quality and appropriate PA services in the local community for those with disability and additional needs to increase PA participation. Further opportunities should be developed to bring together disabled and non-disabled people in order that they can participate in physical activity together, broadening the availability of inclusive activities.

**What not to do?**
Cardiorespiratory fitness is an independent driver for reduced mortality, however recent NICE guidance suggests that exercise referral schemes may initially be seen to be only marginally more effective than brief interventions. Therefore, further evaluation of these schemes is warranted due to the broad remit and variations between schemes (NICE 2014a). In particular, consideration should be given to gaining a better understanding of cost-effectiveness and for which cohorts the most significant health benefits will be achieved.

**Potential impact**
There is a direct dose-response relationship between the amount of physical activity and the associated health benefits; furthermore the most significant gains can be made by those who are least active and even a small change in physical activity can have considerable health benefits (PHE 2014a). Brief intervention advice for physical activity in primary care demonstrates how this is just one cost effective method to support increasing physical activity levels in the population (NICE 2013c).

Early indicators of success would include increases in participation levels in physical activity as identified by the Active People Survey; increase in referrals to the integrated healthy lifestyle service and increase in signposting/onward referral to partner organisations offering physical activity programmes. The NICE return on investment toll for physical activity for PA and the standard
evaluation framework for physical activity can be utilised to determine the effectiveness of new programmes (NICE 2014b, Roberts et al 2009). However, as with excess weight, a whole system approach will be required to improve levels of physical activity across Suffolk.

Table 27: Savings information, return on investment tool data

<table>
<thead>
<tr>
<th>Productivity gains</th>
<th>Health care cost savings</th>
<th>Social care cost savings</th>
<th>Transport benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>£2,735,096</td>
<td>£2,473</td>
<td>£12</td>
<td>£833,613</td>
</tr>
</tbody>
</table>

NICE (2014b)

The NICE ROI tool calculates that at 2 years potential savings are £3.6 million for a targeted programme for 3000 individuals a year at £300 per programme with 50% effectiveness. It can be seen that only 0.7% of the saving accrue to health and care. The majority are due to estimated increased productivity and transport cost savings. However these are likely to be overestimates for Suffolk: the average daily wage is set at the national average wage and Suffolk average wages are around 6% lower; transport savings are based on reduced km travelled by care which reduce congestion, accidents and improve air quality. This is likely to have a greater impact in urban areas than in rural areas.

The suggested cost benefit for society is estimated as 1: 8.84 at 2 years, increasing to 1:20.99 at 5 years and 1:38.6 for 10 years and beyond. This would suggest the interventions have big financial impact across the system, however for the reasons above they should be interpreted with caution.
Alcohol

Measures and epidemiology
The majority of adults in Suffolk consume alcohol, and many do so without experiencing adverse effects. However drinking excessive amounts of alcohol is now the 5th highest risk factor for premature death and disability. Although consumption in England has decreased 17% since 2004 (Snowdon 2015) alcohol related hospital admissions in Suffolk are continuing to increase, and although increases in Suffolk are lower than the England average, we have seen these increase 6.3% from 2010/11 to 2013/14. The negative effects of excessive alcohol consumption are likely to continue.

The decrease in alcohol consumption is likely to be due to a combination of factors including increasing cost due to the alcohol tax escalator (which has now been removed) and social marketing at a national and local level. As well as multiagency work between districts, health and the police to target geographical areas where the impact of alcohol on social disorder is highest. The increased availability of evidence based brief interventions used in health care and other settings, which decreases alcohol intake in those drinking excessive amounts but not addicted to alcohol is also likely to contribute. Rates of binge drinking have fallen particularly in 16-24 year olds and in 2013, over 40% of young people stated they do not drink alcohol (Office for National Statistics (ONS) 2013). Although there has been from the reduction in young people drinking there has been minimal change in the drinking habits of older adults.

It is estimated that approximately 15% of the Suffolk population over 18 drink above the advised limits and 3.8%, or 22,000 people in Suffolk, suffer from alcohol dependency which is defined as the presence of tolerance to alcohol, craving, withdrawal symptoms and neglect of alternative pleasures. The latter group are those who are in greatest need for specialist alcohol services (Suffolk County Council 2014).
The short term alcohol-related health harms mainly relate to injury – either self-injury through falls or injury to others through violence or drink driving accidents. Excessive drinking of alcohol appears to be increasing in older adults (Blow and Barry 2012) and falls in this group can result in hip fractures and other fractures.

Longer term effects of excess alcohol include alcoholic liver disease which can lead to other health problems such as stomach haemorrhage, clotting problems, and kidney failure. It is also an underlying factor for high blood pressure, strokes, heart disease and some cancers. It can also cause neuropsychiatric conditions such as Korsakoff’s Psychosis or Wernicke’s Encephalopathy. Alcohol use contributes to worklessness and impacts on the economy – in Suffolk a rate of 76.8 per 100,000 of benefit claimants were due to alcoholism (PHE 2014b), while it is estimated that lost productivity in the workplace costs 7.3 billion in England (Institute of Alcohol Studies (IAS) 2011). Alcohol is an underlying factor in many criminal offences including domestic violence and nationally criminal justice costs related to alcohol are estimated to be around 11 billion per annum (Alcohol Concern 2015).

**Current action**

Within Suffolk multiagency work aims to promote alcohol consumption in a safe manner. There are a variety of initiatives promoting this approach including an effective partnership between the police, trading standards, licensing committees and public health which oversees licensing applications.

The work in Ipswich on “Reducing the Strength” has been adopted by many other local authorities. The work has been cited as an example of local democratic leadership on public health in the Five Year Forward View (NHS England 2014), and has coverage by the BBC (BBC 2013, BBC 2013a), the labour manifesto (Labour 2015), and medical journals such as The Lancet (Egan et al 2014) and The BMJ (Brennan et al 2014). Multiagency initiative has led to voluntary agreements with convenience stores, supermarkets and other premises selling cheap “super strength” alcohol (beers, larger and cider over 7% ABV), and a concerted movement towards making every policing contact count ensuring education and supported rehabilitation was offered to street drinkers. The primary
The objective of decreasing crime and street drinking in Ipswich was achieved, although the effect of the initiative in decreasing the overall number of units of alcohol sold is not yet clear. Analysis of data has shown a decrease in units sold in Suffolk after the intervention in comparison to before. However, a comparative evaluation with Essex during the same time period, conducted by the London School of Hygiene and Tropical Medicine, found the decrease in units of alcohol sold in the participating COOP stores in Suffolk compared to those in Essex was not statistically significant and could have occurred by chance (School for Public Health Research (n.d.)).

The Purple Flag scheme in Suffolk bars has also been externally assessed and been suggested as a model of best practice (Association of Town and City Management (n.d.)). Local schemes have multiple foci: responsible drinking, preventing underage drinking, education of alcohol harms, training of responsible bar staff, promoting healthy lifestyles and creating safer town centres. Current projects in place in Ipswich include Pub Watch, Reducing the Strength, Purple flag, Best Bar None and Vulnerability Nights.

There is a wider partnership network with local alcohol voluntary organisations such as the Anglia Care Trust. Public health provides a supportive role in their work in reducing street drinking. A strong partnership has grown between The Portman Group, an alcohol lobbying group dedicated to promoting responsible alcohol standards (The Portman Group 2015).

Brief interventions are evidence-based sessions to address problematic drinking and usually delivered by non-alcohol specialists in a variety of settings. Training to deliver brief interventions is available from a number of sources within Suffolk (MVA Training Team, Livewell Suffolk, Turning Point – previously Suffolk Alcohol Treatment Service). However, it is not known the extent to which the training is used in reality outside of commissioned treatment provision.
Specialist treatment provision is available for individuals in Suffolk who require assistance to tackle their alcohol use. Turning Point provide community treatment including brief interventions and open access support. Structured treatment is available for individuals who wish to change their drinking behaviour and includes pharmacological support (in partnership with General Practitioners), such as community and inpatient detoxification and psychosocial support to identify and address the underlying issues. Support is also available within different settings such as the Criminal Justice System and within the county’s hospitals.

What else to do?
Public Health England have produced a Social Return on Investment (SROI) tool in relation to alcohol interventions. In relation to prevention, and factoring in potential to use locally, interventions identified include:

- An increase in health messaging – decreased the numbers of people who use alcohol by 0.13% (NICE, 2010a)
- 10% reduction in licencing hours/outlet density – decreased the numbers of people who use alcohol by 0.20% and 0.21% respectively (NICE, 2010a)
- School-based alcohol education initiatives – decreased the numbers of people who use alcohol by between 0.23-0.34% (NICE, 2007)
- Screening and brief interventions (with family support) – decreased the numbers of people who use alcohol by 4% (NICE, 2007)
- Screening and brief interventions (at A&E) – decreased the numbers of people who use alcohol by 1.44% (NICE, 2010a)
- Screening and brief interventions (GP appointments/registration) – decreased the numbers of people who use alcohol by 2% (NICE, 2010a)

Although integrated working partnership are sponsoring initiatives across the county these are often at a local level, and whilst this is appropriate lessons learnt are not always shared across Suffolk. Developing specific, measurable, objective, and timely outcomes for a targeted groups is not easy but many of the interventions are not evidence based and yet not evaluated. This is needed if we are to focus on the most cost effective interventions.
The majority of the social media campaigns concentrate on young people, and few target the middle class and middle-aged group who are at risk of drinking to excess.

There is minimal information about the brief interventions carried out in Suffolk, although the role out of the MECC programme should increase staff training in delivering alcohol brief interventions. There is an opportunity to roll this training out more widely in the public sector and voluntary sector. However, the extent to which brief interventions are carried out by multiple organisations would be difficult to measure.

**What not to do?**

Many of the multiagency interventions taking place in Suffolk are innovative and therefore do not have an evidence base. Aside from the inherent difficulties of measuring impact of prevention initiatives, it would be useful to evaluate interventions used in Suffolk to ensure that we can concentrate on those that work.

**Potential impact**

The NICE return on investment tool allows us to calculate the impact of possible interventions. The majority of the short term savings and benefits are more focused on society and the criminal justice system. Although there is a positive return on investment for health this is over a lifetime rather than within 5 years. The following examples demonstrate potential returns and benefits.
### Table 28: Interventions and benefits information

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Illness prevented over 5 years</th>
<th>Health care benefits</th>
<th>Wider societal benefits including individual health and wellbeing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol screening and brief intervention where required at next GP appointment</td>
<td>1.87 or 1034 individuals will reduce their drinking</td>
<td>ROI 1:2.4 over lifetime</td>
<td>ROI 1:199 over 5 years</td>
</tr>
<tr>
<td>30% of A&amp;E attenders with alcohol related issue receive screening and brief intervention when required</td>
<td>1.44% or 43 individuals will reduce their drinking</td>
<td>ROI 1:4.2 over lifetime</td>
<td>ROI 1:356 over 5 years</td>
</tr>
</tbody>
</table>

Source: NICE (2014c)

All interventions that decrease excessive alcohol intake will have a short term as well as a longer term effect. By implementing the Alcohol Strategy agreed by the Health and Wellbeing Board we can maximise local efforts to decrease alcohol related harm. We can monitor short term impact by:

- Monitoring Alcohol related crime
- Monitoring A&E attendance for falls or injury with alcohol as underlying factor (subject to coding clarification)
- Demonstrating a reduction in alcohol related admissions to hospital
- Reducing the number of young offenders reporting being under the influence of alcohol during offending
- Reduce number of drink-drive related casualties
- Reduce rate of suicides associated with alcohol use
In the longer term success will see the reversing of the increase in alcohol related liver disease although this is unlikely to impact within the next 10 years.

**Health checks**

**Measures and epidemiology**
The NHS Health Check Programme offers checks to people once every 5 years between the ages of 40 and 74. The programme aims to decrease heart disease, stroke, and diabetes and kidney disease and excludes those already identified with these or associated conditions. The check assesses an individual’s risk by having discussions about smoking, being overweight, lack of regular exercise, poor diet, high blood pressure and high cholesterol. Lifestyle advice is given and the individual’s risk is assessed after which, if necessary, lifestyle interventions and/or medical referral and treatment are given.

It is estimated that with full uptake across England the NHS Health Check programme could prevent 1,600 heart attacks and strokes and over 4,000 people a year from developing diabetes. It could also detect at least 20,000 cases of diabetes or kidney disease at an earlier stage leading to better management and improved quality of life (DH 2008).

**Current action**
In Suffolk invites are sent out to 20% of people in the correct age range. 90% of checks are offered through GP practices with the other 10% is offered through outreach. 59% of people offered a check in 2014/15 attended for a check which is higher than the average for England. This represented 27,674 checks, which was over 5,000 more than the number completed in 2013/14.

All GP practices are offer health checks to their patients, and the outreach service goes into the community to reach more deprived groups who are less likely to come to their GP for a check and who are at greater risk of developing cardiovascular disease and diabetes. 2845 NHS Health Checks were delivered through the outreach programme in 2014/15 and overall 19% of
health checks were completed in the 20% most deprived Middle Super Output Areas (MSOAs) compared to 17% in 2013/14. We aim to increase this to over 20% in order to help address health inequities.

**What else to do?**

The NHS health check programme is a specific programme and will only produce the predicted health improvement and cost savings if coverage is over 60%, and the check itself follows the national specification. We therefore need to continue to expand the coverage of the programme and also ensure the specification is followed. We lack information about the quality of the health care offered, and we have indications that the lifestyle advice element is not always followed through – for example there are lower levels of referral to the lifestyle service than we would anticipate. We are planning to audit the quality of the programme, and then support primary care and the outreach providers to make changes if these are required.

We also need to ensure that those at greatest risk have their health check. Cardiovascular disease and diabetes affects certain group in our population more than others. Cardiovascular disease as is the greatest contributor to the increased morbidity and mortality experienced by the most deprived populations who also are two-and-a-half times more likely than average to have Type 2 diabetes at any given age and 30% more likely to have high blood pressure. Ethnicity is also a powerful factor with Type 2 diabetes being up to six times more common in people of South Asian descent and up to three times more common among people of African and African-Caribbean origin (Diabetes UK 2012). Ensuring a high proportion of people from these communities within Suffolk have their NHS health check will potentially decrease health inequalities (PHE 2014c) but currently a lower than average proportion has the check. The increase from 17% screened from the most deprived 20% MSOAs in 2013/14 to 19% in 2014/15 was achieved through increased targeting by the outreach programme but we need to improve further.
What not to do?

The NHS health check programme is a specific programme and will only produce the predicted health improvement and cost savings if coverage is over 60%, and the check itself follows the national specification (as mentioned above). There is anecdotal evidence that on occasions the check is expanded to cover a range of other issues (for example questions about cervical and breast screening) which could dilute the message. The audit should identify any specific issues that need to be addressed.

Potential impact

Table 29: Estimated savings to the NHS budget in Suffolk from the NHS Health Checks programme

<table>
<thead>
<tr>
<th>Costs incurred</th>
<th>Savings</th>
<th>Net savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year after checks</td>
<td>£ 1,318,300</td>
<td>£ 215,270</td>
</tr>
<tr>
<td>5th year after checks</td>
<td>£ 2,733,769</td>
<td>£ 1,419,778</td>
</tr>
<tr>
<td>10th year after checks</td>
<td>£ 3,315,001</td>
<td>£ 2,940,260</td>
</tr>
<tr>
<td>15th year after checks</td>
<td>£ 4,025,231</td>
<td>£ 3,987,700</td>
</tr>
<tr>
<td>20th year after checks</td>
<td>£ 4,581,923</td>
<td>£ 4,761,801</td>
</tr>
</tbody>
</table>

Source: PHE (2014d)

Over the lifetime of the people who attend an NHS Health Check in the first year there will be a health gain at a cost of £1,976 per QALY. It is estimated that the programme, in addition to the health benefits delivered, will decrease demand and decrease cost in the health sector form year one. The table does not include the savings for the social care system from to the decrease in the number of people with long term conditions who need social care support. The programme will be cost saving system wide after 20 years (DH 2008) as the cost for the provision of the checks is borne by the Local Authority through the Public Health grant and the estimated savings are for the health sector.
Due to the impact the illnesses that the health check prevents have on health inequalities there is an opportunity to decrease health inequalities through targeting the checks to those most in need. However those at highest risk are less likely to attend for a check and so we must continue to monitor this and ensure that we do not inadvertently increase health inequalities.

The impact of the NHS Health Check Programme in Suffolk based on 60% uptake.

The evidence base allows us to monitor the programme through process measures and therefore we need to:

- Ensure 20% of selected population is invited and over 60% take up the offer of a health check
- Ensure at least 20% of check are on individuals from the 20% most deprived communities
- Ensure that those groups at higher risk of cardiovascular disease have the opportunity of having a check
- Audit the programme offered to quality assure the standard of the check and appropriate on ward referral
Figure 31: Health Check ready reckoner summary, Suffolk

Source: PHE (2014d)
Making Every Contact Count

Measures and epidemiology
MECC is a national programme which started in the NHS in 2012/13. Staff are trained to give consistent, evidence based, brief and informal lifestyle advice on an opportunistic bases and taking 3 to 5 minutes. The MECC approach is consistent with the evidence based approach recommended in NICE guidance (NICE 2014d) and focuses on smoking, physical activity, excess weight and excessive alcohol intake.

The MECC approach gives the opportunity to inform large numbers of individuals about lifestyle issues in a way that has been shown to be cost effective in improving health and reducing the risk of ill-health. It also ensures that staff give consistent messages and increases staff understanding of the impact that poor lifestyle has on their patients.

Current action
Training is available for staff through Livewell Suffolk an East Coast Community Health care as part of the Public Health commissioned service contracts. There is a 45 min e-learning module followed by 1 hour face to face training which tackles barriers to having difficult conversations with patients. A 20 min e-learning test completes the training and previously trained staff can update using e-learning only.

Table 30 below shows that in 2012/13 when it was implemented both training and subsequent referrals were higher than the subsequent three years. In the first year all health service contracts included the requirement to implement this programme in order to qualify for a quality payment. This requirement was removed after this first year and the number of staff trained and referrals have decreased each year. The system has agreed that embedding MECC within health care delivery is now a priority and Public Health will monitor training and referrals over the next year.
Table 30: MECC training uptake and subsequent referrals to lifestyle services

<table>
<thead>
<tr>
<th></th>
<th>2012/13</th>
<th></th>
<th>2013/14</th>
<th></th>
<th>2014/15</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of staff trained</td>
<td>Referrals</td>
<td>Number of staff trained</td>
<td>Referrals</td>
<td>Number of staff trained</td>
<td>Referrals**</td>
</tr>
<tr>
<td>Health staff</td>
<td>377*</td>
<td>3394</td>
<td>115</td>
<td>1976</td>
<td>134</td>
<td>1044</td>
</tr>
<tr>
<td>Others</td>
<td>169*</td>
<td>159</td>
<td>231</td>
<td>59</td>
<td>241</td>
<td>247</td>
</tr>
<tr>
<td>Self-referrals (How heard about LWS)</td>
<td>-</td>
<td>2569</td>
<td>-</td>
<td>2593</td>
<td>-</td>
<td>2276</td>
</tr>
<tr>
<td>Self-referrals (How heard about LWS – via health professional)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1078</td>
<td>-</td>
<td>765</td>
</tr>
<tr>
<td>IHT</td>
<td>217</td>
<td>1030</td>
<td>28 (incl. 21 TtT)</td>
<td>724 incl. midwifery</td>
<td>3</td>
<td>1008 (incl WSH)</td>
</tr>
<tr>
<td>SCH/SERCO*</td>
<td>38</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NSFT</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Primary Care</td>
<td>0</td>
<td>1019</td>
<td>33</td>
<td>593</td>
<td>134</td>
<td>193</td>
</tr>
<tr>
<td>WSH</td>
<td>31</td>
<td>1356</td>
<td>16</td>
<td>537 incl. midwifery</td>
<td>0</td>
<td>See IHT</td>
</tr>
<tr>
<td>Other HCPs</td>
<td>40</td>
<td>100</td>
<td>38</td>
<td>114</td>
<td>0</td>
<td>145</td>
</tr>
<tr>
<td>Total</td>
<td>339</td>
<td>3506</td>
<td>115</td>
<td>1976</td>
<td>147</td>
<td>1373</td>
</tr>
</tbody>
</table>

Source: Livewell Suffolk (2015)
*Includes some trained at HL 1 and not MECC as this did not come out until midway through the year in 2012/13
**Development of new database for referral reporting came in at Q2 so I have had to make a few assumptions whilst calculating this.
What else to do?
Although developed for the NHS the MECC programme can also be opportunistically used within other Public Sector services and the voluntary sector. Once embedded within the NHS the training will be offered to social care and the voluntary sector.

What not to do?
MECC is an evidence based model focusing on brief intervention. Whilst easy to deliver the approach staff take is important and the training is important as it informs staff how to approach lifestyle topics with patients on an opportunistic basis, how to give them information in a way that has been show to change behaviour and also when it is appropriate to refer patients on to more specialist lifestyle services. It is therefore important that staff are trained before delivering the programme if it is to be effective in changing behaviour.

Potential impact
MECC has been designed using NICE evidence and has considerable potential for changing staff behaviour in relation to promoting health.

• Works best when aligned to the organisations wider workforce strategies and not as “another project”
• There needs to be senior commitment and leadership

By applying national estimates if all NHS front line staff in Suffolk gave brief advice ten times a year which would take less than one hours’ time in that whole year, there would be almost 130,000 opportunities to change lifestyle behaviour (NHS Midlands and East 2012). If advice was given once a week this would increase to 640,000 each year. This does not include the impact of extending the programme to social care and the voluntary sector. Whilst not all these individuals would change their behaviour, brief intervention is one of the most cost effective interventions available.
This programme aims to improve lifestyle across the population focussing on stopping smoking and excessive alcohol intake, decreasing excess weight and increasing physical activity. However early indicators of success will be increased staff training and an increase in those attending the lifestyle service who have been referred by NHS staff or self-refer saying NHS staff suggested they refer themselves.

**Flu**

**Measures and epidemiology**
Flu vaccination reduces the risk of seasonal flu and decreases hospital admissions for influenza, respiratory conditions and exacerbations of other conditions. The national flu vaccination programme is targeted at the following adult groups in Suffolk.

- People aged 65 years and over
- People under 65 at (specified) clinical risk
- Pregnant women

The pattern of flu vaccination uptake has remained broadly consistent in recent years. For people aged 65y+, uptake is typically good at over 70% (range: 60-80%) but considerably lower among the under 65s and pregnant women for whom uptake is about 50% (30-60%). Both patterns mirror the national picture.

**Current action**
Flu vaccinations are offered to those in the groups above by their GP practice and some pharmacists on an annual basis. The vaccination programme starts in September and usually finishes in early January, although the majority are vaccinated by November.
Table 31: Flu vaccine uptake summary by CCG, 2014/15 season (ending 31/01/15)

<table>
<thead>
<tr>
<th>Organisation name</th>
<th>Summary of flu vaccine uptake %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>65 and over</td>
</tr>
<tr>
<td>NHS Ipswich And East Suffolk CCG</td>
<td>73.9</td>
</tr>
<tr>
<td>NHS West Suffolk CCG</td>
<td>72.4</td>
</tr>
<tr>
<td>NHS Gt Yarmouth And Waveney CCG *</td>
<td>71.5</td>
</tr>
<tr>
<td>Suffolk total</td>
<td>73.0</td>
</tr>
</tbody>
</table>

Source ImmForm (2015) *Average based on Great Yarmouth and Waveney population

Table 32: Flu vaccine uptake summary by CCG, 2013/14 season (ending 31/01/14)

<table>
<thead>
<tr>
<th>Organisation name</th>
<th>Summary of flu vaccine uptake %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>65 and over</td>
</tr>
<tr>
<td>NHS Ipswich And East Suffolk CCG</td>
<td>73.6</td>
</tr>
<tr>
<td>NHS West Suffolk CCG</td>
<td>72.2</td>
</tr>
<tr>
<td>NHS Gt Yarmouth And Waveney CCG *</td>
<td>72.6</td>
</tr>
<tr>
<td>Suffolk total</td>
<td>73.0</td>
</tr>
</tbody>
</table>

Source ImmForm (2015) *Average based on Great Yarmouth and Waveney population

Indices of poor health often have a positive correlation with indices of deprivation, and this is true for the relationship between hospital admissions for influenza and pneumonia and deprivation. The rate of admission for the population from the most deprived
quintile (24.5 per 1000) can be more than twice the rate from the least deprived quintile (10.1 per 1000). This strong positive association between admissions and deprivation may be related to higher prevalence of poor health, poorer access to primary care and preventive interventions and higher prevalence of lifestyle risk behaviour e.g. smoking in populations in deprived areas. It is therefore important that those in our deprived communities have at least equal access to flu vaccination.

What else should we consider doing?

Currently local implementation of the national flu programme does not appear to have been tailored to anticipate and address the variations in response from our range of communities. There has been a uniform approach to commissioning from primary care across the county which will not address inequalities. The most benefit would be achieved by improving uptake across all groups but in particular, targeting the following:

- **65y+**: Although this group has the highest uptake of flu vaccine (>70%), they account for the largest proportion of hospital admissions due to influenza. Local work needs to be done to understand and influence the <30% of people who do not take up flu vaccination.

- **<65y at risk**, particularly those with chronic respiratory conditions, stroke and long term neurological conditions. For this disparate group, flu vaccination reduces the risk of influenza and the associated exacerbation of their pre-existing clinical conditions (with or without hospital admission for the latter). Though a relatively small proportion of the population (as currently identified), they represent an avoidable demand on the system.

- **People who live in deprived parts of the county** (using GP practice location as a proxy). Suffolk 2014/5 data shows that the more deprived (higher IMD) an area, the smaller the proportion of patients vaccinated. 22% of the variation in influenza vaccine uptake by area can be explained in this way. This rises to 26% for pregnant women. Residents in these localities are at greater risk of poor health compared with the county as a whole. This suggests that targeting areas of deprivation could contribute to increased vaccination uptake and the protection our residents.
More local work is needed to analyse current uptake patterns and understand how they can be changed, and we need to enhance uptake by more effective targeting of groups. Currently vaccination is predominantly implemented by ‘push’ mechanisms – telling the public about the offer, and asking them to contact their GPs. This could be enhanced by developing a
range of complementary ‘pull’ factors, i.e. creating demand from within our communities e.g. patient/public-generated media. By listening and working alongside the public we can use local insight into what works for various communities to improve the model of local implementation of this national programme to achieve greater vaccination coverage.

Is there anything we should stop doing or that we know does not work?

Vaccination of the worried well
The NHS flu vaccination programme prioritises the dispensing of a limited supply of vaccine at considerable expense to those defined groups most at risk and/or most likely to benefit from the protective effect of the vaccine. This does not include the ‘worried well’. Whilst the general public may derive reassurance from vaccination, their risk and potential benefit is less than that of people in the defined groups. Concerned individuals who are not in the defined groups should make independent arrangements for their flu vaccination.

Poorly targeted vaccination of health and social care workers
Frontline health and social care workers have a duty of care to protect their patients and service users from infection. Vaccination of healthcare workers with direct patient contact against flu has been shown to significantly lower rates of flu-like illness, hospitalisation and mortality in the elderly in long-term healthcare settings (Carman et al 2000, Hayward et al 2006, Lemaitre et al 2009, Potter et al 1997).

The offer of vaccination by employers is an occupational health responsibility and not part of the nationally funded flu programme. This applies to social care providers and independent health care providers such as dental practices, optometry and GP practices. The national target for health care workers is 100% offer and 75% uptake rate.
Recognition of employees’ critical roles and the need for organisations to secure business continuity, and/or surge capacity in the event of an epidemic or pandemic is also a valid reason for flu vaccination. Additionally, there would be a benefit to the individuals, their immediate families and direct contacts. However none of these categories warrants inclusion in the nationally funded flu vaccination programme.

Poorly executed workplace vaccination programmes

Workplace vaccination programmes should be related to clearly defined objectives in terms of the organisational outcome being sought e.g. whether it is a business continuity measure or part of a workplace health/winter wellness programme. This will determine who is targeted and on what scale. Failure to target or scale correctly will result in benefits to individuals and their families but not to the employing organisation. A universal approach is unlikely to be cost-effective.

How can we show that we are making a difference?

The monitoring of uptake is the best measure of success, but this should include monitoring uptake in deprived and at risk groups.

Table 33: Flu Vaccination uptake by eligibility group, 2014/15

<table>
<thead>
<tr>
<th>Eligible group</th>
<th>2014/15 Suffolk uptake %</th>
<th>England target uptake %</th>
<th>2014/15 England uptake %</th>
<th>2014/15 England uptake range %</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 years or 65 years or older</td>
<td>71.8</td>
<td>75.0</td>
<td>72.6</td>
<td>69.2 – 76.5</td>
</tr>
<tr>
<td>Clinical risk groups aged 6 months to under 65 years</td>
<td>47.7</td>
<td>75.0</td>
<td>50.3</td>
<td>46.3 – 54.6</td>
</tr>
<tr>
<td>Frontline healthcare workers</td>
<td>42.9</td>
<td>75.0</td>
<td>44.1</td>
<td>39.6 – 50.6</td>
</tr>
</tbody>
</table>

Source: ImmForm (2015)
Pneumococcal vaccination

The Suffolk Picture

Pneumococcal disease, caused by the bacterium Streptococcus pneumoniae (also known as pneumococcus), results in either non-invasive (bacteraemia) or invasive infections. Invasive pneumococcal disease (IPD) includes septicaemia, pneumonia and meningitis. It is a major cause of disease and death in the UK and globally. It particularly affects the very young, the elderly, people with no spleen or a non-functioning spleen and people with other causes of impaired immunity and certain chronic medical conditions. The ageing immune system makes people more susceptible to infectious diseases but less responsive to vaccinations. This is reflected in levels of invasive pneumococcal disease (IPD) which rise in 50-64 year olds to become a major cause of ill health and death in people aged 65 years and above.

Pneumococcal infection is a vaccine preventable disease; this means that much of the burden of ill health and death is preventable. S. pneumoniae causes 29% of IPD but 55% of deaths (Ludwig et al 2012). It accounts for just 6% of pneumonia but 24% of case fatalities. In particular, it causes high mortality among immunocompromised patients in intensive care. More than 5,000 cases of IPD are diagnosed each year in England. The number of cases peaks in December and January.

Pneumonia is one of the conditions for which hospital admissions could be avoided by interventions in preventive and primary care (Purdy et al 2010). Influenza and pneumonia account for 13.4% of emergency admissions in the UK (2009/10), at a cost of £286 million per year.
The current national vaccination programme includes the year round offer of pneumococcal polysaccharide vaccine (PPV) to people aged 65y and over not previously vaccinated. Vaccine coverage in Suffolk is among the best in the country but is still below the WHO target of 75%.

Table 34: Pneumococcal (PPV) vaccination status for year ending 31st March 2015

<table>
<thead>
<tr>
<th>Organisation name</th>
<th>Aged 65 and over</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of GP</td>
<td>No. of Patients</td>
<td>Received the</td>
<td>Received the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>practices</td>
<td>registered on</td>
<td>pneumococcal</td>
<td>pneumococcal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>reporting</td>
<td>day of</td>
<td>vaccine</td>
<td>vaccine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>extraction</td>
<td>between 1st</td>
<td>anytime up</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>April 2014 and</td>
<td>until the 31st</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31st Mar 2015</td>
<td>March 2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No. of</td>
<td>No. of</td>
<td>% of</td>
<td>% of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>patients</td>
<td>patients</td>
<td>patients</td>
<td>patients</td>
</tr>
<tr>
<td>NHS Ipswich And East Suffolk CCG</td>
<td>97.6</td>
<td>80,857</td>
<td>4,032</td>
<td>58,564</td>
<td>72.4</td>
<td></td>
</tr>
<tr>
<td>NHS West Suffolk CCG</td>
<td>100.0</td>
<td>53,202</td>
<td>2,116</td>
<td>35,904</td>
<td>67.5</td>
<td></td>
</tr>
<tr>
<td>NHS Great Yarmouth And Waveney CCG</td>
<td>96.2</td>
<td>52,852</td>
<td>2,871</td>
<td>37,788</td>
<td>71.5</td>
<td></td>
</tr>
<tr>
<td>Suffolk</td>
<td>97.5</td>
<td>160,485</td>
<td>7,583</td>
<td>113,362</td>
<td>70.6</td>
<td></td>
</tr>
<tr>
<td>East Anglia</td>
<td>97.2</td>
<td>506,868</td>
<td>25,844</td>
<td>363,418</td>
<td>71.7</td>
<td></td>
</tr>
<tr>
<td>England</td>
<td>96.7</td>
<td>9,464,112</td>
<td>441,671</td>
<td>6,604,515</td>
<td>69.8</td>
<td></td>
</tr>
</tbody>
</table>

Source: PHE (2015b)
Table 35: Pneumococcal (PPV) vaccination status for year ending 31st March 2014

<table>
<thead>
<tr>
<th>Organisation name</th>
<th>% of GP practices reporting</th>
<th>No. of Patients registered on day of extraction</th>
<th>Received the pneumococcal vaccine between 1st April 2013 and 31st Mar 2014</th>
<th>Received the pneumococcal vaccine anytime up until the 31st March 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>No. of patients</td>
<td>% of patients</td>
</tr>
<tr>
<td>NHS Ipswich And East Suffolk CCG</td>
<td>90.5</td>
<td>73909</td>
<td>2843</td>
<td>3.8</td>
</tr>
<tr>
<td>NHS West Suffolk CCG</td>
<td>88.0</td>
<td>46737</td>
<td>1760</td>
<td>3.8</td>
</tr>
<tr>
<td>NHS Great Yarmouth And Waveney CCG</td>
<td>92.6</td>
<td>52123</td>
<td>1996</td>
<td>3.8</td>
</tr>
<tr>
<td>Suffolk</td>
<td>90.0</td>
<td>146707</td>
<td>5601</td>
<td>3.8</td>
</tr>
<tr>
<td>East Anglia</td>
<td>94.2</td>
<td>485,520</td>
<td>21318</td>
<td>4.4</td>
</tr>
<tr>
<td>England</td>
<td>92.9</td>
<td>8,989,225</td>
<td>355,771</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Source: PHE (2015b)

What are we doing about it?
This programme is delivered by primary care. Many 65 year olds do not receive it in the first year they become eligible but the vaccine is given opportunistically to those aged 65 and over.
What else to do?
Opportunities for increased coverage remain. Seasonal flu vaccine coverage has been greater than 73% in recent years suggesting that at least similar uptake could be achieved for PPV. Evidence from the shingles vaccine programme has demonstrated that it is feasible to successfully deliver an additional vaccine, targeted at a specific group, alongside the influenza programme.

There may be scope to combine the age-based vaccine strategy alongside the risk-based strategy as either alone may result in sub-optimal uptake, missing some of those targeted. Although the top independent risk factor is age 65 and over, other risk factors are underlying medical conditions such as chronic heart disease, lung disease including asthma, renal and liver disease as well as alcohol misuse, immunosuppression, socioeconomic status and living in a long term care facility.

What not to do?
There is some concern that the vaccination programme is not cost effective as it is currently delivered. The Department of Health has been advised but the programme remains unchanged. The impact of the vaccination programme on reducing hospital admissions has not been evident in surveillance data (DH 2011), due to the modest effectiveness of the vaccine and the fact that it has been used in risk groups for many year prior to the start of the over 65s vaccination programme. However as much of this cost is borne nationally, the best action for Suffolk is to continue to optimise vaccine coverage.

What can we achieve?
In healthy adults, pneumococcal polysaccharide vaccine (PPV) generates a good antibody response to a single dose within three weeks (Public Health England 2013). It protects against 96% of the pneumococcal isolates that cause serious infection in the UK. Vaccination may reduce IPD reduces hospital stays (admissions) (Christensen et al 2008), reduces the need for intensive care/high
dependency support and reduces mortality. The duration of protection is not known and post-immunisation antibody levels usually begin to wane after about five years.

**Potential impact?**
Whilst it is not possible to look at the impact of the PPV programme in reducing hospital admissions, the success of the programme can be shown but monitoring uptake of the vaccine.

**Loneliness and social isolation**

**Measures and epidemiology**
The recognition of the importance of loneliness and social isolation as a risk factor for health has been developing over the past two decades. However there is variability in quantitative studies of loneliness and later life in terms of the different populations studied, and which measures of loneliness are applied; which socio-demographic factors are enumerated; different response rates and sample sizes and the type of study design applied. A key element of the Government's vision for social care it to tackle loneliness and social isolation, supporting people to remain connected to their communities and to develop and maintain connections to their friends and family.

Social isolation is defined as ‘a state in which the individual lacks a sense of belonging socially, lacks engagement with others, has a minimal number of social contacts and they are deficient in fulfilling and quality relationships’ [Nickolson 2009]. In Suffolk it is estimated that there are 59,000 people aged 65 and over living alone (2014) which will increase to almost 78,000 by 2015. These individuals are at greater risk of social isolation and loneliness.
Intuitively loneliness and social isolation would be a factor contributing to older people reaching a tipping point and needing admission to hospital or external care and interventions to decrease loneliness have been shown to decrease hospital bed days, doctors’ visits and outpatient appointments (Pitkala et al 2009).

Evidence suggests therefore that interventions aimed to address loneliness and social isolation would be a useful to reduce demands on health and social care services. The literature shows that women are more likely than men to report loneliness. Older men are more likely to report feelings of loneliness after the loss of a partner and therefore demographic features for example, married or unmarried; health status all influence which interventions might be effective to assist people to recover from loneliness or enable people to become more socially connected in order to reduce social isolation (Víctor et al 2005).

A review of the literature about social isolation and loneliness and its impact on quality of life and wellbeing on older people was conducted by (Windle et al 2011). Being lonely has a significant and lasting effect on blood pressure, with lonely individuals reported to have higher blood pressure than less lonely individuals. Loneliness is also associated with depression, either as a cause or a consequence of loneliness. Loneliness was found to be associated with higher rates of mortality in a randomised control trial which measured the intervention of psychosocial group rehabilitation on older people conducted in Finland (Pitkala et al 2009). A longitudinal study involved an ONS survey of 999 people aged 65+ as part of an Economic and Social Research Council, (ESRC) Growing Older Research Programme. Víctor and Bowling (2012) found that self-reported experience of loneliness is stable over time. Víctor and Bowling reviewed 5 studies undertaken in Wales, Finland, and Sweden and found that loneliness is experienced by only a minority of 8-10% of older people and that this prevalence rate seemed fairly stable in a Northern European context.

However Dykstra (2009) examined sociodemographic correlates of loneliness such as age, gender and ethnicity. Hawkley et al (2006) indicated that loneliness is associated with negative physical and mental health. The evidence suggests that those
individuals with improved rates of loneliness included the protective effect of social activities, (which have been found to be associated with lower rates of deterioration in terms of health), moving from living alone to living with others. For example, getting married and increasing number of confidants/confiding relationships (Pitkala et al 2009, Victor et al 2009). Hawkley et al (2006) suggest that the impact of loneliness on health and social isolation is comparable to that of smoking and obesity. They suggested that “chronic loneliness” contributes to a suppressed immune system, high blood pressure and increased levels of the stress hormone cortisol.

A 2015 meta-analytic review by Holt-Lunstad et al (2015) set out to establish the overall and relative magnitude of social isolation and loneliness and to examine possible moderators. It established an increased likelihood of mortality associated with social isolation, loneliness and living alone. The study suggested that loneliness and isolation as a risk for mortality was comparable with well-established risk factors such as physical activity, obesity, substance abuse, responsible sexual behaviour, mental health, injury and violence, environmental quality, immunization, and access to health care.

Although reviews of the evidence provide variable evidence for the size of any effect or the impact this has on use of health and care services, the main findings on loneliness were that recovery is possible. Interventions aimed at social groups where people can widen their social circle incorporating self-help that covers bereavement, friendship, creative and social activities and health promotion were found to be effective at reducing social isolation and loneliness. However, the literature is not conclusive and the presence of pre-existing depression or other psychiatric morbidity may have been underestimated or overlooked, therefore further research would be required to determine whether loneliness is a cause or consequence of depression. There is a need for more longitudinal, randomised controlled trials that incorporate standardised quality-of-life and cost measures in order to improve the evidence base available.
The research evidence on loneliness and social isolation has certain limitations when considering the applicability to the Suffolk context. Firstly, studies mainly use cross-sectional survey designs, with few longitudinal studies of loneliness among older people. It is also necessary to consider how transferable projects are if research conducted in the US or other countries can be applied to the UK context. There is a need for more well-conducted studies of the effectiveness of social interventions to alleviate social isolation, it is also suggested that common characteristics of effective interventions were those offering social activities and/or support within a group format (Dickens 2011, Dickens et al 2011a).

Certain factors for example, level of education received has been found to be a protective factor in preventing loneliness. Studies have found that those who receive education up to and including tertiary level have lower reported levels of loneliness than those who were educated to primary school level (De jong1998, Dyskstra, 2009, Pinquet and Sorensen 2002).

By applying the review findings of Windle et al (2011) where 12% of older people report feeling lonely, in Suffolk this means that between 7,900 and 23,000 older people are likely to feel lonely and 19,000 feel socially isolated. As the population ages these numbers will increase. Older people are particularly vulnerable to social isolation or loneliness owing to loss of friends and family, mobility or income and women are more likely to report loneliness than men. However, published research focuses disproportionately on relatively healthy older people in the community (Greaves and Farbus 2006), who may be less likely to be near the “tipping point” of needing admission to hospital or intensive care packages, and therefore the short or medium term impact on decreasing demand is likely to be low. We know little about those who are frail and over 80 where the impact of any interventions could be shorter term. The limitation of current evidence is the wide variety of interventions making comparisons of relative efficacy of different interventions, problematic.
A measurement of social isolation is included in the Public Health Outcomes where the respondents to the Adult Social Care Users Survey who responded to the question ‘Thinking about how much contact you’ve had with people you like, which of the following statements best describes your social situation?’ with the answer ‘I have as much social contact I want with people I like’ (PHE 2015c). A total of 675 adult social care users in Suffolk responded to this question in the 2013-14 Survey - representing a 97.3% response rate. 42.2% responded ‘I have as much social contact as I want with people I like’; 37.3% reported they had ‘adequate social contact with people’; 15.8% reported having ‘some social contact with people but not enough’; and, 4.7% reported they have ‘little social contact with people and feel social isolated’ (HSCIC 2014). The percentage who had as much social contact as they would like is similar to the England and East of England average, which is 44.5% and 44.6% respectively (no significant difference).

**Current action**

There are many activities within Suffolk that aim to reduce loneliness and social isolation. Many of these activities are provided by the voluntary sector, however there is limited information on the models interventions are based on and whether the outcomes achieved specifically alleviate loneliness. The voluntary sector has recognised this as an issue and are working together to try and ensure they make the most of opportunities to improve health and wellbeing for those who are lonely and/or isolated.

Although the impact of loneliness and social isolation on health and care services may not be clear, there is substantial evidence that interventions can reduce loneliness and social isolation. Schemes that have been shown to alleviate feeling of loneliness include: community engagement programmes that support individuals to increase participation in activities and volunteer schemes; social group activities such as group exercise and discussion and certain befriending interventions. However interventions need to be flexible in delivery and suitably adapted to the needs of the community. Such interventions are provided across Suffolk by the voluntary sector.
Examples include the Suffolk rural coffee caravan and the good neighbour scheme which have sought to address the needs of older people in rural locations in Suffolk. ActivLives focus on people aged 45 plus living in areas of deprivation in Ipswich. ActivLives run a range of activities, some of which are funded by the local authority or NHS, to keep people active, independent and connected with their community. Each year over 2,000 people take advantage of group activities offering exercise sessions, lunch clubs, community events, health walks, Nordic walking, and community singing, gardening and environmental projects across the county.

Age UK Suffolk in their quarterly newsletter ‘Choices’ recently focussed on loneliness in older people in Suffolk and together with the East Anglian Times have launched a ‘Shine a light on Loneliness’ campaign in the county. Age UK Suffolk calculate that more than 15,000 older people don’t speak to a neighbour, friend or family member for over a month. Half of all people aged over 75 live alone, and 1 in 10 people aged over 65 say that they are always or often feel lonely. Age UK Suffolk commented that the amount of contacts someone has with others is not always indicative of loneliness. It is the quality of those interactions, how they make the person feel that matter, which is why people can still experience loneliness even if their lives appear full and busy (Age UK Suffolk 2015).

Additionally local area coordination is being implemented in the Connect Sudbury and East Ipswich Health and Social Care Integration Early Adopter Sites. Local area coordinators spend time getting to know people and understand what a good life means for them and then facilitate their connection into the local community. Connections are made or remade with family, neighbours, local interest groups, the voluntary sector etc.

In places where local area coordination has already been introduced people have reported feeling less isolated and lonely, not needing to visit their local GP so often and feeling more valued through new friendships and local groups of similar interest. Other
benefits which have been evidenced include people being less reliant on social care and mental health services, a reduction in housing related issues and an increase in volunteering. If successful, this is a model we would seek to roll-out across the county over the next few years.

What else to do?
A research briefing by the Social Care Institute for Excellence (SCIE) (Windle et al 2011) categorises the sorts of interventions used in reducing social isolation or loneliness as being:

- **One-to-one interventions**: these include befriending, mentoring, and gatekeeping (Community Navigator or Wayfinder initiatives).
- **Group Services**: include day centre-type services (such as lunch clubs), and social group schemes which aim to help people widen their social circles. The number and extent of services is broad.
- **Wider Community Engagement**: Wider community engagement includes programmes that support individuals to increase their participation in existing activities (e.g. sport, use of libraries and museums) as well as to use and join outreach programmes and volunteer schemes.

In order to understand what is being provided and the gaps, it would be useful to work with the voluntary sector to understand the interventions available and the outcomes they achieve. The voluntary sector has already identified this as work that they would like to do.

What not to do?
There is no conclusive evidence that computer and or internet use impacts on loneliness, physical or psychological outcomes (Findlay 2003). A twelve week ‘closed’ group that aimed to develop ‘self-efficacy’ found no change in loneliness (Kremers et al 2006). There is evidence to suggest that closed groups which include art and inspiring activities such as group exercise and discussion were effective with 95% of participants with a mean age of 80 feeling that their feelings of loneliness had been
alleviated during the intervention (Savikko et al 2010). The outcomes of one to one interventions such as mentoring, befriending and gatekeeping, (community navigator or ‘wayfinder’ schemes) appear to have assisted some become less lonely and socially isolated following such contact (Findlay 2003).

More research is needed to evaluate interventions targeted towards minority groups and rural populations and those of the most frail and excluded, for example refugees and those in care homes (Manthorpe et al 2009). What is known is that if providing BME specific group interventions they should be based on generational migration status and not just ethnicity.

Interventions have been evaluated show no impact, for example a 12 week “closed group” focusing each week on topics relating to friendship found no change in the self-rated loneliness of those completing the course (Savikko et al 2010). This shows the importance of designing appropriate evaluation frameworks across the range of diverse interventions and programmes, in order to improve the knowledge base as to which interventions are found to lead to a positive impact in reducing the experience of loneliness.

Potential impact

By ensuring interventions are evidence based and fully evaluated will assist in developing the evidence for how loneliness and social isolation can be decreased and wellbeing of individuals, improved. This is likely to have a long term positive impact on health. What is not clear is what level of impact these interventions will have on decreasing demand for health and social care in the short or medium term.

Knapp et al (2010) demonstrated the economic impact of befriending interventions and Community Navigators, compared with what might have happened in the absence of any such service. The likely care pathways of individuals were ‘modelled’ and the
costs and outcomes at each stage estimated. Along with the costs of ‘formal’ service provision, those unpaid ‘resources’ and ‘opportunity costs’ provided by family and/or informal carers were included.

It was estimated that for befriending schemes, a typical service would cost around £80 per older person within the first year and the reduced need for treatment and support would provide about £35 in ‘savings’. The authors also argued that such savings would be likely to continue in future years. The monetary value of the quality of life improvements were estimated at £300 per person per year, well exceeding the costs of the intervention. The economic benefits from Community Navigators were estimated at £300 per person with additional costs of a visit to a Citizen’s Advice Bureau or Job Centre Plus, bringing the total cost to £480 per person per year. They estimated that the economic benefits (e.g. fewer services used) would amount to approximately £900 in the first year.

Costs were also provided by Pitkala et al (2009) in their follow-up study of those individuals involved in the ‘closed’ activity groups. The total cost of health service use (hospital bed days, physician visits and outpatient appointments) was €1,522 per person per year in the intervention group, compared with €2,465 in the control group. This statistically significant difference between the groups of €943 was greater by €62 than the costs of the intervention.

Return on investment work suggests that befriending schemes can provide a return of up to £4 for £1 invested and community navigator schemes such as the one being piloted in Suffolk can produce an ROI of between 1:2 and 1:6.5. We need to work with the voluntary sector to identify the programmes offered and ensure they are evidence based or the outcomes are evaluated.
We can also use the adult social care users survey to monitor self-assessed loneliness. Although this only induces adults in contact with social care, which is a small proportion of the population, an increase in the proportion of those responding who say they have as much social contact as they would like. This would suggest support services were in place and working effectively.

**Support for carers**

**Measures and epidemiology**

Carers help and support the person or people they care for to remain independent and live the life they choose. The support they provide is varied and ranges from practical day to day care to love, friendship, connection and reassurance. We do not know the true numbers of carers in Suffolk as people caring do not necessarily identify themselves as a carer. However the 2011 identified more than 77,000 people providing unpaid care in Suffolk (ONS 2013a) with more than 12,000 people claiming Carers Allowance. Fig 33 shows that although more than half of all carers provide under 19 hours of care per week, more than a quarter of carers provide 50 hours or more of care per week.
Fig 33: Suffolk’s Carer Population Stratified by Hours of Unpaid Care per Week

Source: Suffolk County Council (2014a)

The largest proportion of carers are aged over 50, and there are more women who are carers than men. It is predicted that the number of carers will increase as the proportion of elderly in the population decrease and but 2030 it is predicted that there will be more that 31,000 unpaid carers in Suffolk.

Keeping carers fit and health is important if they are to continue their caring role. Many of the 17,000 proving 50 hours per week are likely to be delaying or preventing the “tipping point” occurring where the individual being cared for either needs hospital admission of an intensive care package. There is evidence to suggest that carers are more likely to have poorer health and emotional wellbeing compared to non-carers which shows the importance of supporting this group of individuals (Carers Trust 2015).
**Current action**

The local authority (adult care services) has developed a framework to help structure the list of services offered.

**Help to help yourself**

This is a universal service available to all carers and includes:

- Information line
- Carers centre
- Community development work
- Carer Advisors in Primary Care
- Home Based Carer Support, Carers Cabin, Louise Hamilton Centre
- Suffolk Wellbeing Centre
- Dementia Advisors Service, helpline, talking support, peer support and cafes

**Help when you need it**

This provides structured time-limited goal orientated interventions that help people return to or maintain independence:

- Suffolk careline emergency care plan service
- Respite on prescription
- Moving and handling tuition
- Admission prevention service – carer support
- iCare budget
- Break charity
- Caring for dementia with confidence and flexible dementia service
**Ongoing support for those who need it**

These services are aimed at carers with substantial and sustained needs:

- Carer break scheme for carers of people with neurological conditions
- Enhanced carers budget
- Respite for people with learning difficulties and their families

There are also a range of adjunctive services which are commissioned to enhance and improve efficacy of the three tier operating model, such as community inclusion and diversity, dementia care training programme and a substance misuse involvement officer. Carers are also a priority group who can access the fully integrated lifestyle service provided by Livewell Suffolk and ECCH. However currently there are seven different commissioning bodies that fund carers services in Suffolk, and it is considered that this has led to fragmented, unilateral decision making and inequalities in service provision across the county.

**What else to do?**

Work to co-design a system wide approach to supporting carers has already started. A gap analysis suggests that although Waveney have the highest proportion of carers delivering more than 50 hours of unpaid care per week, some of the services currently available in the East and West of the county are not available in Waveney. Ensuring equitable support should be one of the aims.

There are a variety of evidence based interventions that could be considered in Suffolk:

- There is evidence that hosted and linked Carer Support Workers (CSWs) in GP surgeries has a positive impact on practices identification of carers.
- There is evidence to suggests telecare and telehealth have the potential to reduce carer stress, promote independence of the cared for and help people sustain their caring role for longer.
Several studies report that access to breaks services leads to significant reductions in carer strain, psychological morbidity and have the potential to delay permanent admission into permanent residential care. This needs to be measured against conflicting evidence which suggest residential respite can expedite a permanent move to residential care.

Five NICE quality standards with specific quality statements relevant to carers have been identified, including: QS2 Stroke, QS1 Dementia, QS13 End of Life, QS11 Alcohol Dependency & Harmful Alcohol Use, QS3 Venous Thromboembolism Prevention. More work is needed to determine whether current operational practice is consistently meeting these quality statements.

The triangle of care offers six key quality standards for the treatment of carers of dementia patients receiving inpatient care. Although designed with dementia patients in mind, these six quality standards lend themselves well to, and can be applied in, other inpatient settings. More work is needed to establish whether these standards have been implemented across all of Suffolk’s acute trusts (Suffolk County Council 2014a).

**What not to do?**
The system needs to actively progress the system wide approach to commission services for carers to ensure they receive the support they require.

**Potential impact**
The Royal College of General Practitioners (RCGPs) estimate that for an average CCG population of 200,000 people, unpaid carers provide voluntary care worth in excess of £74.9 million. If we were to apply the RCGPs figures and model them to Suffolk’s population of 738,500 people, we estimate unpaid carers in Suffolk contribute voluntary care worth in excess of ~ £277 million.
Supporting Carers: a social impact evaluation’ - RCGP has worked with Baker Tilly to identify the social return on investment which can be made when CCGs invest in services which support carers. The study shows that this could equate to a saving of almost £4 for every £1 invested (Royal College of General Practitioners (RCGP) 2015).

The Adult Social Care Outcomes Framework, NHS Outcomes Framework and Public Health Outcomes Framework all include measures to assess the quality of life and support given to carers. These are:

- Carers can balance their caring roles and maintain their desired quality of life
- Proportion of people who use services and their carers, who reported that they had as much social contact as they would like
- Overall satisfaction of carers with social services.
- Improving people’s experience of integrated care
- The proportion of carers who report that they have been included or consulted in discussions about the person they care for
- Health related quality of life for carers
- Improving peoples experience of Integrated Care
- Percentage of adult carers who have as much social contact as they would like

Currently Suffolk is the same as, or below England values with particular areas of concern:

- 28.9% of people who use services and their carers, who reported that they had as much social contact as they would like, compared to an England value of 41.3%
- 36.5% have an overall satisfaction of carers with social services, compared to 42.7% of carers in England

We should continually monitor these outcomes and aim for year on year improvements.
6. Track listing - summing up

While it is not possible to prevent every episode of ill-health or social care need, a proportion of it can be prevented. Capturing the benefits of prevention requires action by everyone; individuals, to change their lifestyles and reduce their current and future risks; health and care professionals to identify and manage people with existing risks and diseases effectively; and health and care commissioners to prioritise risk reduction in the design and delivery of services.

Prevention includes risk factors for disease, early identification of disease, and self-care.

A summary table of modifiable factors, local actions and the estimated benefits to health and social care, or the wider public purse, is included below.

Table 36: Summary table for report

<table>
<thead>
<tr>
<th>Modifiable factors</th>
<th>Action we can take in Suffolk</th>
<th>Major illness prevented over 5 years</th>
<th>Net costs prevented over 5 years – health care (£m)</th>
<th>Net costs prevented over 5 years – social care (£m)</th>
<th>Return on Investment (ROI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension detection and management</td>
<td>Improve the number of people diagnosed with hypertension by 15%.</td>
<td>255 strokes, 171 heart attacks</td>
<td>4</td>
<td>3</td>
<td>1:2.4 at five years</td>
</tr>
<tr>
<td></td>
<td>Improve the care of those already diagnosed so that 15% more adults achieve good blood pressure control (equal to or lower than 150/90 mmHg).</td>
<td>58 strokes, 39 heart attacks</td>
<td>1.1</td>
<td>0.7</td>
<td>1:3 at five years</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>Improve the number of people</td>
<td>267 strokes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modifiable factors</td>
<td>Action we can take in Suffolk</td>
<td>Major illness prevented over 5 years</td>
<td>Net costs prevented over 5 years – health care (£m)</td>
<td>Net costs prevented over 5 years – social care (£m)</td>
<td>Return on Investment (ROI)</td>
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<tr>
<td>detection and management</td>
<td>diagnosed to the highest level already being achieved by similar CCGs</td>
<td></td>
<td>0.8</td>
<td>3.3</td>
<td>1:1.6 at five years</td>
</tr>
<tr>
<td></td>
<td>Improve the care of those already diagnosed so that all people clinically suitable for anti-coagulation are treated optimally.</td>
<td></td>
<td></td>
<td>180 strokes</td>
<td>0.6</td>
</tr>
<tr>
<td>Smoking reduction</td>
<td>Implement the wider actions agreed by the Health and Wellbeing Board which focus on preventions, protection and support for smoking cessation.</td>
<td></td>
<td></td>
<td></td>
<td>Specific cost savings not identified</td>
</tr>
<tr>
<td></td>
<td>Risk of cancer of the mouth, throat, oesophagus and bladder is halved. Risk of cervical cancer falls to that of a non-smoker. Risk of stroke falls to that of a non-smoker.</td>
<td></td>
<td></td>
<td></td>
<td>The stop smoking quit based service taken in isolation will give a return of 1:1.1 at 2 years and 1:1.24 at 5 years. However this includes the financial benefits of well-being to the individual. Savings to the public purse do not deliver until 10 years when the return on investment is 1:1.2. The return on investment for other areas is not known but likely to be higher.</td>
</tr>
<tr>
<td>Weight management</td>
<td>Increase scale of intervention - support 6,000 people with weight loss programmes (per year) ROI seems low but interventions do not result in large weight loss (i.e. 3%).</td>
<td>Reduce the significant contribution of excess weight to diabetes, heart disease and some cancers.</td>
<td>Cost savings do not materialise until year 10.</td>
<td>Specific cost savings not identified</td>
<td>At 10 years 1:1 At 25 years 1:1.9 for obese and 1:2.8 for overweight.</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Increase the proportion of those physically active in the population by offering programme for 3000 most at risk per year. This calculation</td>
<td>Reduce the significant contribution of physical inactivity to cancer, heart disease and diabetes.</td>
<td>Impact across society is evident at 2 years (£3.6million) however only 0.7% of these savings accrue directly</td>
<td>Specific cost savings not identified</td>
<td>The NICE ROI tool at 2 years suggests returns of 1:8.84 for cost savings, and 1:18.5 for benefits including personal</td>
</tr>
<tr>
<td>Modifiable factors</td>
<td>Action we can take in Suffolk</td>
<td>Major illness prevented over 5 years</td>
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<td>Net costs prevented over 5 years – social care (£m)</td>
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<tr>
<td>Alcohol reduction</td>
<td>10% of the population to receive alcohol screening (and brief intervention where required) at next GP appointment.</td>
<td>Reduce the number of people who use alcohol by 1034 individuals will reduce their drinking as a result of intervention.</td>
<td>For care costs on these interventions ROI of 1:2.36 (over lifetime) Healthcare cost savings only.</td>
<td>Specific cost savings not identified</td>
<td>Wellbeing. However returns for health and social care are minimal in comparison to productivity and transport savings. Transport calculations may be based on an urban area.</td>
</tr>
<tr>
<td>Loneliness and Social isolation</td>
<td>Reduce the estimated 23,000 older people who feel lonely, and 19,000 older people who feel isolated in Suffolk.</td>
<td>Loneliness has an impact estimated to be equivalent to smoking and obesity.</td>
<td>Specific cost savings not identified.</td>
<td>Specific cost savings not identified.</td>
<td>Befriending schemes estimated to have a ROI of 1:4; Community Navigator Schemes have an ROI of 1:2</td>
</tr>
<tr>
<td>Being a carer / requiring support from a carer</td>
<td>Support the estimated 77,000 people in Suffolk who provide unpaid care, worth £277m each year.</td>
<td>Carers are likely to have poorer health and wellbeing than non-carers.</td>
<td>Specific cost savings not identified.</td>
<td>Specific cost savings not identified.</td>
<td>Social impact assessment suggests ROI of 1:4 with benefits to health and social care.</td>
</tr>
<tr>
<td>NHS health checks</td>
<td>Increase coverage to over 60% (currently 59%) and complete over 20% of the health checks in the most deprived areas of the county.</td>
<td>The estimated savings to the NHS budget nationally are around £57 million over four years, rising to £176 million over a fifteen-year period. However costs to SCC are ~£3.6 million over four years.</td>
<td>Increases opportunity to realise all the above.</td>
<td>Health gain at £1,976 per quality adjusted life year (QALY).</td>
<td></td>
</tr>
<tr>
<td>Modifiable factors</td>
<td>Action we can take in Suffolk</td>
<td>Major illness prevented over 5 years</td>
<td>Net costs prevented over 5 years – health care (£m)</td>
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</tr>
<tr>
<td>Make Every Contact Count</td>
<td>MECC is an opportunity for interactions between health and care staff and those from other organisations to increase referral to HLS and deliver brief interventions.</td>
<td>Increases opportunity to realise all the above. 650,000 opportunities to change lifestyle behaviour over 5 years.</td>
<td>Increases opportunity to realise all of the above.</td>
<td>Increases opportunity to realise all of the above.</td>
<td>Increases opportunity to realise all of the above.</td>
</tr>
<tr>
<td>Acute respiratory conditions prevention and management</td>
<td>Ensure vaccine coverage of vaccines is as high as possible. Improve the number of people diagnosed to the highest level already being achieved by a similar CCG (suggests that an additional 1,312 diagnoses could be made in Suffolk). Ensure that COPD diagnoses are accurate and confirmed with spirometry; and that resulting prescribing is optimal.</td>
<td>Prevent a quarter of current hospital admissions for exacerbation of COPD in patients who do not have a previous diagnosis of COPD.</td>
<td>0.3 from reduction in late stage admissions in previously undiagnosed people.</td>
<td>Specific cost savings not identified.</td>
<td>Not possible to estimate at present, but likely to realise significant savings across health and social care.</td>
</tr>
<tr>
<td>Diabetes prevention and management</td>
<td>Reduce the number of people diagnosed with Type 2 diabetes in Suffolk each year by 750 -1500 through adoption of the national diabetes prevention programme.</td>
<td>Prevent 750-1500 people in Suffolk from developing diabetes.</td>
<td>0.7 – 1.3, only considering costs of avoided medication and assuming the prevention programme starts in year 3. It is estimated that 80% of the costs of diabetes arise from the need to treat complications, which often take</td>
<td>Specific cost savings not identified.</td>
<td>The return on investment from preventing or optimally treating diabetes is extremely complex, as a number of risk factors such as blood pressure, cholesterol and blood glucose all have an effect on the eventual development of the clinical complications of diabetes.</td>
</tr>
<tr>
<td>Modifiable factors</td>
<td>Action we can take in Suffolk</td>
<td>Major illness prevented over 5 years</td>
<td>Net costs prevented over 5 years – health care (£m)</td>
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</tr>
<tr>
<td>Vascular Dementia</td>
<td>Support Suffolk residents to make lifestyle changes which reduce vascular dementia, including managing cardiovascular risk, smoking, alcohol, diet.</td>
<td></td>
<td>longer than 5 years to develop.</td>
<td>Evidence suggests that managing high blood pressure in the diabetic population reduces complications more than managing blood glucose alone.</td>
<td>diabetes, and their associated costs. Clearly, given that spending on diabetes is nearly equal to 10% of total NHS spending, there are significant potential gains from both preventing the disease, and reducing later complications.</td>
</tr>
<tr>
<td>Reduce osteoporosis &amp; falls</td>
<td>Effective identification of at–risk people leading to Optimal prescribing, and the use of evidence-based strength and balance training.</td>
<td>Evidence base suggests that appropriate interventions can reduce the number of falls by 50%. Assuming the number of resulting hip fractures also reduces by 50%, this would prevent approximately 500 hip fractures per year in Suffolk.</td>
<td>It is assumed that the cost of providing additional services will offset the gross savings to healthcare of £17m over 5 years. As some services are already in place, in reality costs may be lower than this, leading to net savings for health services.</td>
<td>5.5 – 8.9</td>
<td>Minimum of 1:1.3 at five years.</td>
</tr>
</tbody>
</table>
Recommendations for best impact in reducing demand 3-5 years

Measures
Every element of the health and care system has a role to play in improving Suffolk’s performance in the detection and management of risks which may result in high cost demand. Some suggested key actions for the system are summarised below.

Table 37: Suggested key actions

<table>
<thead>
<tr>
<th>Cross-cutting</th>
<th>Provide clear Suffolk system leadership from the Health and Wellbeing Board so that the management of cardiovascular risk is prioritised appropriately, resources are appropriate and partners work together to reduce variation and improve outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ensure services and interventions are accessible and appropriate to those at higher risk and those living in low income households and in deprived areas</td>
</tr>
<tr>
<td></td>
<td>Support data sharing and inter-system communication to ensure clinical information from various sources can be included in patient records</td>
</tr>
<tr>
<td>Suffolk County Council (officers and elected members)</td>
<td>Drive the uptake of the NHS Health Check from the current level of 57% in Suffolk ensuring that those in more deprived communities and those who access healthcare services infrequently take this up. Use commissioning specifications and scrutiny reviews to ensure that follow-up is provided and accessed</td>
</tr>
<tr>
<td></td>
<td>Work together with the NHS and wider partners to deliver targeted additional testing for hypertension, AF, diabetes and COPD including in non-traditional settings</td>
</tr>
</tbody>
</table>
| Healthcare commissioners (CCGs and NHS England) | • Understand the local distribution of the estimated 113,000 patients with undetected cardiovascular risks in Suffolk and review testing provision, pathways and current prescribing in light of this  
• Consider the case for targeting investment and incentives in enhanced community pharmacy services and primary care towards more effective detection and management of risks, information provision, and medicines review  
• Provide opportunities for healthcare staff to refresh their skills on the accurate diagnosis of CVD risk factors. Ensure that appropriate risk calculation and clinical audit tools are used. Ensure staff are trained in the communication of risk results. |
| Healthcare providers, practitioners and professional organisations | • Promote clinical leadership, education and training in primary care for the detection and optimal treatment of cardiovascular disease risks, including educational support to improve the effectiveness of prescribing  
• Consider how cardiovascular disease risk measurement and management can be effectively built into wider long term condition management pathways  
• Undertake case-finding audits in general practice to identify high-risk individuals or those who have unresolved diagnoses and follow-up with testing and, if appropriate, diagnosis (supported by call and recall systems) |
| Individuals and families | • Learn about the different indicators of risk factors for cardiovascular disease  
• Seek out regular blood pressure testing so that they know and can track their ‘numbers’, including self-testing at home  
• Develop care plans, in conjunction with health professionals, which include self-management where appropriate, for example taking “rescue medication” for COPD exacerbations |
| Voluntary and community sector | • Provide high-quality supplementary testing and awareness raising opportunities (in particular to high risk groups and those least engaged in the health system)  
• Provide insight into under-served communities to support local commissioning and development of approaches which reduce inequalities (the Early Adopter Sites in Ipswich and Sudbury may present opportunities here)  
• Provide resources and support materials to increase the accuracy and take-up of self-monitoring of cardiovascular disease risks |
7. Last year’s big hits

What have we done since last year?

Up, up and away! 5 public health early years ambitions for Suffolk  
An update on the recommendations from the 2014 Annual Public Health Report

The early years are critical to the development and future health and outcomes for all children. The 2014 Annual Public Health Report outlined the importance of an early years focus and early intervention. Giving children a strong foundation in the early years enhances the key components of growth and development - communication, physical skills and coordination, learning skills, emotional health and wellbeing, and resilience, and thus enables them to perform better at school, develop good social skills and grow into healthy adults.

Under the Raising Bar initiative we are focusing on school readiness, and the proportion of five year olds in Suffolk considered to be making a “good level of development” rose across the Early Years Foundation Stage from 49% in 2013 to 67.6% in 2015. In addition, take up of Early Years entitlement for 2 year olds is 68%, and for 3 and 4 year olds 95%. This will bring positive outcomes to our children in years to come.

Clearly parents play a key role in setting this path and several initiatives and interventions have been developed since last year to support parents in this responsible journey. With our partners we have developed a ‘Common Childhood Illness and Wellbeing’ booklet with an online version and an app to raise awareness among parents/carers and offering advice on what to do and who to approach.
Last year we set 5 challenges for Suffolk:

- **A smoke free environment for children from conception onwards**

  In March 2015, the Suffolk Health and Wellbeing Board recognised that the impressive decline in smoking prevalence over recent years is slowing. In response the Board committed to developing a new approach to reducing the harm from tobacco in our county. The Aspiring to a Tobacco Free Suffolk strategy aims to create an environment where people choose not to smoke; protecting people from second-hand smoke and supporting tobacco control interventions; and supporting and enabling people to stop smoking. The Board has also re energised the tobacco control partnership to oversee delivery of the strategy with engagement from all Health and Wellbeing Board partners. Importantly the strategy focusses on children and young people working with partners to make sure we do not set a poor example to children about smoking, we have quitting support available and an enhanced prevention programme. There is ongoing work aimed to reduce smoking in pregnancy.

- **Adults and children are physically active as part of their daily routine**

  There has been considerable progress in supporting and enabling local families to be physically active and appreciate health and wellbeing benefits.

  The annual Suffolk Walking Festival provided the forum for the launch of the Suffolk Walking Strategy. This strategy is part of a suite of Health and Wellbeing Board plans to increase physical activity in Suffolk. Targeting families in Lowestoft, one of our most deprived areas, a Beat the Street programme run through local schools exceeded all expectations with around a fifth of the population walking an estimated 150,000 miles in just four weeks. A further positive effect was the increase in other activity, with a reported 30% increase in cycling. The subsequent "Golden Mile" programme pilot is running in 5 schools in Lowestoft to support

children to embed new active habits of swimming, walking, jogging and cycling. A formal evaluation will continue to provide data on the continuing impact of these programmes over the next 12 months.

- **Suffolk children eat healthy and nutritious food**
  There have been examples of joint working between agencies to promote healthy eating in schools and in communities.

The Suffolk Healthier Food Awards have been developed with environmental health teams, trading standards, local businesses, dietitians and districts and boroughs to encourage food businesses such as restaurants, cafes, work canteens and takeaways to improve the quality and variety of healthier options available to customers. This will allow customers to make an informed and, if they wish, healthier choice when eating food away from the home. Food businesses will be awarded a Healthier Food Award if they meet the standard. (We are in the final stages of the awards development with an official launch in 2016).

The Suffolk Food Charter is being developed with a wide range of organisations that represent schools, farmers, the retail and environmental sectors. The charter identifies key priorities for Suffolk that will make sure residents enjoy and benefit from locally produced, healthy produce that considers the environmental impact of food production, maintaining a sustainable local food system. Organisations will be able to pledge support for the charter and identify and work towards achieving their own pledges that support the charter. (This is still in development and is planned to go to the HWB in January 2016).

- **Hidden harm is no longer hidden but addressed**
  Addressing the toxic three of domestic abuse, parental mental ill health and parental drug and alcohol misuse has been an area of focus.
Suffolk County Council children and young people’s services have introduced Signs of Safety as the underpinning approach to work with children, young people and families. This is an evidence based child centred approach that works with the child and family to identify concerns and build on the strengths within the family to manage risk and develop resilience.

A refreshed Suffolk Children’s Emotional Wellbeing Strategy and 5 year Transformational Plan is underway through collaborative work with all partners, most importantly children, young people and parents/carers. The aim is to promote good emotional wellbeing and mental health through early identification of problems and ensuring access to the right support in a timely manner by skilled practitioners using evidence based interventions. This includes a family focus so that families, where either the parents/carers, or the children who have mental health problems, receive effective support and interventions. There is commitment to drive this work on and achieve the desired transformation across senior leaders in all the organisations represented at the Health and Wellbeing Board, with the Strategy due to be signed off in December 2015.

The Police and Crime Commissioner commissioned an independent report exploring the experience of people using domestic abuse services in the county and hosted a partnership conference on the topic. The report revealed several areas for action. In response the PCC is planning a formal independent review. The Suffolk Domestic Abuse Forum published its strategic direction and all parties have committed to working together to improve their work on prevention and support for families to free themselves from the harm which accompanies domestic abuse.

The Health and Wellbeing Board has improving mental health as one of its four priorities. A new Joint Commissioning Group has sponsored a needs assessment and subsequent evidence based strategy to strengthen our work on prevention, treatment and support. The Public Health Team has retendered its substance misuse services in 2014/15 with a strengthened offer for adults and young people with drug and/or alcohol problems and for their families. A comprehensive Hidden Harm Needs Assessment will be
completed in 2015 and will be used to identify where and how we can further strengthen our identification and response to these Toxic Three factors.

➢ **Breastfeeding becomes the norm for all communities in Suffolk**

To supplement the existing breastfeeding support services, the Public Health Team has commissioned the Families and Babies service to provide additional support in areas of the county where there are fewer breastfed babies. Our provider of breastfeeding support in the north of the county, East Coast Community Healthcare, continues to shine, with impressive improvement in breastfeeding in challenging communities and the development of innovative support approaches including a new app. They achieved level 3 WHO baby friendly accreditation in 2014.

8. **Top ten prevention hits**

**Recommendations**

1. That this report forms the basis for the Suffolk Health and Wellbeing Board prevention strategy.
2. Improve the diagnosis and management of hypertension, atrial fibrillation, diabetes and COPD.
3. Improve the momentum in delivering the Health and Wellbeing Board tobacco and alcohol strategies.
4. Continue to drive an increase in physical activity.
5. Design services for greatest population prevention impact.
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Chapter 2:
None

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### Acronyms

| ACS  | Adult and Community Services               | HRG | Health Resource Group |
| ASH  | Action on smoking and health              | IAS | Institute of Alcohol Studies |
| AF   | Atrial Fibrillation                        | ICER| Incremental cost-effectiveness ratio |
| A&E  | Accident and Emergency                     | LE  | Life expectancy |
| BGS  | British Geriatrics Society                 | LTC | Long-term condition |
| BHF  | British Heart Foundation                   | NHS | National Health Service |
| BMJ  | British Medical Journal                    | NICE| National Institute for Health and Care Excellence |
| CABG | Coronary Artery Bypass Graft               | NNT | Number Needed to Treat |
| CCG  | Clinical Commissioning Group               | ONS | Office for National Statistics |
| COPD | Chronic Obstructive Pulmonary Disease      | PCI | Percutaneous Coronary Intervention |
| CMACE| Centre for Maternal and Child Enquiries    | PHE | Public Health England |
| CQUIN| Commissioning for Quality and Innovation   | PHOF| Public Health Outcomes Framework |
| CR   | Cardiac Rehabilitation                      | PSSRU| Personal Social Services Research Unit |
| CVD  | Cardiovascular Disease                     | QOF | Quality and Outcome Framework |
| DAFNE| Dose Adjustment For Normal Eating          | RIFFA| Research in Practice for Adults |
| DCLG | Department for Communities and Local       | RCGP| Royal College of General Practitioners |
|      | Government                                   | RCP | Royal College of Physicians |
| DESMOND | Diabetes Education and Self-Management for | SCIE | Social Care Institute for Excellence |
|      | Ongoing and Newly Diagnosed                 | SLCC | Supporting Lives Connecting Communities |
| DH   | Department of Health                        | SPRU | Social Policy Research Unit |
| GERD | Gastro-oesophageal Reflux Disease           | SUS | Secondary Uses Service |
| GI   | Gastro-intestinal                           | VCS | Voluntary and Community Sector |
| GP   | General Practitioner                        | WHO | World Health Organisation |
| GYWCCG| Great Yarmouth and Waveney Clinical         | WSCCG| West Suffolk Clinical Commissioning Group |
|      | Commissioning Group                         |     |                       |
| HES  | Hospital Episode Statistics                 |     |                       |
| HLE  | Healthy life expectancy                     |     |                       |
| HSCIC | Health and Social Care Information Centre  |     |                       |
| IESCCG | Ipswich and East Suffolk Clinical Commissioning Group |     |                       |
Glossary

**Atrial Fibrillation** – A heart condition that causes an irregular and often abnormally fast heart rate

**Call and recall** - A cyclical pattern of call and recall invitations that have been designed to ensure that the maximum number of those deemed to be at risk - i.e. those in a specified age group - receive screening (i.e. cervical)

**Cardiac rehabilitation** – A medically supervised program that helps improve the health and well-being of people who have heart problems - most programmes include: exercise, education, relaxation and emotional support

**Cardiovascular disease**- A general term that describes a disease of the heart or blood vessels

**Chronic obstructive pulmonary disease** - The name for a collection of lung diseases including chronic bronchitis, emphysema and chronic obstructive airways disease

**Disability life years lost, Disability-adjusted life year (DALY)** – A way of quantifying the burden of disease from both early mortality and morbidity. One DALY can be thought of as one lost year of “healthy” life

**Dose-response relationship** – This the relationship between the quantity of a substance given (the dose) and its overall effect (the response) in a person

**Dyspepsia** – Indigestion, pain or discomfort in the upper abdomen

**Gatekeeping** - In this instance this refers to people (usually volunteers) who provide support to the wider community, including by acting as a ‘gatekeeper’ in helping people to access relevant public services

**Gastro-oesophageal reflux disease (GORD)** -A common condition where acid from the stomach leaks out of the stomach and up into the oesophagus (gullet)

**Ischaemic heart disease (also known as coronary heart disease)** – When the heart’s blood supply is blocked or interrupted by a build-up of fatty substances in the coronary arteries, resulting in a decreased blood supply to the heart

**Musculoskeletal disorders** - Any injury, disease or problem relating to the muscles, bones or joints
National Institute for Health and Care Excellence - Provides national guidance and advice to improve health and social care

Pulse palpation - A way of checking a patient’s heart rate, and for any irregularities in the heart rate, by feeling the patient’s pulse in a place where an artery passes close to skin, such as the wrist or neck

Quality Adjusted Life Year (QALY) – a measure of disease burden, including both the quality and the quantity of life lived. It is used in assessing the value for money of health interventions. One QALY is equivalent to one year of life lived in perfect health.

Return on Investment (ROI) – A general term encompassing the techniques for comparing the costs and benefits generated by an investment

Social marketing - An approach that seeks to influence social behaviours for the benefit of individuals and the general population as a whole

Supporting Lives Connecting Communities (SLCC) – A way of working which aims to promote independence and recovery, develop local solutions in supportive communities, promote working in partnership, build on people’s capacity and strengths, and provide support to individuals tailored to their situation

Weight management support tiers- Tier 1 services have a focus on prevention and early intervention. Tier 2 services involve multi-component programmes but with a balance between intervention and maintenance. Tier 3 services are multidisciplinary specialist weight management services delivered in appropriate professional settings

Figures

Figure 1: Emergency admissions among residents of Suffolk County for all causes by age band between 2011/12 – 2013/14
Figure 2: Emergency admissions among residents of Suffolk County for all causes by age band and year
Figure 3: Emergency admissions by primary cause, for all age Suffolk residents, 2011-2014 (ICD-10 chapters with 1+ emergency admissions during period)
Figure 4: Emergency admissions with primary diagnosis in ICD-10 chapter 18 (symptoms and signs not elsewhere classified, 2011-2014, all Suffolk residents age 85+)
Figure 5: Emergency admissions with primary diagnosis in ICD-10 chapter 19 in Suffolk residents aged 65-84 years, split by secondary diagnosis (2nd-5th position), all Suffolk residents age 65-84, 2011-2014
Figure 6: Emergency admissions with primary diagnosis in ICD-10 chapter 19 (injury and poisoning), split by secondary diagnosis code (2nd-5th position) in Suffolk residents age 85+, 2011-2014
Figure 7: Estimated observed / expected prevalence of hypertension and undiagnosed patients in Suffolk, by CCG
Figure 8: Clinical impact of increasing hypertension diagnosis rates in Suffolk by 15% over 5 years
Figure 9: Net financial impact of increasing hypertension diagnosis rates in Suffolk by 15% over 5 years
Figure 10: Clinical impact of improving the management of hypertension in Suffolk over 5 years
Figure 11: Net financial impact over 5 years of improving the management of hypertensive patients in Suffolk over 5 years, £m
Figure 12: Clinical impact of improving AF diagnosis in Suffolk to highest levels per CCG cohort over 5 years
Figure 13: Estimated net financial impact of increasing AF diagnoses in Suffolk to highest levels per CCG cohort over 5 years, £m
Figure 14: Clinical impact of treating currently untreated AF patients Suffolk over 5 years
Figure 15: The net financial impact of improved AF management in Suffolk over 5 years, £m
Figure 16: Estimated observed / expected prevalence of diabetes and the number of undiagnosed diabetic patients in Suffolk, by CCG
Figure 17: Estimated observed / expected prevalence of COPD in Suffolk, and numbers of undiagnosed patients by CCG
Figure 18: Ten components of care for older people
Figure 19: Trend in dementia prevalence in Suffolk
Figure 20: Dementia cases by age and year in Suffolk
Figure 21: Permanent admissions to residential nursing care homes per 100,000
Figure 22: Hip fracture timeline of morbidity
Figure 23: Stepwise implementation diagram
Figure 24: Cost burden data
Figure 25: Smoking prevalence across the socio-economic spectrum in England: smoking throughout pregnancy (2010), smoking among young people aged 16-19 (2006-2012), and smoking in the adult population aged 18+ (2013)
Figure 26: Three year comparison of smoking quits taken at quarter 3, Ipswich and East CCG and West Suffolk CCG
Figure 27: Percentage of Suffolk clients who quit smoking from routine and manual occupation groups compared to total quits in 2009/10
Figure 28: Percentage of Suffolk clients who quit smoking from routine and manual occupation groups compared to total quits in 2014/15
Figure 29: Percentage of Suffolk clients who quit smoking who are eligible are eligible for free prescriptions compared to total for free prescriptions compared to total quits in 2009/10
Figure 30: Percentage of Suffolk clients who quit smoking who are eligible are eligible for free prescriptions compared to total for free prescriptions compared to total quits in 2014/15
Figure 31: Health Check ready reckoner summary, Suffolk
Figure 32: Vaccination uptake and deprivation score, Suffolk GP data 2015
Figure 33: Suffolk’s Carer Population Stratified by Hours of Unpaid Care per Week

Tables
Table 1: Male and female life expectancy summary
Table 2: Number and distribution of inpatient spells for all causes for all Suffolk residents by age (2011/12-2013/14)
Table 3: Cost of inpatient spells for all causes for Suffolk residents by age (2011/12-2013/14)
Table 4: Suffolk - Programme Budgeting Analysis, 2013-14
Table 5: Suffolk: Programme Budgeting Analysis - Highest areas of programme spend, 2013-14
Table 6: Top five causes (ICD-10 chapter of primary diagnosis) for emergency admissions for all Suffolk residents and in selected age-bands between 2011/12 – 2013/14
Table 7: Types of care and spend, average customer numbers, 2011-2015
Table 8: Learning disability client group spend, and average customer numbers, ages 18-64, 2011-2015
Table 9: Mental health client group spend, and average customer numbers, ages 18-64, 2011-2015
Table 10: All customer group spend, and average customer numbers, 2011-2015
Table 11: Risk factors and preventable disease links
Table 12: Comparison of the Numbers Needed to Treat for hypertension management and blood glucose management in patients with diabetes
Table 13: Modelled estimates of the number of frail people in Suffolk in 2012 and 2037
Table 14: Prevention/ intervention cost summary table
Table 14: People aged 65 and over in Suffolk predicted to have a fall, by age, projected to 2030
Table 15: People aged 65 and over predicted to be admitted to hospital as a result of falls, by age, projected to 2030
Table 16a: Emergency admissions for falls in all Suffolk patients aged 50 years and over
Table 16b: Cost of emergency admissions for falls in all Suffolk patients aged 50 years and over
Table 17a: Emergency admissions for falls in male Suffolk patients aged 50 years and over
Table 17b: Cost of emergency admissions for falls in male Suffolk patients aged 50 years and over
Table 18a: Emergency admissions for falls in female Suffolk patients aged 50 years and over
Table 18b: Cost of emergency admissions for falls in female Suffolk patients aged 50 years and over
Table 19a: Emergency admissions for hip fractures in Suffolk patients aged 50 years and over
Table 19b: Cost of emergency admissions for hip fractures in Suffolk patients aged 50 years and over
Table 20a: Emergency admissions for hip fractures in Suffolk males aged 50 years and over
Table 20b: Cost of emergency admissions for hip fractures in Suffolk males aged 50 years and over
Table 21a: Cost of emergency admissions for hip fractures in Suffolk females aged 50 years and over
Table 21b: Cost of emergency admissions for hip fractures in Suffolk females aged 50 years and over
Table 22a: Emergency admissions for non-hip fragility fractures in Suffolk patients aged 50 years and over
Table 22b: Cost of emergency admissions for non-hip fragility fractures in Suffolk patients aged 50 years and over
Table 23a: Emergency admissions for non-hip fragility fractures in Suffolk females aged 50 years and over
Table 23b: Cost of emergency admissions for non-hip fragility fractures in Suffolk females aged 50 years and over
Table 24: Prevalence of osteoporosis in persons aged 50 and over (2013/14)
Table 25: Direct impacts of actions on health outcomes
Table 26: Potential saving to health care cost for weight management programmes
Table 27: Savings information, return on investment tool data
Table 28: Interventions and benefits information
Table 29: Estimated savings to the NHS budget in Suffolk from the NHS Health Checks programme
Table 30: MECC training uptake and subsequent referrals to lifestyle services
Table 31: Flu vaccine uptake summary by CCG, 2014/15 season (ending 31/01/15)
Table 32: Flu vaccine uptake summary by CCG, 2013/14 season (ending 31/01/14)
Table 33: Flu Vaccination uptake by eligibility group, 2014/15
Table 34: Pneumococcal (PPV) vaccination status for year ending 31st March 2015
Table 35: Pneumococcal (PPV) vaccination status for year ending 31st March 2014
Table 36: Summary table for report
Table 37: Suggested key actions