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THE ROYAL BOROUGH OF KINGSTON UPON THAMES

merton

LONDON BOROUGH OF RICHMOND UPON THAMES

Making the case for public health interventions

A tailored report for Croydon, Kingston, Merton and Richmond local authorities

South West London
Academic, Health and Social Care
System

Responding to change in SW London

Contents

1 Introduction

This report presents tailored information for Croydon, Kingston, Merton and Richmond local authorities to help them make the case for public health interventions. It builds on the work of The King's Fund and Local Government Association who produced a set of infographics[1] summarising information on the economic and wider case for public health interventions in late 2014. We are grateful for the assistance of The King's Fund in the production of this report.

All parts of the health and social care sectors are under increasing financial pressure and learning how to respond in a time of austerity. In this context, this work provides a contribution to the evidence which demonstrates the value of public health interventions. When reading this paper, it is important to acknowledge a number of challenges and caveats. Some of these are listed below and others addressed in the final section, 'Commentary on findings and some recommendations'.

- There is a varied array of specifications for return on investment, a number of different methodologies and no 'correct way' to identify and report on it. It is, however, most important that what is included and what is not included regarding the method chosen is made explicit.
- Return on investment does not necessarily signify a direct cash return on any investment made as the value of any investment is often realised in terms of improved health for individuals and/or savings made across the health and social care system.
- It is also important to acknowledge that the returns are not necessarily immediate but can be experienced over a number of years.
- The benefits accrued from investing in public health interventions can be complex/hard to quantify directly but this does not undermine the value of doing this type of analysis; rather it calls for more work to be done both to achieve some greater consistency in the use of terminology and in the analysis of the impact and cost consequences – particularly for other parts of local government.
- The paucity of data and information and some of the methodological challenges are addressed in the last section of this report.

1.1 Scope of this report

The bulk of this paper 'tailors and unpacks' the joint infographics published by The King's Fund and the Local Government Association (LGA) in September 2014. We are grateful to both organisations for their support in reproducing this material in this report. Sections 2 and 3 are tailored versions of these slides for the four SW London boroughs. For ease of interpretation, these are set out with the original slide presented first, and then the tailoring and unpacking, followed by sources.

Section 2 broadly correlates to the first half of The King's Fund–LGA slides on the funding, spending, context and burden of public health in England. These have been adapted to each of the four boroughs where possible.

[1] See www.kingsfund.org.uk/audio-video/public-health-spending-roi

Section 3 looks at health and behaviours, again adapted to the boroughs as appropriate.

Section 4 includes the unpacking of return on investment to set out which sectors or organisations the returns flow to and, where possible, over which time period. In several of these examples, additional data has been added from other studies. For all of these, where feasible, there is a 'percentage of breakdown' summary which sets out where the returns flow.

Section 5 also includes new material on interventions related to early years, alcohol, and traffic calming measures as they are relevant to the four boroughs' priorities (see annex).

1.2 Caveats

The material in the paper has been developed in order to be of most use to the four SW London boroughs. This has involved making judgements on the following factors.

1. Selection of material: Where possible the direct sources from The King's Fund-LGA infographics have been used. In some cases either this material is no longer available, or was not able to be broken down usefully, in which case it has been supplemented by additional material.

2. Tailoring of material: Either borough or data from national administrative sources has been used in order to tailor material to the south-west London system. The bulk of this guide was written in the first half of 2015, using comparable data across boroughs. The boroughs may have more specific data and some comparable data will since have been updated from national sources. A number of slides from the original King's Fund-LGA publication have not been amended. For example, the first slide in section 2, on the importance of public health, has not been amended because it is relevant and useful as it is. The vast majority of the data and sources used in this report were accessed up to July 2015. In some specific cases they have been updated (for example on the advice of boroughs) or to replace links which have ceased working beyond that date (for example, due to a reformatting in the Office for National Statistics' website. They are correct as at beginning of April 2016.

3. Sources: For some areas there is a dearth of material and, for others, a relative glut. For example, for housing interventions, choices had to be made about what to present but there are other choices which could have been made about the selection of data. Housing is an area where a more complete set of material could be developed.

4. Tools: For physical activity intervention, the National Institute for Health and Care Excellence (NICE) physical activity return on investment tool has been used to show how for one of the boroughs, Croydon, a physical activity intervention could lead to returns on investment. This could be repeated for other boroughs and other NICE tools could be used for alcohol and tobacco. However, they have not been used further here.

5. There is other work in progress in this area: Public Health England has commissioned a review of the availability and usefulness of return on investment tools for public health[2] and it is also

[2] See www.yhpho.org.uk/default.aspx?RID=194888

developing and releasing related infographics as part of their Health Matters series, for example on alcohol.[3]

1.3 Commentary and recommendations

Following the first draft of this report, the Directors of Public Health expressed some concern about the paucity of material on the return on investment for public health intervention to social care. Section 6 responds to this.

1.4 Conclusion

There is a large amount of material available that can *inform* Directors of Public Health on the likely return on investment of their activity. This paper summarises and personalises some of that information.

However, due to the wide range, age and methodologies of studies and the particular needs of Directors of Public Health, there is no single study that will 'hit the spot 100 per cent'. This requires bespoke studies and analysis.

NICE's and other tools for specific sorts of investment (such as physical activity and alcohol) seek to fill the gap between these bespoke (and time-intensive) studies and the translation of other's work that is the focus of this paper.

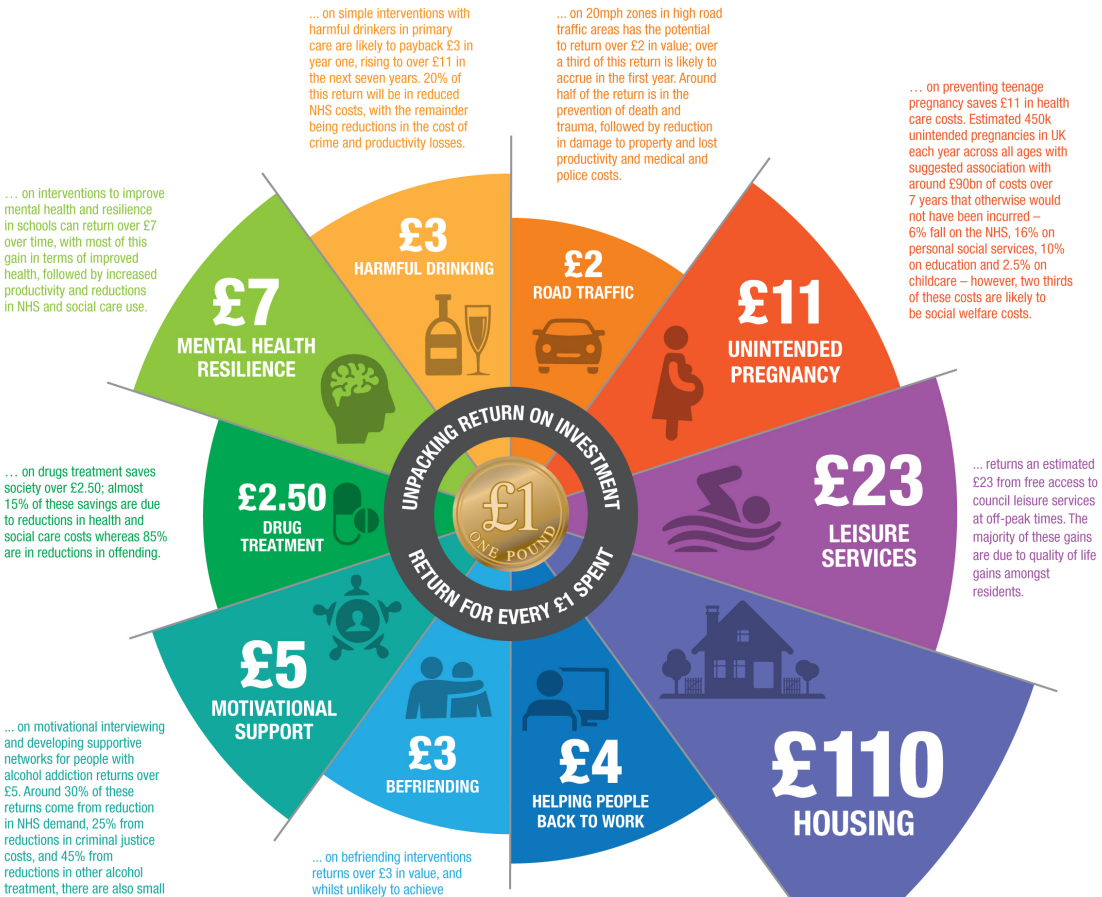
It is hoped that this set of information is useful in informing the boroughs' work and the communication of it to others.

[3] www.gov.uk/government/publications/health-matters-harmful-drinking-and-alcohol-dependence/health-matters-harmful-drinking-and-alcohol-dependence

Public health works...

South West London
Academic, Health and Social Care
System

FOR EVERY £1 SPENT ...



… on interventions to improve mental health and resilience in schools can return over £7 over time, with most of this gain in terms of improved health, followed by increased productivity and reductions in NHS and social care use.

... on simple interventions with harmful drinkers in primary care are likely to payback £3 in year one, rising to over £11 in the next seven years. 20% of this return will be in reduced NHS costs, with the remainder being reductions in the cost of crime and productivity losses.

... on 20mph zones in high road traffic areas has the potential to return over £2 in value; over a third of this return is likely to accrue in the first year. Around half of the return is in the prevention of death and trauma, followed by reduction in damage to property and lost productivity and medical and police costs.

… on preventing teenage pregnancy saves £11 in health care costs. Estimated 450k unintended pregnancies in UK each year across all ages with suggested association with around £90bn of costs over 7 years that otherwise would not have been incurred – 6% fall on the NHS, 16% on personal social services, 10% on education and 2.5% on childcare – however, two thirds of these costs are likely to be social welfare costs.

... returns an estimated £23 from free access to council leisure services at off-peak times. The majority of these gains are due to quality of life gains amongst residents.

… on drugs treatment saves society over £2.50; almost 15% of these savings are due to reductions in health and social care costs whereas 85% are in reductions in offending.

... on motivational interviewing and developing supportive networks for people with alcohol addiction returns over £5. Around 30% of these returns come from reduction in NHS demand, 25% from reductions in criminal justice costs, and 45% from reductions in other alcohol treatment, there are also small reductions in social care costs.

... on befriending interventions returns over £3 in value, and whilst unlikely to achieve overall savings for the public purse do improve quality of life at low cost. Social support plays an important role in increasing resilience to illness, helping recovery and improving wellbeing. Befriending can reduce NHS costs for those supported by around £40 per annum, but more importantly improve quality of life associated with reduced depressive symptoms worth around £270 per person.

... returns over £4 from programmes getting long-term inactive people back to work. Worklessness costs the economy more than £100bn every year, including up to £11bn to the NHS and £45bn in informal care and £10bn in sickness absence. The Return on investment gains include reduction in benefit payments and the health improvement for those helped.

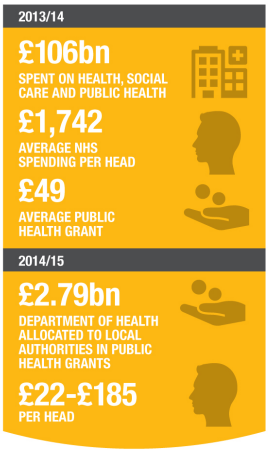
… on improving homes to reduce serious falls returns £70, to reduce excess cold returns £34 and to reduce overcrowding returns over £6 to the NHS in reduced demand and use over 10 years respectively. Housing interventions to keep people warm, safe and free from cold and damp are an efficient use of resources.

Figures taken from 'Making the case for public health interventions' infographics, produced jointly by The King's Fund and the Local Government Association, September 2014'. www.kingsfund.org.uk/publichealthinfographics

THE IMPORTANCE OF PUBLIC HEALTH

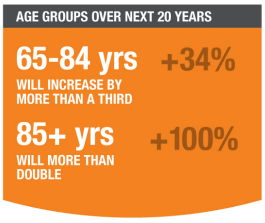
Our health is determined by our genetics, lifestyle, the health care we receive and our wider economic, physical and social environment. Although estimates vary, the wider environment has the largest impact.

FUNDING, SPEND AND CONTEXT



SPEND NHS AND PUBLIC HEALTH

In 2013/14 the Department of Health spent more than £106bn on health, social care and public health in England. Average NHS spending per head was £1,742 whilst the average public health grant was £49. In 2014-15 the Department of Health allocated £2.79bn to local authorities in public health grants. This ranged from £185 per head to £22 per head.

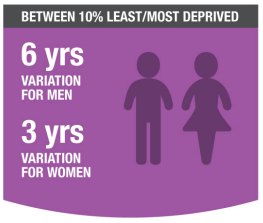


AGING POPULATION

Over the next 20 years the number of people in England aged 65-84 will increase by more than a third, and the number aged 85 and above will more than double.

AVERAGE LIFE EXPECTANCY

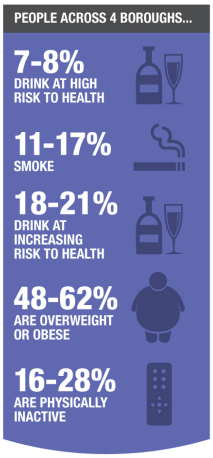
The average life expectancy in England has been increasing. In 1991 it was 73.6 years for men and 79.1 for women; this had increased to 79.1 and 82.9 respectively by 2010-12.



LIFE EXPECTANCY

There are wide variations in life expectancy between different populations. Even within a single SW London borough, variations between the 10% most deprived and 10% least deprived people could mean a difference of 6 years for men and 3 years for women.

HEALTH AND BEHAVIOUR



HEALTH AND BEHAVIOUR

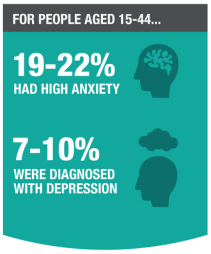
It is estimated that thousands of adults in four SW London boroughs could improve their lifestyle which would help them to live longer and healthier. The latest data suggests that across these boroughs between 11 - 17% smoke, between 48% and 62% are overweight or obese, 7 - 8% are drinking alcohol at high risk to their health and a further 18 - 21% at increasing risk. Finally, 16 - 28% of adults are physically inactive.

MULTIPLE UNHEALTHY BEHAVIOURS

Multiple unhealthy behaviours have a cumulative effect on health. Someone in mid-life who smokes, drinks too much, exercises too little and eats poorly is four times as likely to die over the next 10 years as someone who does none of those things. Studies in deprived parts of London suggest that those unable to work, are ill or disabled are at particular risk; over two-thirds of this group report reported at least three risk behaviours. We need to do more to help and support this group.

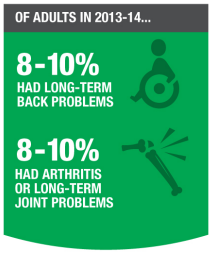
COST OF UNHEALTHY LIFESTYLES

Unhealthy lifestyles cost the NHS across the UK billions of pounds every year - smoking costs £5.2 billion; obesity £4.2 billion; alcohol £3.5 billion and physical inactivity £1.1 billion.



MENTAL HEALTH

Mental illness is by far the most common illness for people aged 15-44 and the incidence rises further with age. Latest data suggests that in 4 SW London boroughs between 19 - 22% of adults had high anxiety and between 7 - 10% were diagnosed with depression.

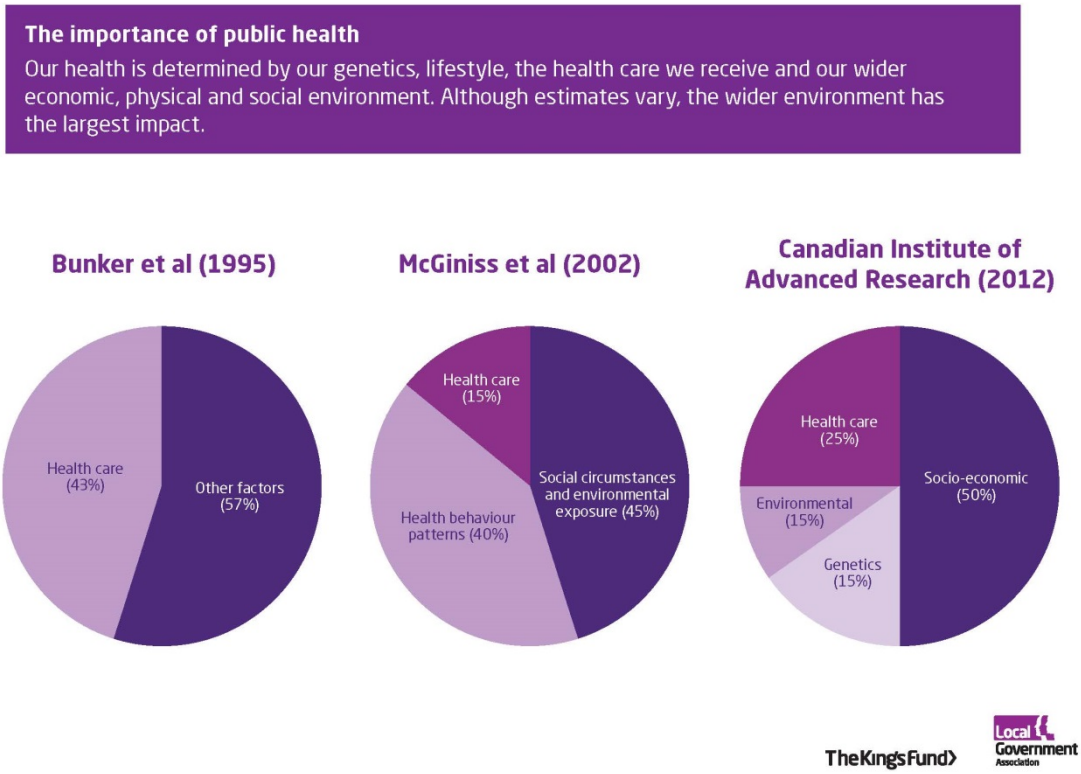


MUSCULO-SKELETAL PROBLEMS

As of 2010, musculoskeletal problems, such as back pain and arthritis, are the most common conditions to limit people's daily activities and the largest single cause of years lived with disability. In 2013-14 across four SW London boroughs, 8 -10% of adults had long-term back problems and between 8 - 10% had arthritis or long-term joint problems.

2 Spending and costs

2.1. The contribution of various factors to health



This is relevant to all the boroughs, pointing out what the evidence suggests are the relative contributions of health care, wider determinants and behaviours to health. This is scene-setting and tailoring is not needed. It can be used by the boroughs, as it is.

The importance of public health

Our health is determined by our genetics, lifestyle, the health care we receive and our wider economic, physical and social environment. Although estimates vary, the wider environment has the largest impact.

Sources:

Infographics

www.kingsfund.org.uk/time-to-think-differently/trends/broader-determinants-health#messages, drawn from http://books.google.co.uk/books?id=J3Uer_Iv0V8C&lpg=PA305&ots=uJaQtUbsuH&dq=info%3AuRpgQOigYAUJ%3Ascholar.google.com&lr&pg=PA305#v=onepage&q&f=false and http://content.healthaffairs.org/content/21/2/78.full.html and Canadian Institute for Advanced Research in www.nlgn.org.uk/public/wp-content/uploads/Healthy-Places_FINAL.pdf

2.2 Spending and grant on public health per head

In 2013/14, average NHS spending per head was £1,742; average public health grant for England was £49 per head. The grants for the boroughs are represented in Table 2.2.1.

Table 2.2.1

Public health grant per head

Borough	2013/14	2014/15
Croydon	£49	£50
Kingston	£53	£54
Merton	£43	£43
Richmond	£40	£40

Average spend on NHS and public health

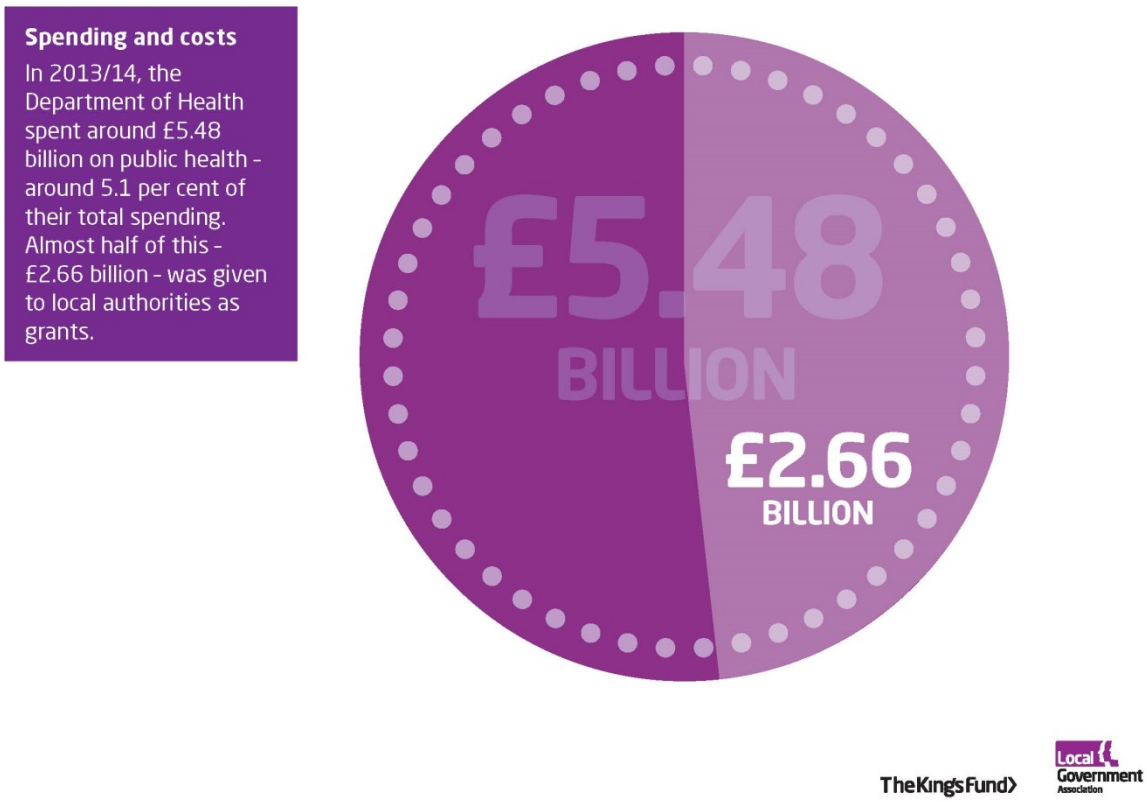
In 2013/14 the Department of Health spent more than £106 billion on health, social care and public health in England. Average NHS spending per head was £1,742 while for the four SW London boroughs, the grant for public health spending ranged from £40 to £53 per head. The 2014/15 grant for the four boroughs was within a similar range.

Sources:

Infographics and Table 2.2.1

Based on Department of Health revenue departmental expenditure limit, NHS England revenue departmental expenditure limit (both out-turns), local authority grants and population estimates from:
www.gov.uk/government/uploads/system/uploads/attachment_data/file/335166/DH_annual_accounts_2013-14.pdf and www.gov.uk/government/publications/ring-fenced-public-health-grants-to-local-authorities-2013-14-and-2014-15

2.3 Public health grant at England and borough level



This is contextual information. There is no borough-level equivalent since it is not possible to split the overall total to borough level, although the £2.66 billion could be partitioned into borough-level data.

At borough level, however, there is information on the overall level of public health grant set out in Table 2.3.1.

Table 2.3.1

Borough public health allocations, total

Borough	2013/14	2014/15
Croydon	£18,312,000	£18,825,000
Kingston	£9,049,000	£9,302,000
Merton	£8,985,000	£9,236,000
Richmond	£7,676,000	£7,891,000

Spending on public health

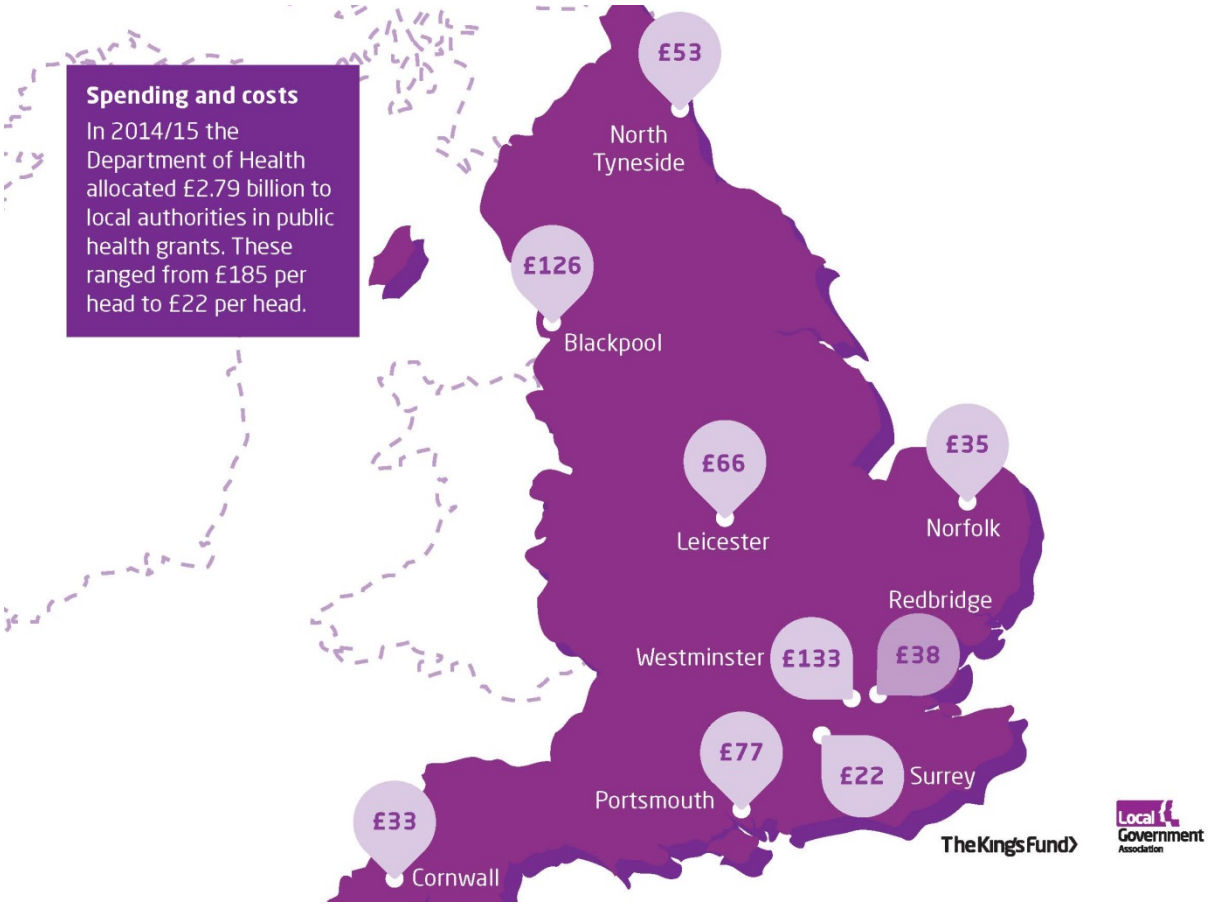
In 2013/14 the Department of Health spent around £5.48 billion on public health – around 5.1 per cent of their total spending. Almost half of this – £2.66 billion – was given to local authorities as grants.

Sources:

Infographic and Table 2.3.1

www.england.nhs.uk/allocations-2013-14/ and
www.gov.uk/government/uploads/system/uploads/attachment_data/file/325522/PHE_Annual_Report_and_Accounts_2013_to_2014.pdf and
www.gov.uk/government/uploads/system/uploads/attachment_data/file/335166/DH_annual_accounts_2013-14.pdf

2.4. Representation of spread of public health budgets per head by area



This map for 2014/15 represents the spread of public health grants and could be updated with the four boroughs data, using the final columns' data in Table 2.4.1.

Table 2.4.1

Borough total public health grant 2014/15

Borough	**2014/15**
Croydon	£50
Kingston	£54
Merton	£43
Richmond	£40

Range of allocations

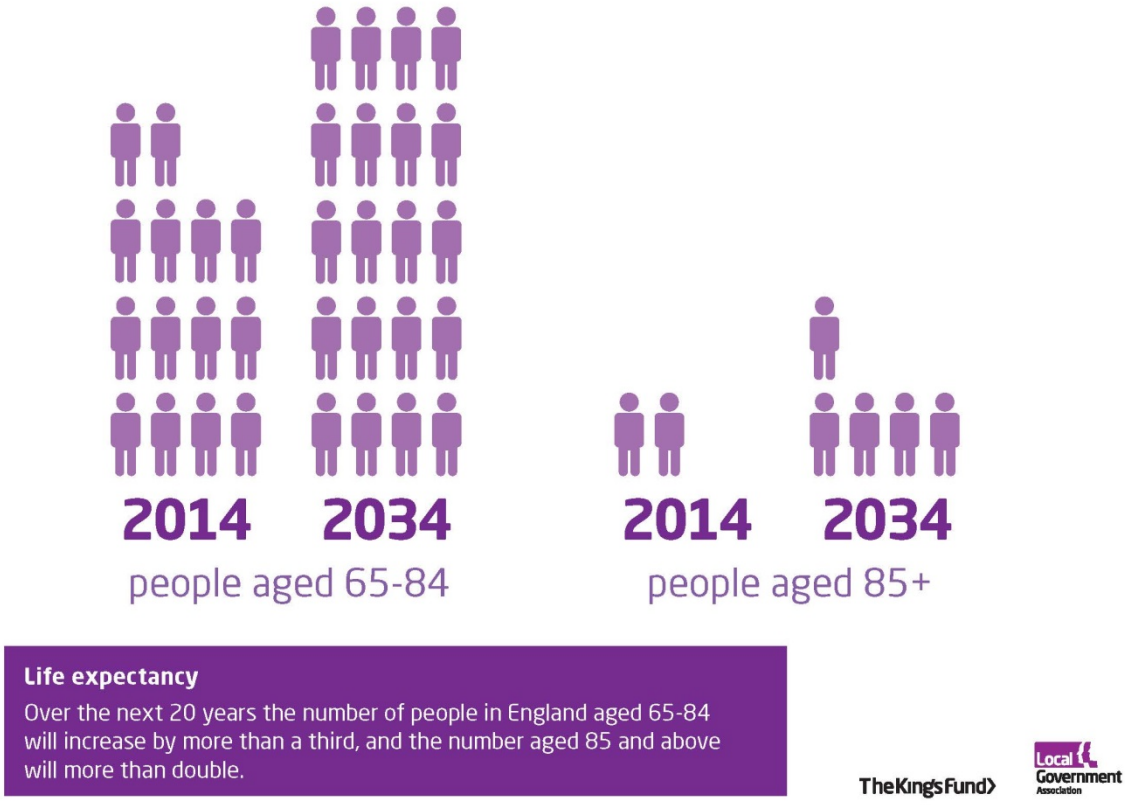
In 2014/15 the Department of Health allocated £2.79 billion to local authorities in public health grants. This ranged from £185 per head to £22 per head. For the four south-west London boroughs the grant for public health spending ranged from £40 to £54 per head.

Sources:

Infographic and Table 2.4.1

www.gov.uk/government/publications/ring-fenced-public-health-grants-to-local-authorities-2013-14-and-2014-15

2.5. Population growth over time



In Table 2.5.1, the English projections above have been complemented with borough-specific projections from Office for National Statistics (ONS), based on mid-2012 projections.

Table 2.5.1

Predicted population growth in the borough 2014–34

Borough	**2014**		**2034**		**Growth**	
	65–84	**85+**	**65–84**	**85+**	**65–84**	**85+**
Croydon	42,000	6,400	67,900	13,400	62%	109%
Kingston	19,100	3,500	29,300	6,900	53%	97%
Merton	21,400	3,400	32,300	6,600	51%	94%
Richmond	24,000	4,300	36,100	8,900	50%	107%

This shows, for the four boroughs, a bigger challenge in the growth of the 65–84 age group than for England as a whole, growing by at least 50 per cent and a similar challenge for the 85+, with population set to double or thereabouts.

Ageing population

Over the next 20 years the number of people in England aged 65–84 will increase by more than a third, and the number aged 85 and above will more than double. For four SW London boroughs the growth in those aged 65–84 is forecast to be between 50 per cent and 62 per cent and, for those aged 85+, between 94 per cent and 109 per cent.

Sources:

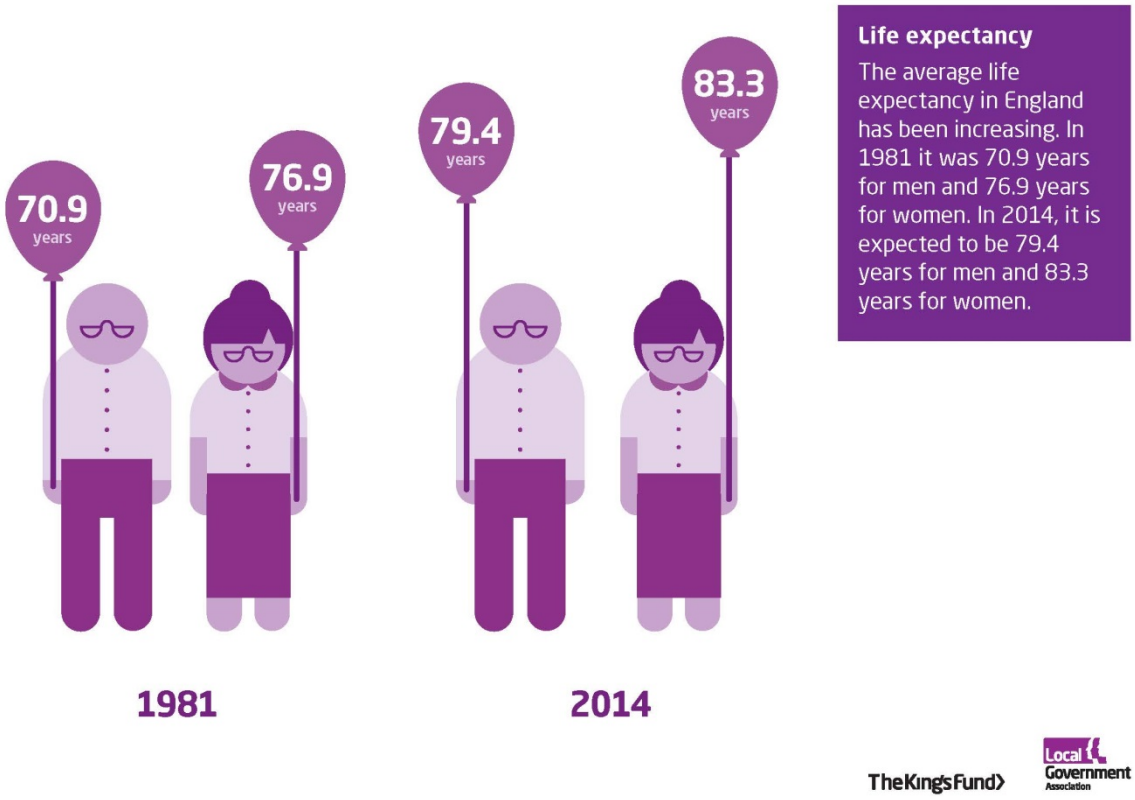
Infographics:

www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-335242

Table 2.5.1:

The King's Fund analysis of
www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/z1zippedpopulationprojectionsdatafilesuk

2.6. Life expectancy growth over time



It was not possible to source life expectancy at birth data back to 1981 at borough level. The figures in Table 2.6.1 below go back to 1991 and include England as a reference at this date.

Table 2.6.1

Changes in life expectancy over time for the boroughs and England, 1991 to 2012

Borough	**1991–93**		**2010–12**		**Change in life expectancy**	
	M	**F**	**M**	**F**	**M**	**F**
ENGLAND	73.6	79.1	79.1	82.9	5.5	3.8
Croydon	74.2	79.2	79.2	83.2	5	4
Kingston	75.5	80.3	81.4	84.8	5.9	4.5
Merton	74.7	80.0	80.2	84.2	5.5	4.2
Richmond	74.9	80.6	81.7	85.9	6.8	5.3

It is worth noting that for all four boroughs, life expectancy is higher than the England average.

Over the period 1991–93 to 2010–12, in all the boroughs, except Croydon, male life expectancy grew faster than the England average and, for females, life expectancy in each borough grew faster than the England average.

Life expectancy

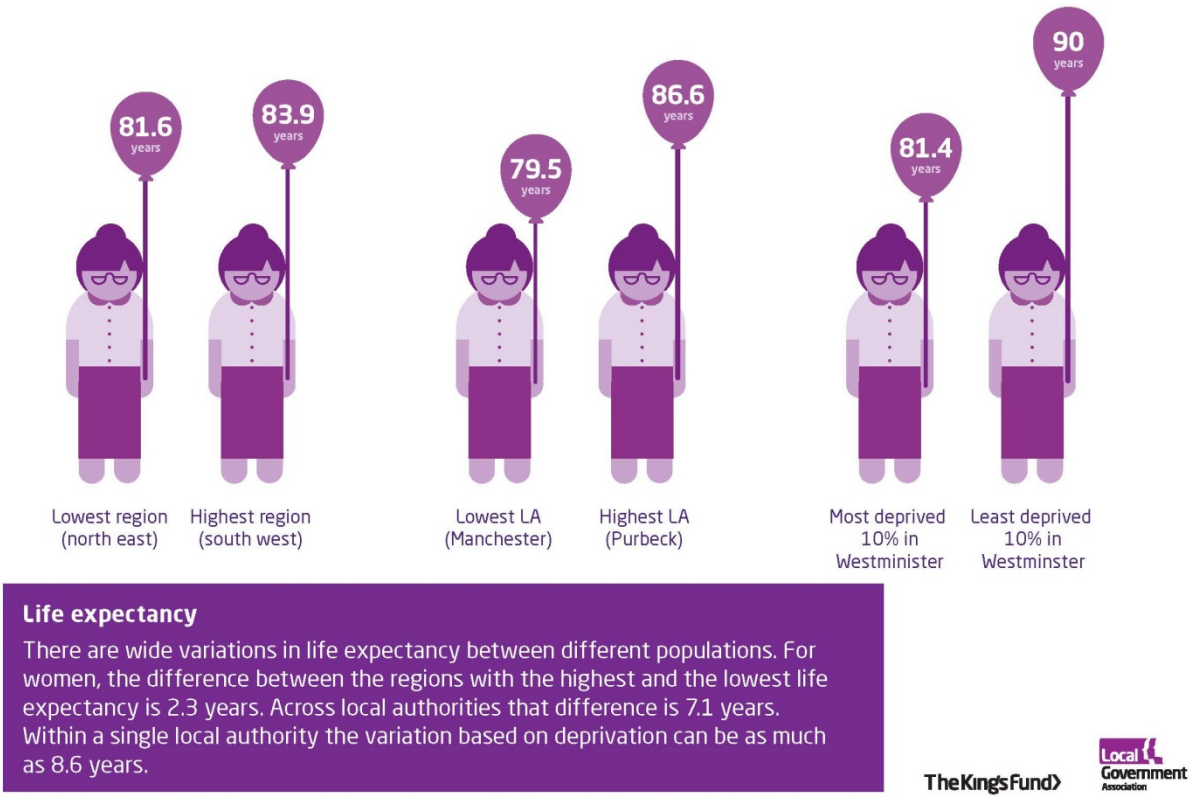
The average life expectancy in England has been increasing. In 1991 it was 73.6 years for men and 79.1 for women; this had increased to 79.1 and 82.9 respectively by 2010–12. Over the same time period, in the four south-west London boroughs, life expectancy increased by between 5 and 6.8 years for men and by between 4 and 5.3 years for women to reach between 79.2 and 81.7 years for men and between 82.9 and 85.9 years for women respectively.

Sources:

Infographic: www.ons.gov.uk/ons/dcp171776_237747.pdf

Table 2.6.1: The King's Fund analysis of www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/bulletins/lifeexpectancyatbirthandatage65bylocalareasintheunitedkingdom/2014-04-16

2.7. Life expectancy variations, highest and lowest



The life expectancy for the residents of the four south-west London boroughs can be compared against these regional and local authority figures using the data in Table 2.6.1.

To make this a more meaningful comparison, a closer look was taken at the life expectancy within area by deprivation in the four boroughs and these figures set against the data for Westminster in the right-hand side of the infographic above. See Table 2.7.1 below.

Table 2.7.1

Life expectancy in the four boroughs by deprivation against Westminster, 2010 to 2012

Borough	**Most deprived 10%**		**Least deprived 10%**		**Difference**	
	M	**F**	**M**	**F**	**M**	**F**
Westminster	76.5	81.6	89.1	89.1	12.6	7.5
Croydon	75.2	80.2	83.6	87.1	8.4	6.9
Kingston	78.1	81.8	84.4	87.5	6.3	5.7
Merton	76.7	83.4	84.8	86.2	8.1	2.8
Richmond	77.5	82.3	87	88.8	9.5	6.5

Life expectancy variations

There are wide variations in life expectancy between different populations. In the four south-west London boroughs, the difference between the most deprived 10 per cent and the least deprived 10 per cent of the population ranges from under 3 years to almost 7 years for women and from more than 6 years to more than 9 years for men.

Sources:

Infographics and Table 2.7.1

www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0ahUKEwjo8-aUqNTLAhVEPhQKHYnsDK8QFgg6MAU&url=http%3A%2F%2Fwww.phoutcomes.info%2Fdocuments%2FLife_Expectancy_Deciles_2002-04_2010-12.xls&usg=AFQjCNFmgbSzs-pn6nK606TMDnVC_KeiOA&cad=rja

2.8. Healthy life expectancy inequalities by CCG and by local authority

The infographic shows the biggest gap in England for female life expectancy by clinical commissioning group (CCG). In Table 2.8.1 we present healthy life expectancy for the four south-west London boroughs.

Table 2.8.1

Healthy life expectancy data for the boroughs' CCGs, against England for 2010 to 2012

Borough	Male	Female
ENGLAND	63.5	64.8
NHS Croydon	63.9	64.6
NHS Kingston	67.0	68.3
NHS Merton	65.3	66.3
NHS Richmond	69.2	71.0

Richmond has the fifth highest male and third highest female healthy life expectancy of any CCG in England. The other boroughs' healthy life expectancies are closer to the England average.

We can also look at this data for 2009–11 by borough in Table 2.8.2, based on upper-tier local authorities.

Table 2.8.2

Healthy life expectancy data for the boroughs, against England for 2009 to11

Borough	**M**	**F**
ENGLAND	63.2	64.2
Croydon	62.1	65.8
Kingston	63.5	64.4
Merton	64.5	65.9
Richmond	70.3	72.1

Richmond has the highest healthy life expectancy of any upper-tier local authority in England for both females and males. The other boroughs' healthy life expectancies are closer to the England average.

Healthy life expectancy

The length of our life is important but so is how many years of our lives are spent in good health. In the four south-west London boroughs men can expect to live to between 62.1 years and 70.3 years in good health, and women to between 64.4 years and72.1 years, compared to the England averages of 63.2 and 64.2 years respectively.

Sources:

Infographic

www.ons.gov.uk/ons/dcp171776_356961.pdf

Table 2.8.1

www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/articles/healthylifeexpectancyatbirthandatage65clinicalcommissioninggroups/2014-03-21

Table 2.8.2

www.ons.gov.uk/ons/dcp171778_327530.pdf

2.9. Disability-free life expectancy inequalities

The above is based on full England data, based on middle super output areas (MSOA) (around 6,700 statistical 'communities' with average populations of around 5,000). This disability-free life expectancy data is only available for 1999–2003 (although it is being updated in October 2016).

Given time, this could conceivably be updated for the boroughs (in terms of where their MSOAs sat in the distribution) although it would not translate well into a simple infographic or message.

Disability-free life expectancy

According to the latest data (1999–2003) people living in the poorest neighbourhoods in England will, on average, die 7 years earlier than those in the richest. They also live their lives with more illness. The average difference between the poorest and richest neighbourhoods in disability-free life expectancy is 17 years.

Sources:

Infographics: www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review/fair-society-healthy-lives-executive-summary.pdf

3 Health and behaviours

3.1. Health behaviours in adults

This is based on summaries of Health Survey for England data. This data cannot be cut down to borough level. However, an approximation of rates and overall numbers from other sources is available to develop equivalent infographics at borough level.

Borough figures (and the England rates and numbers in the tables below) are taken from various modelled estimates including local tobacco profiles, local alcohol profiles, obesity profiles and the Public Health Outcomes Framework. These are set out in Tables 3.1.1 and 3.1.2.

Where local authorities have their own data, this should be used in preference. There are also alternative local-authority-based sources for related information including, for example, admission rates and mortality from liver disease for alcohol in the Public Health Outcomes Framework.

Table 3.1.1

Estimates of rates per borough for smoking, overweight and obesity, alcohol use and physical activity, in adults, various years

Borough	**Smoking (2013, 18+)**	**Overweight or obese (2012, 16+)**	**Alcohol (2008–09, 16+, minus abstainers)**		**Physically inactive adults (2014, 16+)**
			Higher risk	**Increasing risk**	
ENGLAND	18.4%	63.8%	6.75%	20%	27.7%
Croydon	17.0%	62.1%	6.70%	18.05%	25.6%
Kingston	15.1%	55.1%	8.03%	21.03%	26.7%
Merton	13.9%	58.3%	7.19%	21.04%	23.6%
Richmond	11.4%	47.6%[4]	7.76%	21.33%	15.7%

Table 3.1.2

Estimates of numbers per borough* for smoking, overweight and obesity, alcohol use and physical activity, in adults, various years

Borough	**Smoking (2013, 18+)**	**Overweight or obese (2012, 16+)**	**Alcohol (2008–09, 16+, minus abstainers)**		**Physically inactive adults (2014, 16+)**
			Higher risk	**Increasing risk**	
ENGLAND	7,861,385	28,080,334	2,970,882	8,802,612	12,191,618
Croydon	48,227	182,202	19,658	52,959	75,111
Kingston	22,377	75,358	10,982	28,762	36,516
Merton	21,945	94,529	11,658	34,115	38,266
Richmond	17,086	73,124[5]	11,921	32,767	24,118

*Numbers in adults (assuming rates above apply to most recent populations, mid-2014 Office for National Statistics estimates)

[4] Local estimate produced by London Borough of Richmond upon Thames, 2015, Obesity Needs Assessment, suggests that this has fallen from 47.6 per cent in 2012 to 44.5 per cent.

[5] Given the London Borough of Richmond upon Thames' more recent update, there are an estimated 65,317 overweight or obese adults 16 and over, compared to 73,124 in 2012.

Health and behaviour

It is estimated that thousands of adults in our four south-west London boroughs could improve their lifestyle which would help them to live longer and healthier. The latest data suggests that:

- **the number of adults smoking ranges from 17,086 to 48,227**
- **between 73,124 and 182,202 adults are overweight or obese**
- **between 10,982 and 19,658 adults are drinking alcohol at high risk to their health, and a further 28,762 to 52,959 are drinking at increasing risk**
- **Finally, between 24,118 and 75,111 adults are physically inactive.**

Sources:

Infographic: www.hscic.gov.uk/searchcatalogue?productid=13888

Table 3.1.1

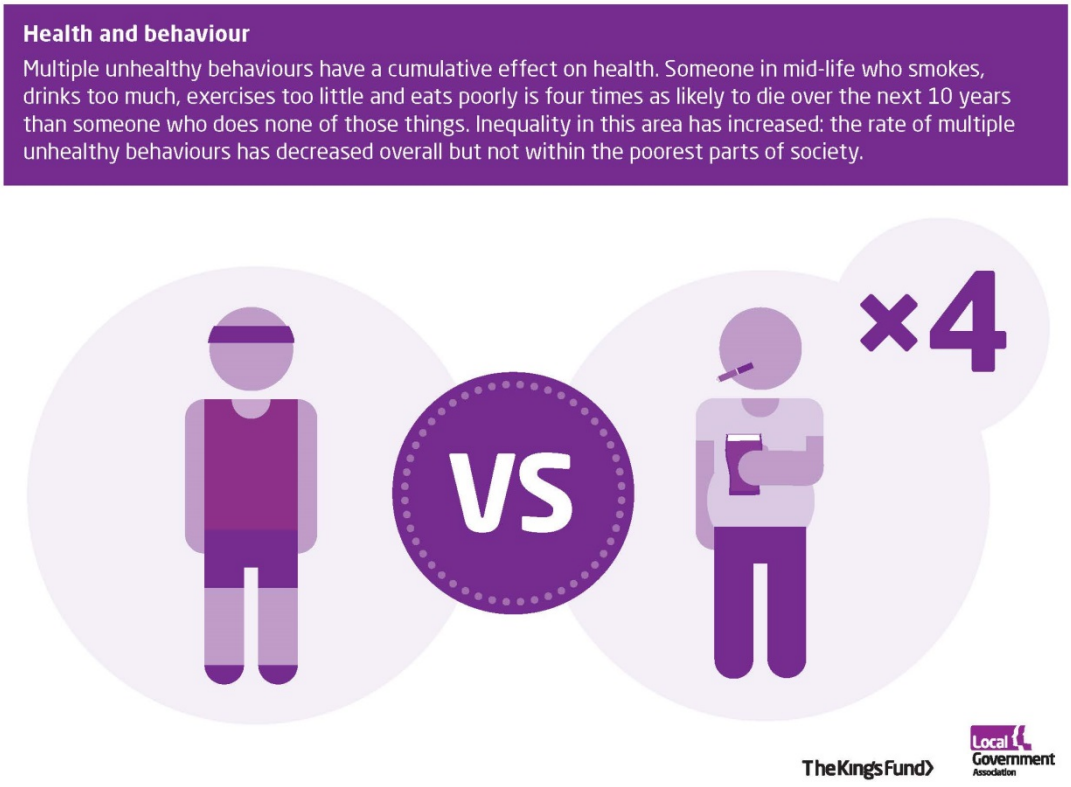
www.tobaccoprofiles.info/ and www.noo.org.uk/visualisation and www.lape.org.uk/data.html and www.phoutcomes.info/search/physical%20activity

Table 3.1.2

As Table 3.1.1 and

www.ons.gov.uk/ons/data/web/explorer/dataset-finder/-/q/dcDetails/Social/MYEDE?p_p_lifecycle=1&_FOFlow1_WAR_FOFlow1portlet_dataset_navigation=datasetCollectionDetails

3.2 Clustering of unhealthy behaviours in adults



This slide is based on analysis of data from the Health Survey for England, undertaken and published by The King's Fund at England level.

The dataset is too small to breakdown to borough level. However, a subsequent study *at London level*, in 40 deprived communities, has since been undertaken. This study looked at the relationship with work, which the study in the infographic did not. This could be relevant to the boroughs, particularly among their deprived populations.

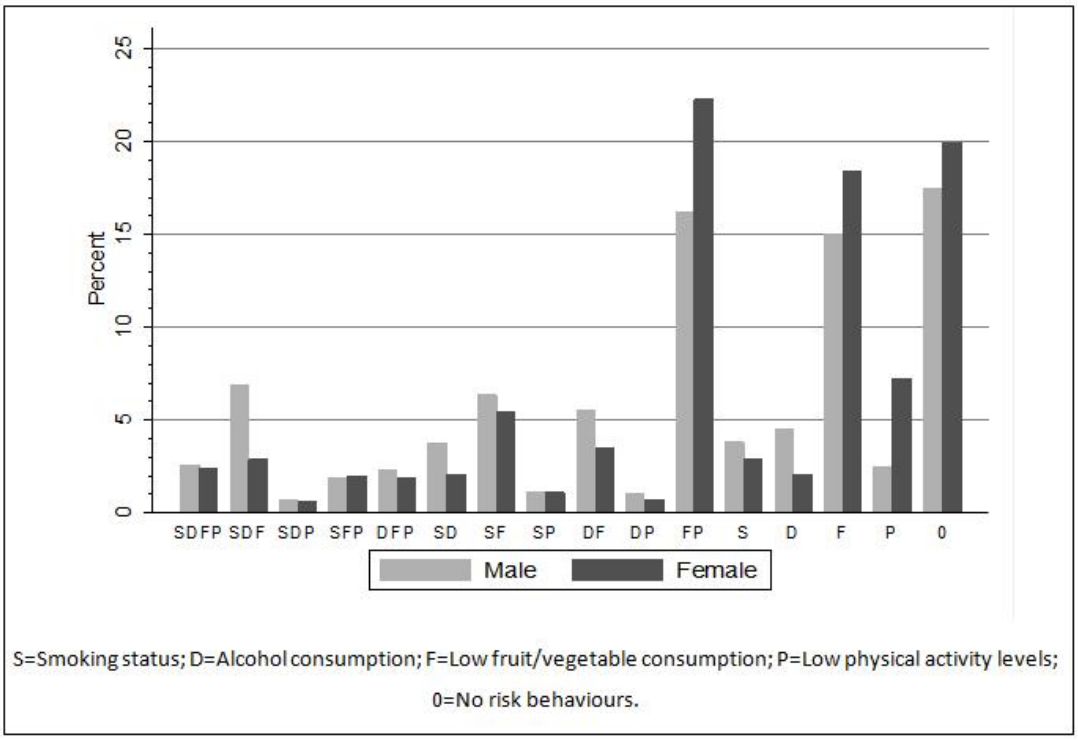
In brief:

'One of the starkest findings in this study is that people who report unable to work have more than three times higher odds of reporting a higher number of risk behaviours than those in full-time paid employment and more two and a half times the risk of belonging to the maximal behaviours class. Sixty-seven per cent of those unable to work, ill or disabled reported at least three risk behaviours. The latent class analyses also revealed that after adjusting for other sociodemographic factors, those who were not in employment were more likely to report a lifestyle characterised by high sedentary time, low levels of physical activity and low fruit and vegetable consumption.'

More detail is set out in Box 3.2.1.

Box 3.2.1

Combinations of clusters of behaviours in communities from 40 deprived areas of London



Multiple unhealthy behaviour

Multiple unhealthy behaviours have a cumulative effect on health. Someone in mid-life who smokes, drinks too much, exercises too little and eats poorly is four times as likely to die over the next 10 years as someone who does none of those things. Studies in deprived parts of London suggest that those who are unable to work, are ill or disabled are at particular risk. More than two-thirds of this group report reported at least three risk behaviours. We need to do more to help and support this group.

Sources:

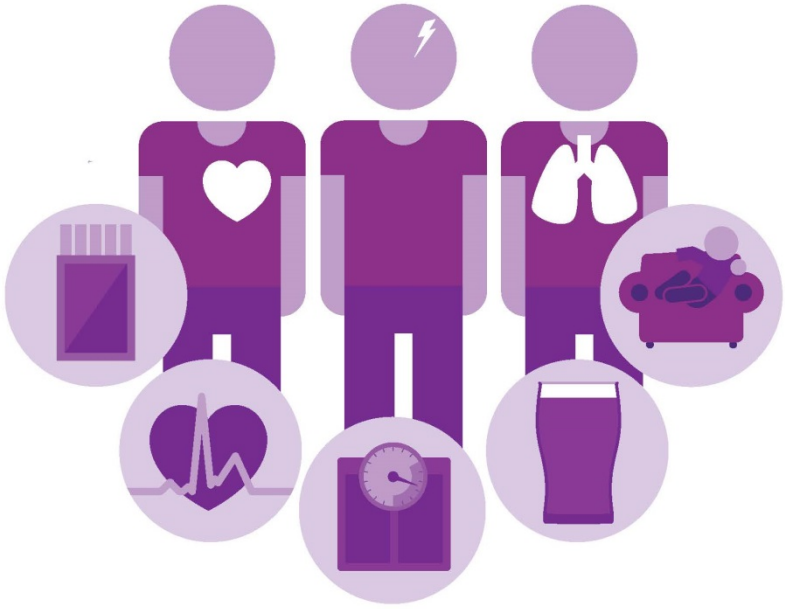
Infographic

http://www.kingsfund.org.uk/publications/clustering-unhealthy-behaviours-over-time

Box 3.2.1

http://jpubhealth.oxfordjournals.org/content/early/2015/03/11/pubmed.fdv028.full.pdf+html

3.3 Disability-adjusted life years, the main burdens



Health and behaviour

Forty per cent of the UK's overall disability-adjusted life years lost are caused by tobacco, high blood pressure, overweight and obesity and low physical activity (2010 figures). This is through their contribution to diseases such as heart disease, stroke and lung cancer.

40% of disability-adjusted life years lost

The King's Fund

Local Government Association

This context slide based is on the Global Burdens of Disease study that looked at the contribution to health (defined as disability-adjusted life years lost) of the main behavioural causes of health.

This is not directly translatable to borough level due to the methodology and different prevalences and age-structures. However, it is useful context. Both mental health and musculo-skeletal conditions tend to be under-acknowledged in debates and policies on health at national and local level. This slide's intention is to highlight this inbalance.

Disability-adjusted life years

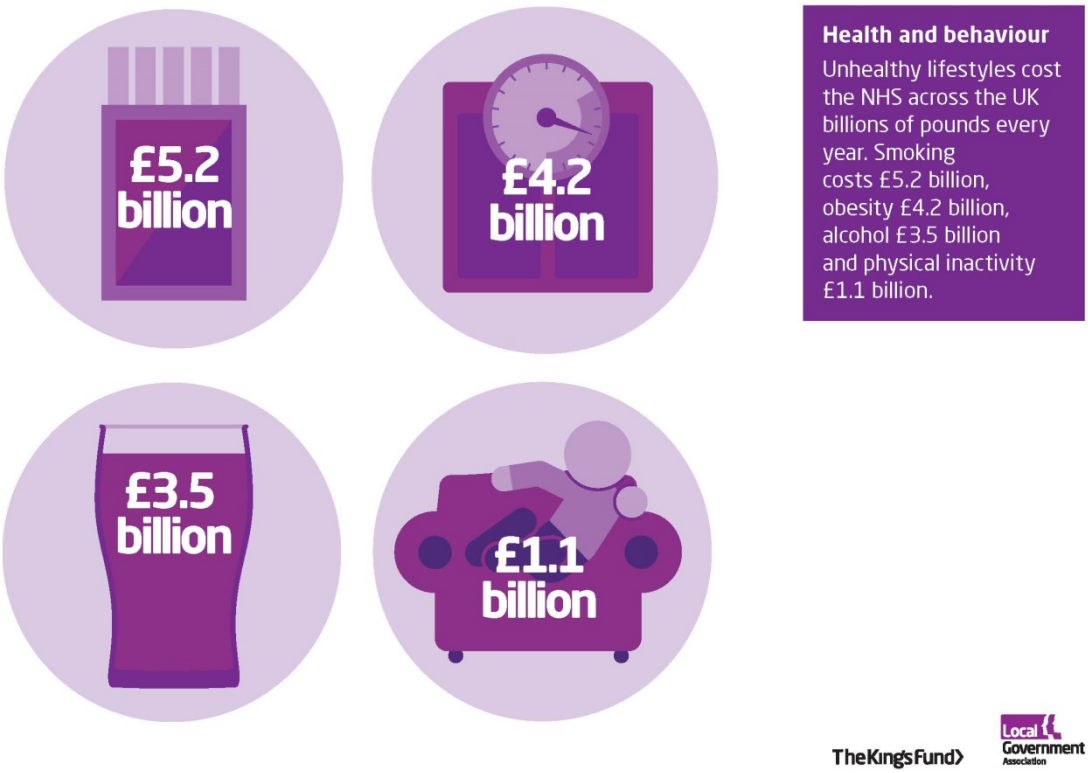
Forty per cent of the UK's overall disability-adjusted life years lost are caused by tobacco, high blood pressure, overweight and obesity, and low physical activity through their contribution to diseases such as heart disease, stroke and lung cancer.

Sources:

Infographics

www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60355-4/fulltext

3.4 Cost burden of health behaviours by borough



These are national figures on the cost burden of key behavioural risk factors. Each is taken from a different study, with different methodologies and timelines. These figures also relate only to the NHS costs of these behaviours, other studies include a wide range of costs to various other sectors.

Ideally, separate studies would be available at borough level. In the absence of these studies, it is possible to get a sense of what this means locally, by scaling down by population size in Table 3.4.1 (we have used adult population 16+ as the scalar) and further taking into account information on borough-level prevalence estimates, in Table 3.4.2.

Table 3.4.1

Cost-burden estimates of lifestyle burdens by borough, by scaling to 16+ England populations

Borough	**Smoking**	**Obese**	**Alcohol**	**Physical inactivity**
ENGLAND	£5.2 billion	£4.2 billion	£3.5 billion	£1.1 billion
Croydon	£34,664,373	£27,998,147	£23,331,790	£7,332,848
Kingston	£16,158,340	£13,050,967	£10,875,805	£3,418,110
Merton	£19,156,668	£15,472,693	£12,893,911	£4,052,372
Richmond	£18,149,821	£14,659,471	£12,216,226	£3,839,385

We can go a little further by scaling these costs 'again', this time to scale Table 3.4.1 to the prevalence figures in Table 3.1.2 (we used the higher risk numbers for alcohol in the scaling). This reduces the overall burdens for smoking, but has differential effects for the others – based on the scaling of their prevalence to the England average.

Table 3.4.2

Cost-burden estimates of lifestyle burdens by borough, by scaling to 16+ England populations and estimates of borough prevalence compared to England

Borough	**Smoking**	**Obese**	**Alcohol**	**Physical inactivity**
ENGLAND	£5.2 billion	£4.2 billion	£3.5 billion	£1.1 billion
Croydon	£32,026,866	£27,252,115	£23,158,961	£6,776,928
Kingston	£14,753,267	£11,271,289	£12,938,180	£3,294,713
Merton	£14,471,613	£14,138,840	£13,734,403	£3,452,562
Richmond	£11,244,998	£10,937,160	£14,044,135	£2,176,114

However, this induces additional assumptions that the 'burden' statistics in Table 3.1.2 are appropriate to the overall cost-burden calculations above.

All of these assume that unit costs of treatment (as well as other factors) are at England levels in the boroughs, so these are indicative figures only. In addition, the cost figures come from various years.

For this reason, it may be best either to leave this as a 'context slide', or to use the simplicity of 3.4.1, rather than a potentially more 'spuriously accurate' 3.4.2.

Cost of unhealthy lifestyles

Unhealthy lifestyles cost the NHS across the United Kingdom billions of pounds every year. Estimates for the four south-west London boroughs are hard to develop with accuracy but some figures suggest that smoking costs the NHS in these boroughs between £11 million and £32 million, obesity between £10 million and £27 million, alcohol between £12 million and £23 million and physical activity between £3 million £7 million every year.

Sources:

Infographic

www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_128209 and https://responsibilitydeal.dh.gov.uk/wp-content/uploads/2013/02/Generic-RD-Flyer-Final.pdf and Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, Mardell , Parry V (2007). *Tackling obesities: future choices – project report* (2nd ed). London: Foresight Programme, Government Office for Science and Allender S, Balakrishnan R, Scarborough P, Webster P, Rayner, M (2009). 'The burden of smoking-related ill health in the United Kingdom'. *Tobacco Control*, vol 18, pp 252–5.

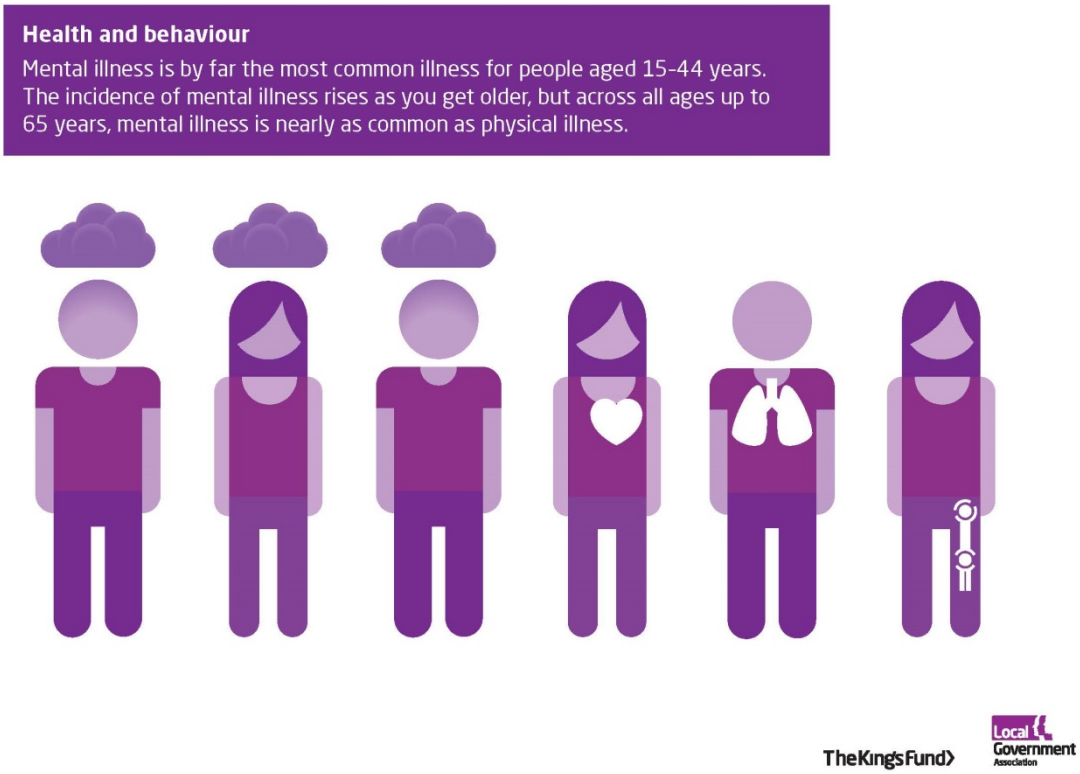
Table 3.4.1

As infographic plus The King's Fund analysis using population scalar: www.ons.gov.uk/ons/data/web/explorer/dataset-finder/-/q/dcDetails/Social/MYEDE?p_p_lifecycle=1&_FOFlow1_WAR_FOFlow1portlet_dataset_navigation=datasetCollectionDetails

Table 3.4.2

Table 3.2.1 plus source data underlying Table 3.1.2.

3.5 Mental illness prevalence



This slide is based on national studies, that do not contain data based on borough populations.

There are data on mental health prevalence by local authorities. The most useful source is Community Mental Health Profiles (data for 2014 has also been published for CCGs by Public Health England). For instance, this has data for the prevalence of diagnosed depression (it also has data on learning disabilities and dementia). Other sources of information include the Public Health Outcomes Framework on low wellbeing scores, suicides and various wider determinants of mental health and admissions rates, etc.

Table 3.5.1 combines some of this information.

Table 3.5.1

Mental health indicators by borough

Borough	Suicide (2011–13, per 100,000 age-standardised, all ages)	High anxiety (2013/14, adults 16+)	Diagnosed depression (2011/12, 18+)	Estimated % with common mental health disorder (2014/15, 16–74 yrs)
ENGLAND	8.8	20.0%	11.68%	15.6%
Croydon	6.2	21.9%	7.43%	15.9%
Kingston	7.0	21.3%	7.32%	15.6%
Merton	7.9[6]	21.3%	8.9%	16.1%
Richmond	6.4	18.7%	6.74%	15.8%

Mental health

Mental illness is by far the most common illness for people aged 15–44 and the incidence rises further with age. Latest data suggests that in the four south-west London boroughs between 18.7 and 21.9 per cent of adults had high anxiety and between 6.74 and 8.9 per cent were diagnosed with depression.

Source:

Infographics

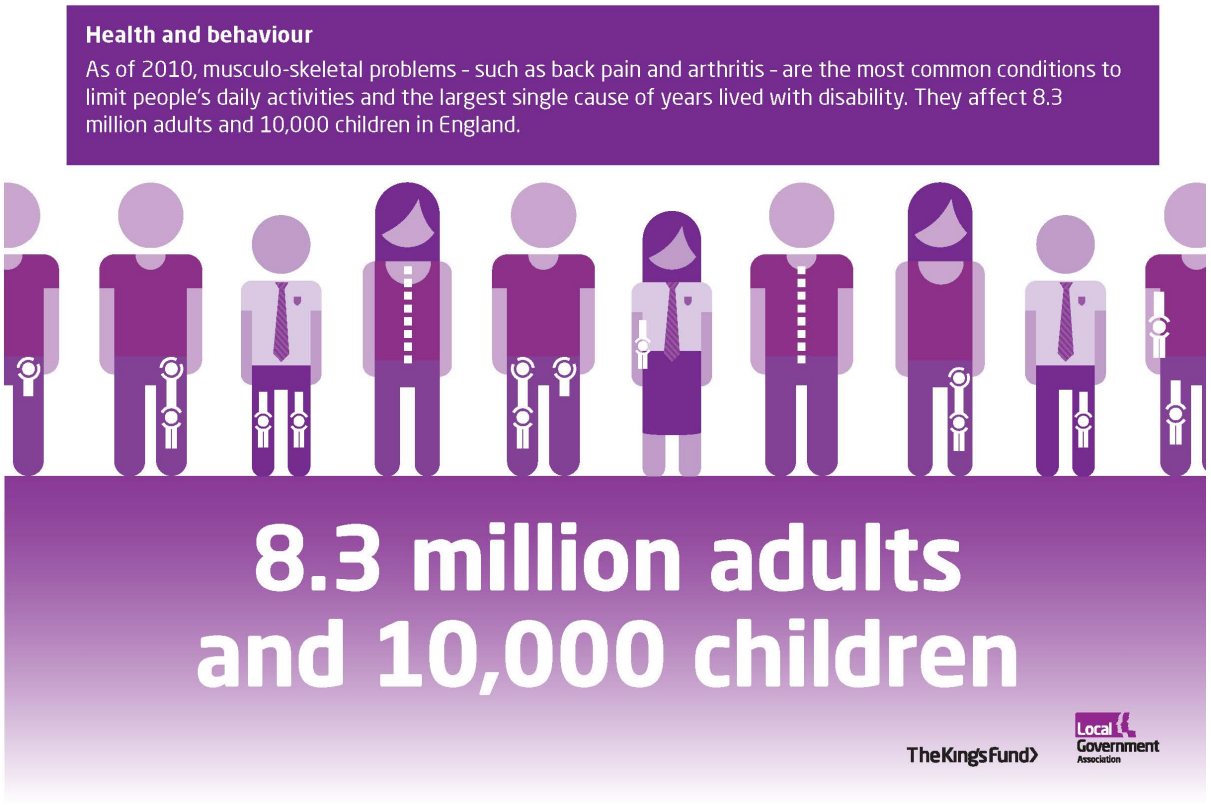
http://cep.lse.ac.uk/pubs/download/special/cepsp26.pdf and
www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60355-4/fulltext

Table 3.5.1

Derived from www.nepho.org.uk/cmhp/ and www.phoutcomes.info/ and
http://fingertips.phe.org.uk/search/common%20mental%20health%20disorder

[6] For Merton more recent data for 2013/14 suggests that suicide rates had fallen to 7.2 per 100,000.

3.6 The prevalence of musculo-skeletal problems



This data comes from national level studies. It is not possible to appropriately scale it to borough level. This information is therefore contextual. However, other data relevant to this is available locally – based on CCG boundaries – in the general practice profiles, as set out in Table 3.6.1.

Table 3.6.1

Example of musculo-skeletal problems by borough, against England

	Long-term back problem (2013/14, 18+)	Arthritis or long-term joint problem (2013/14, 18+)
ENGLAND	10.2%	13.2%
NHS Croydon	9.8%	10.2%
NHS Kingston	7.7%	9.1%
NHS Merton	9.2%	9.3%
NHS Richmond	8.7%	8.0%

Musculo-skeletal problems

As of 2010, musculo-skeletal problems, such as back pain and arthritis, are the most common conditions to limit people's daily activities and the largest single cause of years lived with disability. In 2013/14, across four south-west London boroughs, between 8.7 and 9.8 per cent of adults had long-term back problems and between 8 and 10.2 per cent had arthritis or long-term joint problems.

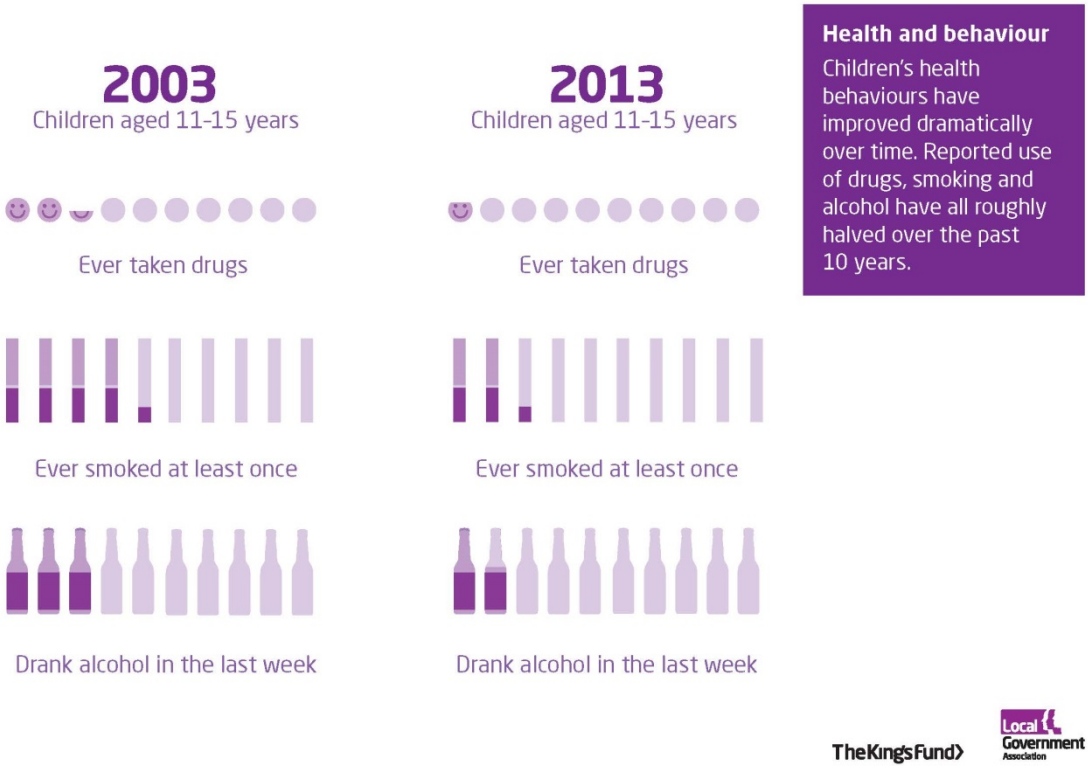
Sources:

Infographic: http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60355-4/fulltext and http://www.arthritiscare.org.uk/@2118/GetaGrip

Table 3.6.1

http://fingertips.phe.org.uk/profile/general-practice/data#mod,1,pyr,2014,pat,19,par,-,are,-,sid1,2000009,ind1,-,sid2,-,ind2,-

3.7 Children's lifestyle behaviours over time



This is derived from self-reported responses from the Health Survey for England. There are no national adminisitrative data that are collected at borough level.

It is likely that similar trends are experienced in the boroughs and there may be local health and lifestyle surveys of children in the boroughs that could provide similar data.

National information on the mental health of children is hard to come by and outdated. The last national survey of children and young people's mental health was undertaken in 2004. The government has recently announced a new survey, involving 9,500 children, their parents, carers and teachers. For the first time, this will gather information from the under 5s and from older adolescents, greatly improving our understanding of the needs of these groups. From this, estimates of how many children in the population are living with a mental disorder will be possible. It will also examine the issues that lead to mental ill health, like bullying or other social pressures.

While the national data needs to be updated we know from the earlier survey and other data that 1 in 10 children and young people aged 5–16 suffer from a diagnosable mental health disorder and between 1 in 12 and 1 in 15 children and young people deliberately self-harm. It is unlikely that this has improved dramatically. Other work by UNICEF, puts the United Kingdom in the middle of the pack (16th of 29 countries) on wider indicators of child wellbeing among rich countries, with the Netherlands and Scandinavian countries doing best.

Improvement in children's health behaviours

Children's health behaviours have improved dramatically over time. Reported use of drugs, smoking and alcohol have all roughly halved over the past 10 years. Around 1 in 10 young people have a diagnosable mental health disorder, the United Kingdom is in the middle of the pack among other rich countries in terms of indicators of wider child wellbeing.

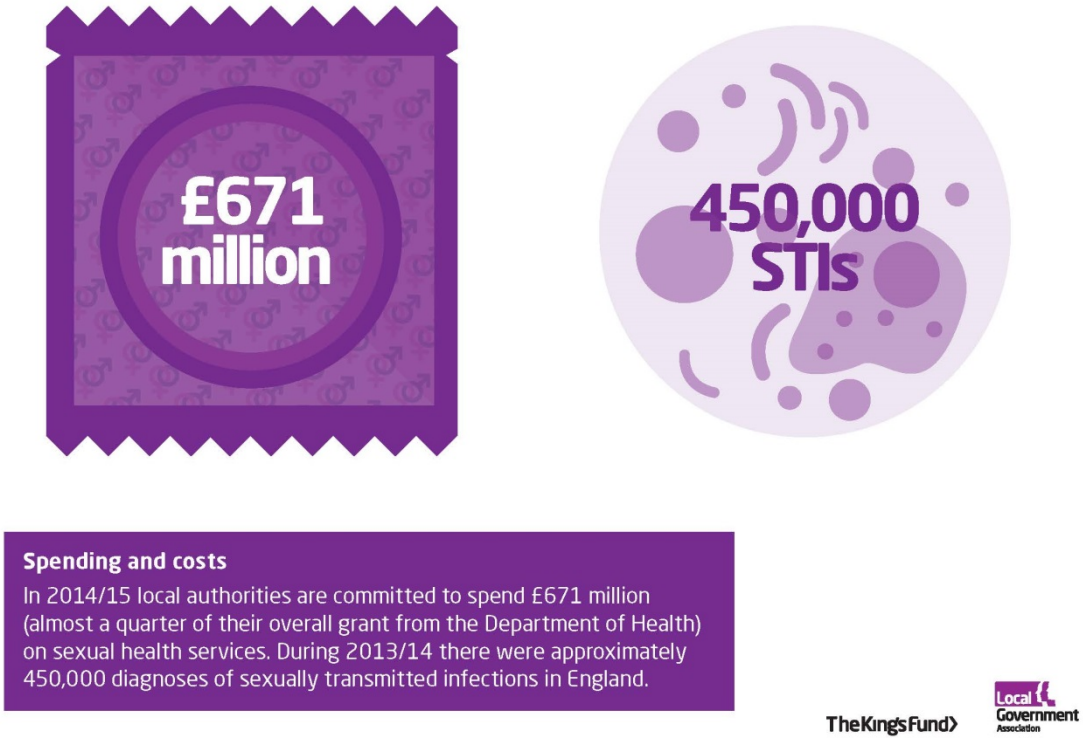
Sources: Infographic: www.hscic.gov.uk/searchcatalogue?productid=15144

Mental health

www.gov.uk/government/speeches/improving-children-and-young-peoples-mental-health-care and www.youngminds.org.uk/training_services/policy/mental_health_statistics and www.unicef-irc.org/publications/pdf/rc11_eng.pdf

4 Return on investment

4.1. Borough spend and activity on sexual health



The infographic is based on Health Protection Agency (now Public Health England) national data and national returns to the Department of Health on public health grant planned spend.

For the boroughs, we can look at returns to the Department of Health (summarised as part of the wider set of local authority figures by the Department of Communities and Local Government Association) on planned spending of the public health grant and its sexual health components (Table 4.1.1).

This data was correct at the time of writing this report as submitted by local authorities. However, this may differ from final out-turn spending data by local authorities.

Table 4.1.1

Sexual health spending and breakdown by type of spend 2014/15

	Spend sexual health services (2014/15)	**STI testing and treatment**	**Contraception**	**Advice**
England	£671,334,000	£383,482,000	£184,089,000	£103,763,000
Croydon	£6,406,073 (14/15 forecast outturn)	£4,323,532	£1,531,868	£54,000 (£61,115 health promotion + £412,626 – advice prevention)
Kingston	£3,343,000	£2,100,000	£489,000	£754,000
Merton	£3,018,000	£2,060,000	£601,340	£360,000
Richmond	£2,815,000	£159,000	£593,000	£2,063,000

Absolute numbers of new diagnoses of sexually transmitted infections by local authority are not published nationally, although rates are. The 'Sexual Health Balanced Scorecard' includes a rate for 'acute sexually transmitted infections diagnosis' for 2011 data, set out in Table 4.1.2 (this is not necessarily the equivalent of the 450,000 figure shown in the infographic above).

Table 4.1.2

Acute sexually transmitted disease infection diagnosis and rates of diagnosis of infection, 2011

	Acute sexually transmitted infections diagnosis (2011), count	**Acute sexual transmitted infections diagnosis (2011) per 100,000**
England	-	729.1
Croydon	4556	1318.4
Kingston	1531	906.2
Merton	2128 2088 (2012)	1019.2 1,048 (2014)
Richmond	1230	644.2

Table 4.1.3

New sexually transmitted infections (STI) diagnoses, 2014

All new STI diagnoses (excluding chlamydia aged <25)

	All new STI diagnoses (exc chlamydia aged <25) (2014), count	**All new STI diagnoses (exc chlamydia aged <25) (2014), per 100,000**
England	289,899	829
Croydon	3,279	1,321
Kingston	1,213	1,059
Merton	1,712	1,220
Richmond	1,094	863

Sexual health

In 2014/15 the four south-west London boroughs spent between £2 million and £6 million on sexual health services including advice, contraception and treatment. Data from 2011 shows that between 1,230 and 4,556 cases of acute sexually transmitted infections were diagnosed in the four south-west London boroughs and data from 2014 shows that between 1,094 and 3,279 new diagnoses of sexually transmitted infections (excluding chlamydia in those under 25) were diagnosed in the four south-west London boroughs.

Sources:

Infographics

www.hpa.org.uk/hpr/archives/2014/hpr2414_AA_stis.pdf and
www.gov.uk/government/uploads/system/uploads/attachment_data/file/335962/RA_Budget_2014-15_Statistical_Release.pdf

Table 4.1.1
www.gov.uk/government/uploads/system/uploads/attachment_data/file/365591/RA_2014-15_data_by_LA_-_Nat_Stats_Release_-_Revised_22-Oct-2014.xls
Table 4.1.2
www.apho.org.uk/addons/_118371/atlas.html
Table 4.1.3
http://fingertips.phe.org.uk/profile/sexualhealth

4.2 Example costs of health services

This slide is a context slide. The figures have been drawn from diverse sources, some from government administrative data and some from research studies. The administrative data could possibly be broken down further based on local reference costs (these would be A&E attendance and ambulance journey data). Other data is drawn from specific studies.

Spending and costs

The costs of health and care services are not widely known. Some costs can be avoided or reduced through cost-effective public health interventions.

Sources:

Infographics

www.pssru.ac.uk/pdf/uc/uc2010/uc2010_s10.pdf and www.pssru.ac.uk/project-pages/unit-costs/2013/ and www.gov.uk/government/uploads/system/uploads/attachment_data/file/261154/nhs_reference_costs_2012-13_acc.pdf

4.3 The return on investment for walking and cycling

Since The King's Fund-LGA infographics went to press, the Department of Transport published a large review of the economics of cycling and walking (in November 2014).

Cycling

A range of summary information on the return on investment of cycling is available in the above report – with breakdowns of the returns. The most significant is the monetary valuation of the health gains. Examples are given in Table 4.3.1 below, but there are others in the report – this requires Directors of Public Health to assess that which is most relevant to them.

Table 4.3.1

Annual values attributed to each additional cyclist, cycling regularly for one year (assumes 50 per cent of cycle trips replace a car trip)

Benefits (annual for each additional cyclist)	**Urban**			**Rural**	
	On-road	Percentage (on-road)	Off-road	On-road	Off-road
Value of loss of life	£408.67	68%	£408.67	£408.67	£408.67
NHS savings	£28.30	4.7%	£28.30	£28.30	£28.30
Productivity gains	£47.69	7.9%	£47.69	£47.69	£47.69
Pollution	£34.57	5.7%	£34.57	£6.49	£6.49
Congestion	£68.34	11%	£68.34	£34.42	£34.32
Ambience	£13.20	2.2%	£53.60	£13.20	£53.69
TOTAL	£601.06	100%	£641.46	£538.66	£479.06

Walking

A range of summary information on the return on investment for walking is available in the above Department of Transport review. More recently NICE has developed tools on how local areas can model the return on investment for interventions – including walking – to increase physical activity. This includes pre-populated data for local authorities. An example of the output for Croydon is given below in Table 4.3.2.

Running the NICE model for Croydon delivers the following results, based on a community walking intervention that reaches 2.5 per cent of adults. Given pre-populated data on population levels, effectiveness and costs for the intervention gives a total cost of £345,000 which delivers the following benefits over time:

Table 4.3.2

Return on investment for a community walking intervention that reaches 2.5 per cent of Croydon's adults

	2 years	**5 years**	**10 years**	**Lifetime**
Health gains				
QALYs	31	31	32	35
Societal perspective BCR				
Benefit-cost ratio (including all cost savings and the value of health gains)	3.39	5.61	8.84	9.07
Benefit-cost ratio (including all cost savings)	1.61	3.82	7.01	7.05
Health care perspective BCR				
Benefit-cost ratio (including health care cost savings and the value of health gains)	1.78	1.80	1.85	2.08
Benefit-cost ratio (including only health care cost savings)	0.00	0.01	0.02	0.06
Other sectors perspective				
Benefit-cost ratio (including only productivity gains)	1.16	2.75	5.05	5.05
Benefit-cost ratio (including only social care cost savings)	0.00	0.00	0.00	0.00
Benefit-cost ratio (including only transport benefits)	0.45	1.06	1.94	1.94

The NICE tool includes figures for other calculations including net present value. It also includes multiple interventions for cycling and walking for both children and adults, which can be analysed in combination – and for each borough.

Return on investment – transport

The costs to society of transport-induced poor air quality, ill-health and road accidents exceed £40 billion per year. The benefits of a year's cycling in an urban area are worth around £600 per year, of which about 70 per cent is from additional quality of life and the remainder saved costs to the NHS, pollution, congestion and improved productivity. Community walking groups have been estimated to return over £3 for every £1 invested over 2 years in places like Croydon. Most of these returns are based on improved quality of life and productivity.

Sources:

Infographic

http://webarchive.nationalarchives.gov.uk/+/http:/www.cabinetoffice.gov.uk/media/308292/urbantransportanalysis.pdf and www.erpho.org.uk/viewResource.aspx?id=21632 and www.apho.org.uk/resource/item.aspx?RID=91553

Table 4.3.1

www.gov.uk/government/uploads/system/uploads/attachment_data/file/371096/claiming_the_health_dividend.pdf

Table 4.3.2

The King's Fund analysis of www.nice.org.uk/about/what-we-do/into-practice/return-on-investment-tools/physical-activity-return-on-investment-tool and www.nice.org.uk/Media/Default/About/what-we-do/Into-practice/Return-on-Investment/NICE-return-on-investment-physical-activity-technical-report.pdf

4.4 The breakdown of costs related to unintended pregnancies

This information came from www.teenagepregancyassociates.co.uk. That link is now broken and the analysis is not available.

Several alternative sources exist on the allocation of the overall costs of teenage pregnancy, although most are based on US data.

For example, the National Campaign to Prevent Teen and Unplanned Pregnancy estimated the following for 2010, shown in Table 4.4.1. This is based on estimated costs for teen births (under the age of 20) and for the following 14 years.

Table 4.4.1

Teenage pregnancy costs to different sectors in the United States, 2010

	US, 2010	Percentage
Number of pregnancies	372,000	-
Average annual cost for first 15 years of life	$1,682	-
Total cost to taxpayers in 2010 (to age 15)	$9.4 billion	-
Total costs associated with teen mothers	$7.2 billion	
Of which public sector health care	$2.1 billion	29%
Of which child welfare	$3.1 billion	43%
Of which incarceration	$2 billion	28%

Clearly these costs are not directly translatable to England or the boroughs. However, the breakdown of costs may be indicative of where costs fall in the system.

More recently, research has been published by Development Economics for Brook (sexual health advice and services) and the FPA (sexual health charity), on the financial and economic impacts of unintended pregancy at all ages. This includes economic estimates of the NHS costs, wider public sector costs and potential loss of earnings and tax receipts associated with unintended pregancy and sexually transmitted infections.

The following costs (Table 4.4.2) assume trend rates in unintended pregnancies continue based on a baseline estimate of 450,000 unintended pregancies (across all age ranges) in the United Kingdom in 2011. The cost estimates are for cumulative costs between 2013 and 2020, although breakdowns by year are available. Further, different scenarios are available on the evolution of unintended pregnancy.

Table 4.4.2

Estimated costs of unintended pregnancies in the United Kingdom, cumulated 2013–2020

	NHS costs	Social welfare spending			Personal social services			Education	Child healthcare
		Min	Max	Mean	Min	Max	Mean		
2013-2020 cumulative	£5,294 million	£52,347 million	£66,995 million	£59,671	£5,764 million	£23,651 million	£14,705	£8,717 million	£2,264 million
Percentage*	5.8%	-	-	66%	-	-	16%	9.6%	2.5%

*Assumes mean costs for social welfare spending and personal social services spending.

The most informative way to look at this is the ratios, the relative costs of unintended pregancy to different budgets, rather than the absolute numbers.

These could be broken down per unintended pregnancy (by dividing by 450,000) or presented on an annual basis.

Return on investment – unintended pregnancies

There are estimated to be around 450,000 unintended pregnancies per year in the United Kingdom, across all age-ranges. These have been suggested to be associated with around £90 billion of costs over 7 years that otherwise wouldn't have been incurred, of which around 6 per cent fall on the NHS, 16 per cent on personal social services, 10 per cent on education and 2.5 per cent on childcare. However, around two-thirds of these costs are likely to be social welfare costs.

Sources:

Infographic

http://teenagepregnancyassociates.co.uk/tpa-evidence.pdf As set out above this link is now broken.

Table 4.4.1

https://thenationalcampaign.org/resource/counting-it-key-data-2013

Table 4.4.2

Derived from www.fpa.org.uk/sites/default/files/unprotected-nation-sexual-health-full-report.pdf

4.5 Breakdown of returns from a school-based smoking prevention intervention

The information above derives from a Canadian study translated into the English situation. The potential savings percentages, set out in Table 4.5.1, are derived from the source. The annual savings are based on a school-based smoking prevention programme of modest success.

These estimates are conservative and exclude disease-related costs from environmental tobacco smoke, property damage costs, the cost of creating separately ventilated public smoking areas, increased life insurance costs for smokers, the cost of deaths before age 45 and work lost during smoking breaks away from the workplace.

Table 4.5.1

Breakdown of returns in terms of annual savings of a school-based smoking prevention programme, Canada

	Annual savings (Canada, 1996)	Percentage
Direct costs		
Primary care	CAN$4	0.37%
Hospital visits	CAN$91	8.3%
Medication	CAN$2	0.18%
Indirect costs		
Sick days	CAN$543	50%
Early death	CAN$454	41%
TOTAL	CAN$1,094	

Return on investment – school-based interventions

School-based public health interventions can be good investments. For example, smoking prevention programmes in schools can return as much as £15 for every £1 spent. Most of these returns are in reduced sick days and productivity losses and the value of preventing early deaths, although there are also some savings in hospital visits, primary care and medication.

Sources:

Infographic and Table 4.5.1 (derived from)

www.ncbi.nlm.nih.gov/pubmed/11007656

4.6 Breakdown of returns from conduct disorder prevention

This data comes from a London School of Economics study on the economics of mental health promotion and prevention.

The median cost of an 8–12 week group-based parenting programme is estimated at £952 per family, while that of individual interventions is £2,078. Assuming 80 per cent of people receive group-based interventions and 20 per cent receive individual interventions, in line with NICE guidance, the average cost of the intervention works out at £1,177 per family. An important ingredient of success in the design and implementation of these programmes is maximising the engagement of 'at-risk' families, as there is evidence that some services suffer from low rates of take-up and high rates of drop-out.

Table 4.6.1 sets out the breakdown of returns.

Table 4.6.1

Gross pay-offs per child from parenting interventions at age 5 with conduct disorder (2008/09 prices)

	Age 6	**Age 7-15**	**Age 17+**	**Total**	**Percentage**
NHS	-£168	-£912	-£917	-£1,278	13.7%
Social services	-£24	-£29	-£14	-£67	0.7%
Education	-£132	-£304	£0	-£437	4.7%
Criminal justice	£0	£-1,247	-£340	-£1,588	17.1%
Public sector total	-£324	-£2,493	-£551	-£3,368	36.2%
Voluntary sector	-£3	-£6	-£5	-£15	0.2%
Victim costs (crime)	£0	-£3,361	-£810	-£4,171	44.9%
Lost output (crime)	£0	-£995	-£232	-£1,227	13.2%
Other crime costs	£0	-£377	-3129	-£506	5.4%
Other sector total	-£3	-£4,740	-£1,176	-£5,919	63.7%
TOTAL	£-328	-£7,223	-£1,727	-£9,288	100%

Table 4.6.1 shows that total gross savings over 25 years amount to £9,288 per child and thus exceed the average cost of the intervention by a factor of around 8 to 1. Savings to the public sector come to £3,368 per child, including £1,278 accruing to the NHS. Under the assumptions made, the intervention will provide a positive return to the public sector in year 8, and to the NHS in year 14, after the intervention.

No benefits are assumed from a range of other potential wider impacts such as improved employment prospects, reduced adult mental health issues, and improved outcomes for the child's family and peers; these are likely to be substantial, making the intervention an even better investment.

There are similar figures and analysis that could be presented from this study for the following:

- health visiting and reducing post-natal depression
- school-based social and emotional learning programmes to prevent conduct problems in childhood
- school-based interventions to reduce bullying
- early detection for psychosis
- early intervention for psychosis
- screening and brief intervention in primary care for alcohol misuse
- workplace screening for depression and anxiety disorders
- promoting wellbeing in the workplace
- debt and mental health
- population-level suicide awareness training and intervention
- bridge safety measures for suicide prevention
- collaborative care for depression in individuals with type II diabetes
- tackling medically unexplained symptoms
- befriending of older adults (see section 4.10).

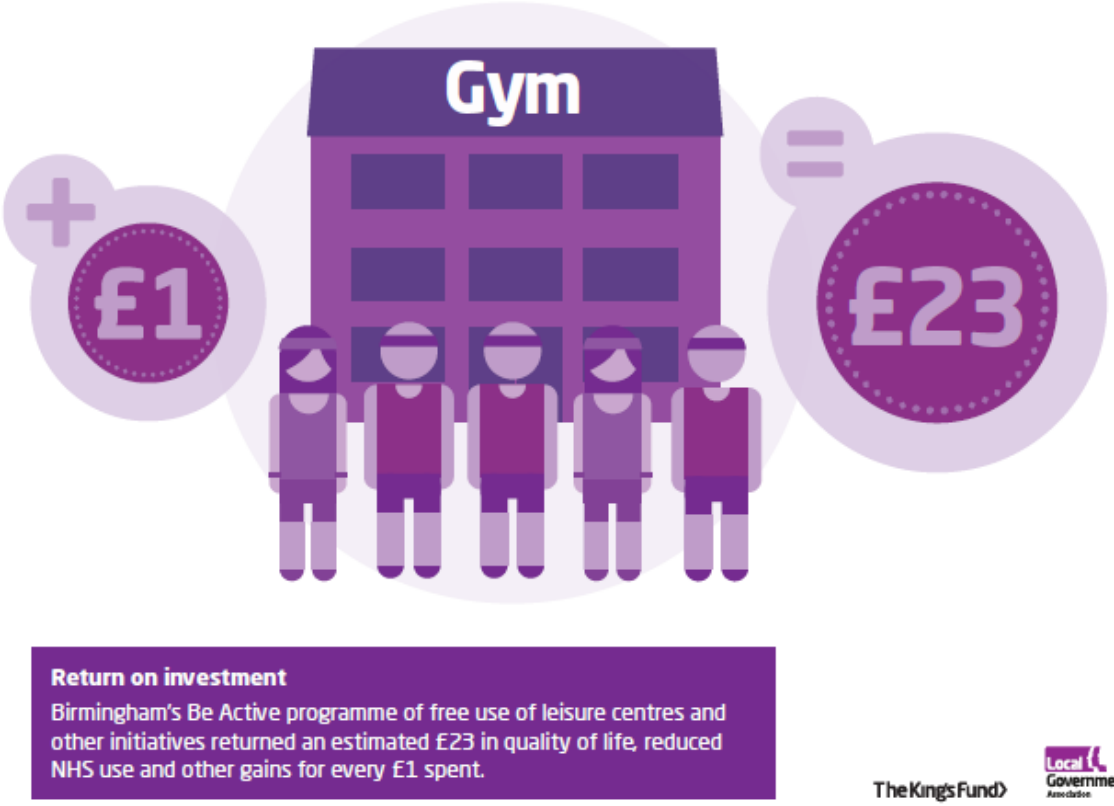
Return on investment – parenting programmes

Parenting programmes to prevent conduct disorder pay back £8 over six years for every £1 invested. The majority of these returns are in reductions in crime and its consequences to the victim and society, although almost 15 per cent are due to reduced NHS costs.

Sources:

Infographic and Table 4.6.1 (derived from)
www.lse.ac.uk/businessAndConsultancy/LSEEnterprise/pdf/PSSRUfeb2011.pdf

4.7 Breakdown of returns from large-scale community physical activity interventions



Be Active is a scheme provided free of charge to all Birmingham residents who live within the Birmingham City Council area. The aim of the scheme is to tackle health inequality and associated deprivation levels, by offering access to free physical activity sessions for all 1.1 million citizens of the city. Participants can take part in free swimming, exercise classes or the gym at any Council-run leisure centre during off-peak hours, which vary according to each centre, and some community based activities.

At the time of analysis, Be Active had 140,000+ active users per year. Table 4.7.1 shows the return breakdown per user. The scheme costs an estimated £34 per user per annum.

Table 4.7.1

Benefits and their distribution to various agencies from Be Active

Benefits per user	Total	Primary care	Secondary care	Local authority	HM Treasury	Employers
Realisable benefits	£365	£24	£45	£0	£45	£297
All cost savings (including realisable benefits) and productivity gains	£647	£125	£226	£0	£45	£297
QALYs gained	£2,713	£977	£1,736	£55	£0	£297
TOTAL	£3,361	£1,103	£1,961	£55	£45	£297
Percentage	100%	32.8%	58.3%	1.6%	1.4%	8.8%

The economic evaluation accrues the vast majority of the gains to the NHS, through the health benefits to the users. Box 4.6.1 shows the overall economic evaluation summary for Be Active

Box 4.7.1

Summary of economic evaluation of Be Active

Be Active represents an efficient use of public resources. It is estimated that Be Active has nearly 140,000 active users per year. Over five years, the aggregate cost is estimated at £22.0 million. The benefits generated by the scheme exceed its cost by £445.2 million. This net benefit includes "cash savings" (£28.7 million), cost savings and productivity gains to the public and private sector (£39.2 million), and improvements in quality of life (to the equivalent of £377.2 million).

When analysed per person, the benefits over the lifetime of an individual exceed the cost of the scheme by £3,202.7 per person.

Every £1 invested in Be Active generates on average £21.3 in benefits. The returns vary for the different stakeholders, depending on the amount of costs incurred and benefits received:

- For every £1 spent on Be Active the return for the local NHS is £22.8 in terms of health care related benefits (primary and secondary care). The majority of these benefits relate to health-related quality of life gains. A smaller amount relates to health care cost savings (£2.6) – £0.5 are estimated to be cashable as medication cost savings.
- For every £1 spent on Be Active the return for the Local Authority is £2.3 in terms of improvements in quality of life among its residents.
- Both employers and the Treasury benefits from the scheme without incurring in any cost.

The ***cost of Be Active per QALY*** gained is ***£1,164.6***. This estimate is far below the threshold used by NICE (£20,000) to decide investment in public health interventions, suggesting that Be Active represents an efficient use of resources.

These results are subject to some level of uncertainty given the nature of the data available. Despite this uncertainty, the estimates are conservative thus providing comfort in the conclusion of the analysis – i.e. that Be Active represents an efficient use of resources.

Return on investment – leisure services

Free access to council leisure services at off-peak times has been estimated to return £23 for every £1 invested. The majority of these gains are due to quality of life gains among residents.

Source:

Infographic, Table 4.7.1 (derived from) and Box 4.7.1 derived from www.optimitymatrix.com/wp-content/uploads/2013/09/28-Matrix_Be-Active_Final-report.pdf (the weblink has changed since this infographic was produced, although the source is the same).

4.8 Breakdown of return on investment for housing improvement

This infographic derives from a review of the economic impact of improving housing by the Housing Learning and Improvement Network (LIN) and, within that, a specific study from the Chartered Institute of Housing, which then referred back to a study by the Building Research Establishment (BRE).

Box 4.8.1 shows a summary from the Chartered Institute of Housing.

Box 4.8.1

Chartered Institute of Housing summary of BRE work on the economics of housing improvement

House Proud stats: health

Every £1 spent adapting 100,000 homes where a serious fall is otherwise likely to occur saves the NHS £69.37 over 10 years.

Every £1 spent improving 100,000 homes where residents are likely to require treatment due to excess cold saves the NHS £34.19 over 10 years.

Every £1 spent dealing with overcrowding in 100,000 homes where it is likely to lead to health problems saves the NHS £6.71 over 10 years.

Source: calculated using the Housing Health and Safety Rating System Costs Calculator by the Chartered Institute of Environmental Health and the Buildings Research Establishment, 2008

The Housing LIN piece includes multiple examples of economic returns to housing intervention and cites multiple sources. A large number of statistics on returns on investment are available from the Housing LIN.

The Building Research Establishment has produced a summary health impact assessment (HIA) of the impact of home improvement in 32 homes in Derbyshire. Derby City Council has facilitated housing improvements in Brindley Court, one of the poorer private sector housing blocks of flats in Derby. The quantitative HIA calculates the savings to the NHS and the wider society.

A summary of this is presented in Table 4.8.1.

Table 4.8.1

Average cost of works by hazard with estimated annual cost benefit and mean payback period to NHS and society, Derbyshire HIA of home improvements to 32 homes.

Hazard	Mean cost to repair	Mean NHS savings	Mean payback period to NHS	Mean savings to society	Mean payback to society
Damp and mould	£221	£68	8	£170	3
Excess cold	£1,249	£706	15	£1,764	6
Intruder entry	£500	£27	19	£68	8
Domestic hygiene and pests	£97	£1	97	£1	39
Food safety	£145	£1	17	£1	7
Personal hygiene and sanitation	£165	£111	1	£278	1
Falling on level surfaces	£110	£166	1	£415	0
Falling on stairs	£100	£13	8	£33	3
Falling between levels	£642	£40	27	£101	11
Electrical safety	£246	£13	123	£31	49
Fire	£176	£22	19	£56	8
Hot surfaces	£55	£3	18	£8	7
Structural collapse	£116	£4	29	£10	12

This analysis was undertaken with the BRE's Housing Health Cost Calculator (HHCC) which is available here, www.bre.co.uk/page.jsp?id=3021

Return on investment – housing

Housing interventions to keep people warm, safe and free from cold and damp are an efficient use of resources. Every £1 spent improving homes to reduce serious falls, excess cold and overcrowding returns £70, £34 and more than £6 respectively to the NHS in reduced demand and use over 10 years.

Sources:

Infographic

www.housinglin.org.uk/_library/Resources/Housing/Support_materials/Viewpoints/Viewpoint_21_Prevention_and_Early_intervention.pdf

Box 4.8.2

www.insidehousing.co.uk/analysis/in-depth/house-proud-health/6508221.article

Table 4.8.1

www.bre.co.uk/filelibrary/pdf/casestudies/Derby_retro_Final_report.pdf

4.9 Breakdown of the return on investment for reducing worklessness

The statistic on the cost to the economy of ill health and worklessness is from Dame Carol Black's review of the health of Britain's working age population. More details of where these costs fall are in Table 4.9.1

The return on investment statistics are from Business in the Community, detailed results are only available to members.

However, other similar studies exist and Table 4.9.2 outlines the results of a study by the Octavia Foundation.

Table 4.9.1

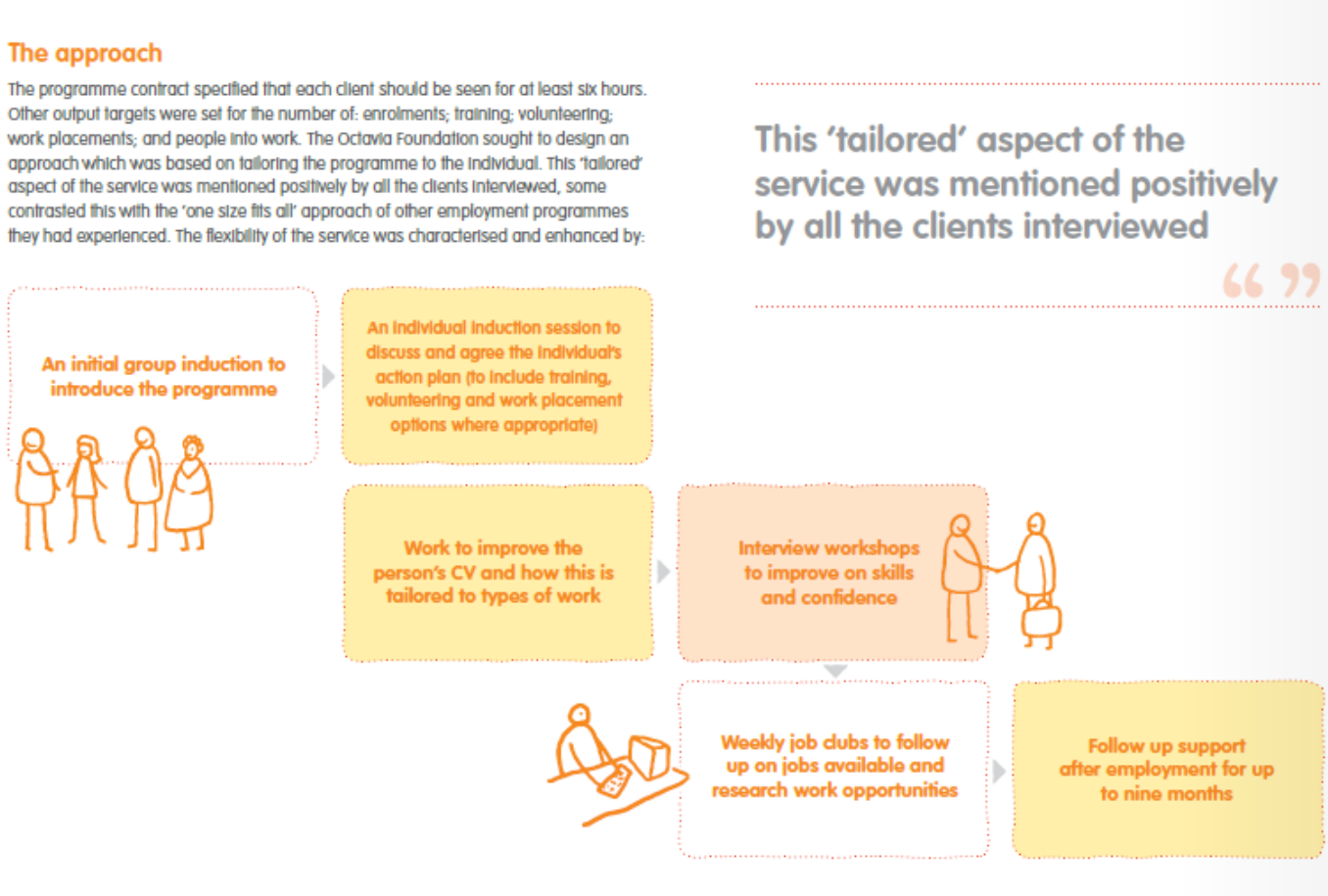
The costs of working age ill-health to the UK economy (2007)

Breakdown of the cost of working age ill-health to the UK economy	**2007 (£ billion)**
Worklessness – benefits	29
Health care	5-11
Foregone taxes	28–36
TOTAL GOVERNMENT	62–76
Worklessness – lost production	63
Sickness absence	10
Informal care	25–45
Health care	5–11
TOTAL ECONOMY	103–129

The Octavia Foundation's employment and training programme was part of a wider project involving other providers in Westminster. The programme was open to all Westminster residents of adult working age, who were unemployed (or working for less than 16 hours a week) and not in full-time education. Most referrals came from staff in community organisations including the Harrow Road Partnership, Kensington Volunteer Centre, and housing associations. A total of 188 people enrolled for the Octavia Foundation programme, 36 of whom were helped into work. A few self-referrals were also received. The intervention is set out in Box 4.9.1.

Box 4.9.1

The intervention of the Octavia Foundation programme on reducing worklessness



A social return on investment analysis was undertaken using the New Economics Foundation principles and based on the methods of Business in The Community. The overall cost of the programme was £96,931 which generates a social return of £399,357 over 5 years, a ratio of 4.12 to 1.

Table 4.9.2

Breakdown of returns to Octavia Foundation programme on reducing worklessness

Yr	No in work	Benefits saved (JSA & HB)	Part-time work 17% (-)	Income tax & NI 16% (+)	Health benefit	Drop off 50% from previous yr	Deadweight 15% discount	Attribution 20% discount	Net impact
1	14	£121,023	£20,574	£16,072	£7,112	-	£18,545	£24,726	£80,361
2	14	£126,162	£21,448	£16,754	£7,112	£40,181	£19,287	£25716	£123,758
3	8	£75,171	£12,779	£9,983	£4,064	£61,879	£11,466	£15,288	£111,564
4	-	-	-	-	-	£55,782	-	-	£55,782
5	-	-	-	-	-	£27,891	-	-	£27,891
TOTAL									**£399,357**

Return on investment – helping people back to work

Worklessness costs the economy more than £100 billion every year, including up to £11 billion to the NHS, up to £45 billion in informal care and £10 billion in sickness absence. Programmes getting long-term inactive people back to work have been shown to have returns worth over £4 for every £1 spent. These gains include the reduction in benefit payments, and the health improvements for those helped.

Sources:

Infographic and Table 4.9.1

www.gov.uk/government/publications/working-for-a-healthier-tomorrow-work-and-health-in-britain and www.bitc.org.uk/our-resources/report/social-return-investment-ready-work

Box 4.9.1 and Table 4.9.2

www.octaviafoundation.org.uk/assets/0000/1500/SROI_Report_Guardian_Version.pdf

4.10 Breakdown of return on investment for befriending programmes

This data comes from a London School of Economics study on the economics of mental health promotion and prevention.

The model looked at the cost-effectiveness of befriending interventions in terms of the education in depressive symptoms and the consequent decline in the use of health services by the recipient of the intervention. The intervention is assumed to be targeted at lonely and isolated individuals aged over 50. The analysis included costs/savings associated with the use of mental health services, primary care, hospital services and medication; home helps, but no other social care services, were included. The model did not factor in any benefits to the befriender.

The analysis suggested that the cost of befriending services of an hour per week or fortnight would be £85 per annum, reducing NHS costs by around £40 in year one through the reduction of treatment for depressive symptoms. If the analysis includes the quality of life benefits associated with reduced depressive symptoms, then befriending schemes have the potential to create further improvements worth £270 per person, an overall return of £3.65 for every £1 invested.

The authors conclude that befriending interventions – for the isolated older people – are therefore unlikely to achieve cost savings to the public purse, but they do improve an individual's quality of life at a low cost.

Return on investment – befriending

Social support plays an important role in increasing resilience to illness, helping recovery and improving wellbeing. Befriending can reduce NHS costs for those supported by around £40 per annum but, more importantly, improve quality of life associated with reduced depressive symptoms worth around £270 per person. Befriending interventions return more than £3 in value for every £1 spent and, while unlikely to achieve overall savings for the public purse, do improve quality of life at low cost.

Sources:

Infographic

www.lse.ac.uk/businessAndConsultancy/LSEEnterprise/pdf/PSSRUfeb2011.pdf

4.11 Breakdown of return on investment for motivational interviewing for alcohol and drug addiction

The immediate source for this infographic is an Alcohol Concern publication on the overall learning from its research activities, this then refers to a Department of Health publication, now in the National Archives, which refers to the primary source, the United Kingdom Alcohol Treatment Trial.

The intervention compared the impact of social behaviour and network therapy, a new treatment for alcohol problems, with that of motivational enhancement therapy. Both are forms of motivational support.

The intervention took place in seven treatment sites around Birmingham, Cardiff and Leeds and covered 742 clients with alcohol problems. Economic data were collected on quality-adjusted life years (QALYs), costs of trial treatments, and consequences for public sector resources (health care, other alcohol treatment, social services, and criminal justice services).

Table 4.11.1 outlines the distribution of the return on investment over a year based on costs before and after treatment. In practice the results are similar for both methods, so we present only the motivational enhancement therapy here; full details are available in the reference.

Table 4.11.1

Costs of public sector resources at 2000/01 prices, related to alcohol problems in cohort of 347 patients (who received motivational enhancement therapy). Cost per member of cohort.

Sector	**Cost difference between six months before randomisation and six months before follow-up**	**Percentage of cost reduction**
Health care	-£221	31%
Criminal justice	-£168	23%
Other alcohol treatment	-£316	44%
Social care	-£16	2%
TOTAL	-£722	100%
Cost of specialist alcohol treatment in the trial	£129	-
Ratio of cost reduction to costs of treatment	£5.6 to £1	-

Return on investment – alcohol motivational support

Every £1 spent on motivational interviewing and developing supportive networks for people with alcohol addiction returns more than £5 for every £1 spent to the public purse. Around 30 per cent of these returns come from reduction in NHS demand, 25 per cent from reductions in criminal justice costs, and 45 per cent from reductions in other alcohol treatment. There are also small reductions in social care costs.

Sources:

Infographics
The weblink has changed, although the source remains the same
https://www.alcoholconcern.org.uk/help-and-advice/publications/page/3/
Table 4.11.1 (derived from Table 3 in the following)
http://nrl.northumbria.ac.uk/3009/1/heather_Cost%20effectiveness%20of%20treatment%20for%20alcohol%20problems.pdf

4.12 Breakdown of return on investment for drug treatment

This infographic derives from the National Treatment Agency, the primary source of which is the Drug Treatment and Outcomes Trial (DTOR). There are complex analyses in the trial. Table 4.12.1 is a summary of the breakdown of the returns comprising the 2.5:1 overall return in the infographic.

Table 4.12.1

Costs, savings and value of QALYs gained from structured drug treatment over 51 weeks, 2006/07, in £s

Sector	Cost	Percentage
Cost of structured drug treatment	£4,531	-
Savings in health and social care	£1,686	14%
Savings in reported offences	£10,145	85%
Value of QALYs gained*	£125	1%
Total benefits	£11,956	100%
Benefit-cost ratio	2.64	-

* Based on 0.05 QALYs valued at £25,000 per QALY

Return on investment – drug treatment

Every £1 spent on drugs treatment saves society more than £2.50. Almost 15 per cent of these savings are due to reductions in health and social care costs whereas 85 per cent are due to reductions in offending.

Sources:

Infographics

www.nta.nhs.uk/uploads/vfm-crimepresentationvfinal.pdf

Table 4.12.1

Derived from www.dtors.org.uk/Content/PDF/DTORS_CostEffect_Main.pdf

5 Return on investment: further examples

The analysis of the boroughs' health and wellbeing board priorities showed significant differences across the boroughs (*see* annex). We therefore present three more return on investment analyses from a selection of those priorities.

5.1 Early years

Place2Be is a programme aimed at improving the emotional health of children in schools. The focus of this study is on the Place2Be's individual and group counselling as more robust outcome measures are available for these interventions.

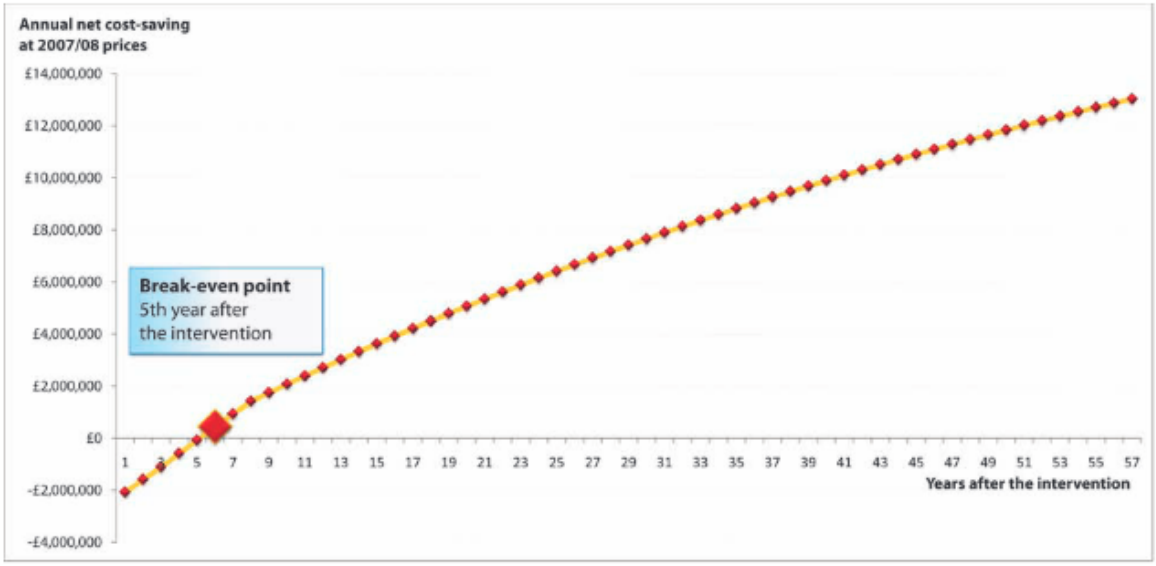
Results from the programme suggest that without it 50 per cent of these children's mental disorders and problems would have continued throughout childhood and 50 per cent would have persisted into adulthood and continued over the individual's lifetime.

At the time of the analysis there were Place2Be teams based in 172 primary and secondary schools across the United Kingdom, supporting 58,000 children up to the age of 13, often in areas of great deprivation. Services were available to children coping with a range of complex problems such as bereavement, family breakdown, alcohol and drug misuse, domestic violence, physical and emotional abuse, trauma and bullying.

Overall, in the year of this analysis, 2,344 children received support at a total cost of £2 million. The returns are based on modelled improvement in mental health and their consequences over time. The overall trajectory is given in Box 5.1.1.

Box 5.1.1

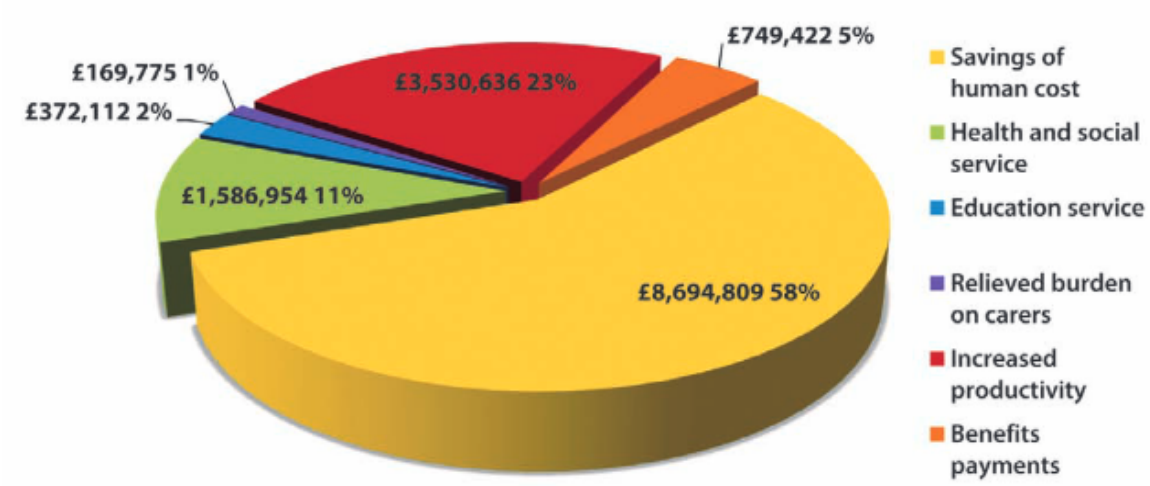
Breakeven point and annual net cost-saving of Place2Be over time, 2007/8 prices



Box 5.1.2 shows how the benefit over time breaks down. The total benefit is estimated at £15.1 million, a return of £7.50 for every £1 spent. Of this return the large majority (58 per cent) is in terms of the health benefits that accrue to the individual. NHS and social care save, around £370,000, benefit payments are reduced by around double this amount.

Box 5.1.2

The returns of Place2Be over time



Return on investment – improving mental health resilience

Interventions to improve mental health and resilience in schools can return more than £7 for every £1 spent over time, with most of this gain in terms of improved health, followed by increased productivity and reductions in NHS and social care use.

Sources:

Box 5.1.1 and Box 5.1.2
www.place2be.org.uk/media/1845/Cost%20Effective%20Positive%20Outcomes%20for%20Children%20and%20Families.pdf

5.2 Alcohol – return on investment for brief intervention

The information below is derived from a study by the London School of Economics.

Intervention is based on brief interventions in primary care settings which can reduce alcohol consumption by about 12 per cent per individual, achieved through universal screening by GPs followed by a 5-minute advice session for those who screen positive for harmful drinking. Table 5.2.1 below, the returns are based on using the Alcohol Use Disorders Identification Test (AUDIT) which, for a cohort of 1,000 patients, costs £17.41 per head.

Table 5.2.1 sets out the return on investment to brief intervention during GP consultation.

Table 5.2.1

Costs/pay-offs per head for screening and brief advice whilst attending GP consultation (2009/10 prices)

	Year 1	Years 2-5	Years 6-7	Total	Percentage of total
NHS	-£10.55	-£24.61	-£3.91	-£39.07	19%
Crime	-£28.49	-£66.02	-£10.49	-£105.00	51%
Productivity losses	-£16.20	-£38.24	-£6.05	-£60.48	30%
Total	-£55.23	-£128.87	-£20.45	-£204.55	100%

Given the overall cost per head of £17.41, the total returns are more than £3 to £1 in year one, rising to more than £11 to £1 over 7 years. Around 20 per cent of these returns flow to the NHS, 50 per cent to crime reduction and the remainder to reductions in productivity losses.

Return on investment – brief interventions in harmful drinking

Simple interventions with harmful drinkers in primary care are likely to payback £3 for every £1 in year 1, rising to more than £11 in the next seven years. Of this return, 20 per cent will be in reduced NHS costs, with the remainder being reductions in the cost of crime and productivity losses.

Sources:

Table 5.2.1

www.lse.ac.uk/businessAndConsultancy/LSEEnterprise/pdf/PSSRUfeb2011.pdf

5.3 20 mph speed zones

Traffic calming and speed limits are major public health strategies for further reducing road injuries, especially for vulnerable pedestrians such as children and older people. A cost-benefit analysis has recently been conducted on mandatory zones in local areas.

The analysis took into account medical costs saved, the value of human life saved and the value of lost output saved.

Intervention costs were taken directly from studies in London for 47 per cent of the 399 mandatory 20 mph zones that were constructed in London as of 2007/08. In low-casualty areas (mean, 0.62 casualties per km of road per year) average costs were £75,100; in high-casualty areas (mean, 1.6 casualties per km per year) average costs were £75,800.

The results suggest that, in low-casualty areas, traffic calming schemes do not cover their costs in terms of returns. In these areas, the net return in terms of the costs of reduced casualties was £49,700. In high-casualty areas it was £166,400, an overall return of £2.20 for every £1 spent; the returns flow over time with more than a third, 36 per cent, accruing in the first year.

The breakdown of these returns will be similar to that in Table 5.3.1, which is derived from the work for the Department of Transport above.

Table 5.3.1

Department of Transport assessment of the cost of road accident casualties, 2012

	Casualty-related			Accident-related			
	Lost output	Medical and ambulance	Human costs	Police costs	Insurance and admin	Damage to property	Total
Fatal	£1,040 million	£9 million	£2,042 million	£29 million	£1 million	£19 million	£3,139 million
Serious	£526 million	£315 million	£3,582 million	£44 million	£4 million	£108 million	£4,578 million
Slight	£389 million	£165 million	£1,854 million	£67 million	£15 million	£318 million	£2,871 million
All	£1,995 million	£490 million	£7,478 million	£139 million	£19 million	£508 million	£10,589 million
Damage only accidents	-	-	-	£77 million	£124 million	£4,332 million	£4,533 million
All	£1,995 million	£490 million	£7,478 million	£217 million	£143 million	£4,840 million	£15,122 million
Percentage of all	13%	3.2%	49%	1.4%	0.9%	32%	100%

Return on investment – 20mph zones

20 mph zones in high road traffic areas have the potential to return over £2 in value for every £1 spent and over a third of this return is likely to accrue in the first year. Around half of the return is in the prevention of death and trauma, followed by reductions in damage to property and lost productivity and medical and police costs.

Sources:

Return on investment calculation

http://jpubhealth.oxfordjournals.org/content/35/1/40.full.pdf+html

Table 5.3.1, derived from
www.gov.uk/government/uploads/system/uploads/attachment_data/file/254720/rrcgb-valuation-methodology.pdf

6 Commentary on findings and some recommendations

When the initial report (sections 2, 3, 4 and 5) was first received, it generated considerable discussion and raised a number of questions about approach and methodologies and particularly about the apparent paucity of material on return on investment to social care. This section explores these issues further.

6.1 Commentary

The breakdowns of findings include a varied array of specifications of 'return on investment'. Box 6.1.1 stylistically summarises this array of different methodologies. First, it is important to say there is no 'correct' way to identify and report on return on investment. Many choices are possible, what is important is that there is explicitness about what is included, and what is not.

Box 6.1.1

Choices in estimating return on investment to public health

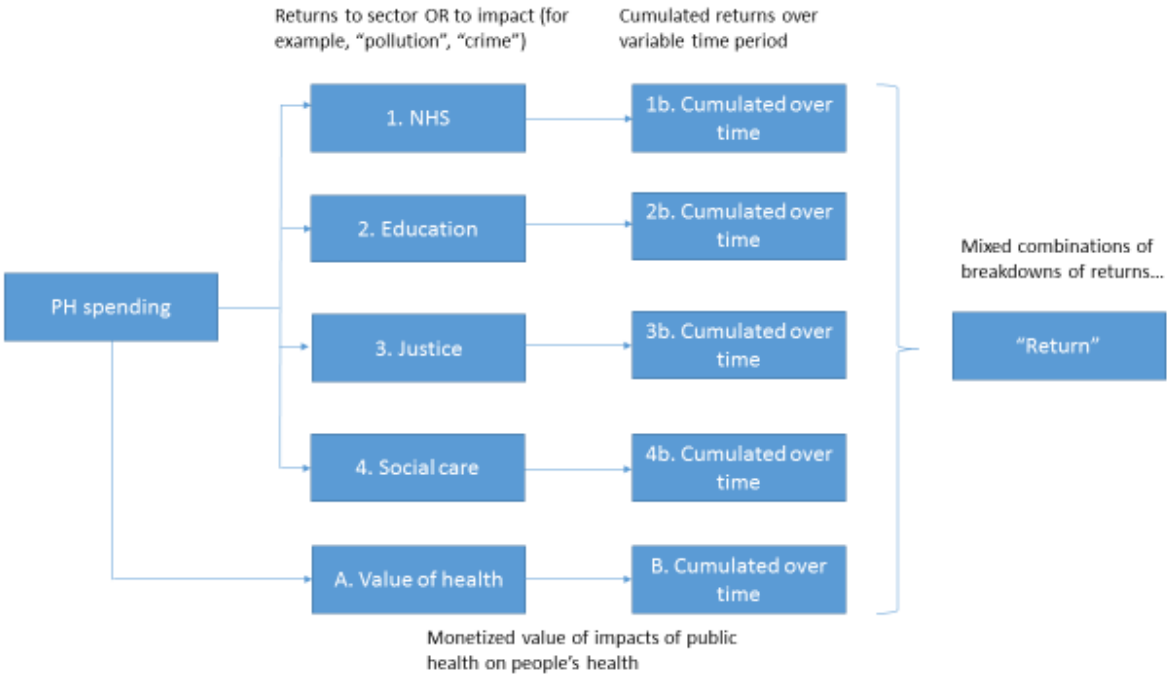


Table 6.1.1

Breakdown and inclusion of social care in public health return on investment (ROI) topics

Section	Topic*	Summary ROI	Breakdown	Social care
4.1	Sexual health spending	n.a.	n.a.	n.a.
4.2	Costs of health services	n.a.	n.a.	n.a.
4.3	ROI cycling & walking			
	Cycling	Value of each additional cyclist for 1 yr = £600	68% value of health; 4.7% NHS savings; 8% productivity; 6% pollution; 11% congestion; 2% ambience.	Not included
	Walking	3:1 (yr1) to 9:1 (lifetime) for community walking groups	9:1 (all costs savings + value of health) 7:1 (all cost savings) 5:1 (productivity gains) 0.06:1 (health care cost savings)	Not included
3.4	ROI unintended pregnancy	Cumulated UK 7 year costs of 1 year's unintended pregnancy = £90 billion	NHS costs 5.8%; social welfare spending; 16% personal social services; education 10%; child healthcare 2.5%	16% of overall costs (≈ £14.7 billion) plus given transfer of responsibilities a part of 2.5% (≈ £2.2 billion)
4.5	ROI school-based smoking cessation	Annual savings of moderately effective programme 15: 1	Primary care 0.5%; hospital visits 8%; medication <0.5%; sick days (productivity) 50%; value of health (avoided early death) 41%	Not included
4.6	ROI conduct disorder prevention	Parenting interventions at age 5 (over 25 years) 8:1	NHS 14%; social services ≈1%; education 5%; criminal justice 17%; vol sector <0.5%; victim costs (crime) 45%; lost output (crime) 13%; other crime costs 5%	≈1%, £67 per child (intervened with)
4.7	ROI large-scale physical activity intervention	BeActive scheme, free and discounted use of leisure services 21:1	Primary care 33%; Secondary care 58%; LA 2%; HMT 1.5%; employers 9%	≈ 2% (£55 per person) but unclear whether this is solely social care
4.8	ROI housing improvement	Every £1 spent on housing improvement to reduce falls, excess cold and overcrowding £70; £34 and £6 to the NHS	Payback to NHS and 'wider society' for 13 categories of housing	Not included (explicitly, maybe in

Section	Topic*	Summary ROI	Breakdown	Social care
		over 10 years	hazard e.g. damp and mould, falls, electrical safety.	wider 'payback to society')
4.9	ROI worklessness	4:1 ROI from worklessness reduction programmes	Prime effects through NHS and benefits payments saved, complex analysis means specific breakdown hard.	Not included
4.10	ROI befriending	3.65:1 benefits overall for every £1 spent	Inc, mental health services, primary care, medications, hospital services and 'home helps' plus quality of life benefits. Latter account for 87% of returns.	Not included (explicitly, maybe in 'home helps').
4.11	ROI motivational interviewing drugs/alcohol	5:1 returns for every £1 spent	31% healthcare; 23% criminal justice; 44% other alcohol treatment avoided; 2% social care	≈ 2% social care (£16 per person).
4.12	ROI drug treatment	2.5:1 returns for every £1 spent	14% health and social care;	14% (£1,686) but in 'health and social care', not unpacked.
5.1	Early years emotional support in schools	7.5:1 over the lifetime (60 years post-intervention)	58% value of health benefits; productivity 23%l 11% health and social care; benefits 5%; education 2%; carer burden 1%	11% (£1.5 billion) in 'health and social care', not unpacked.
5.2	Brief intervention for alcohol	3:1 in year one, rising to 11:1 over 7 years.	19% NHS; 51% crime; 30% productivity	Not included
5.3	20mph speed zones	In high casualty area 2.2:1 (in low casualty areas <1:1)	13% productivity; 3% medical and ambulance' 49% value of health/life; 1% police; 1% insurance; 32% property damage	Not included

Box 6.1.1 shows that the main choices are what sectors to include in terms of the impacts of public health investment. Included in the box are the main government sectors from Table 6.1.1. In some cases, however, the returns are defined differently, for example in terms of category of 'harm' such as congestion, pollution or property damage (see Table 6.1.1), and in some cases there is a mix. Often productivity is included (in terms of the value of lost output to the economy) and in many 'value of life' is important, ie, the monetised value of health improvement, usually to the person receiving the public health intervention. Often value of life, when included, is the largest single source of return on investment, so it is important to be aware of whether this is in the figures or not. Finally, some studies include returns over a specific short time-period (usually the year in which the intervention took place), but many include longer-term benefits and returns (and sometimes costs) and cumulate the returns over a longer period.

In a final step, a bespoke combination of various returns (often combining actual cost savings and a monetised abstract value of health) is related to the public health cost of intervention in a statement such as 'the return on investment over 5 years is 2.5:1'. Sometimes, the metric is different, for example, 'getting one extra person to cycle returns £600'.

6.2 Recommendations

The process of unpacking the returns shows how varied and non-standardised the approaches are to reporting on return on investment. On the one hand, most studies do include various measures of the impact to the NHS. This is very useful and helps Directors of Public Health in conversations with CCG and local authority colleagues around budget pooling, budget sharing and generally making the case for a greater contribution from the NHS for services, or at least a greater recognition of the impact of local authority actions on NHS demand and costs.

However, there are some issues with the methodologies used in many studies that could be addressed, with the explicit support and action of influential agencies such as Public Health England and, in the longer term, the National Institute for Health Research (NIHR) and NICE.

Recommendation 1: More standardisation of inclusion and reporting criteria for return on investment studies

One of the obvious issues is a lack of standardisation of inclusion criteria and reporting of return on investment studies. Without this, it makes it very hard for Directors of Public Health to be able to compare across competing interventions for funds. While there will always be a good case for studies in specific areas to include bespoke returns, Public Health England (with NICE and NIHR in their own work and commissioning of studies) should develop standardised minimum inclusion and reporting criteria for return on investment studies.

Recommendation 2: A greater explicit recognition and accounting for the links between public health and social care

One of the key issues is the lack of information on the impact of public health interventions on social care.

This is due to a number of factors including the following.

- The research question addressed in this report. This is framed around unpacking existing studies of public health return on investment into the constituent parts whatever their source, rather than asking more specific questions such as, '*Q1: Which public health interventions have demonstrated a return on investment through reducing demand on social care?*' or '*Q2: What modelling would be required to demonstrate the returns to public health intervention in terms of reduced social care demand and costs?*'.

- The types of public health intervention in the set of studies assessed in the findings document. For example, it is unlikely that cycling or walking interventions would have a direct impact on social care costs (except potentially in the very long term).

- Exclusion when social care is clearly relevant. In some cases social care costs have been excluded when they are clearly relevant in terms of a comprehensive assessment of return on investment. For example, BRE's tool on the return on investment of housing improvement focusses on NHS costs (see table 6.1.1) rather than including social care.

- Undercounting of social care impact where assessed. For example, social care is only assessed as around 2 per cent of the returns in terms of motivational interviewing for drug and alcohol treatment and 1 per cent in terms of intervention for conduct disorder (Table 6.1.1). The latter in particular is clearly an undercounting.

- Lack of unpacking between NHS and social care impact. Some studies bundle NHS (or healthcare) and social care returns together. An example is the return on investment of drug treatment and befriending (Table 6.1.1). These studies should report them separately.

- Inclusion in wider categories of return. Beyond the NHS, social care may be included in some of the return on investment figures but it is unclear due to the wide categories reported.

These factors could be addressed as part of guidance (including forming parts of tender criteria for return on investment studies) issued under recommendation 1.

Recommendation 3: Public Health England should include social care costs as a core (where relevant) in its future work on the return on investment of public health

There is 'evidence of absence' in terms of the wider effects of public health intervention on social care demand and costs (see the evidence for this in annex 1). This is reflected in the analysis above, and more widely (for example the LGA's recent publication on obesity and its impacts on social care makes a strong case for impact, but is unable to quote any direct studies that have quantified it.[7])

Public Health England has recently advertised and subsequently recruited for a 'health economics framework' to select a range of consultancy (and other) organisations to offer health economics and return on investment services on an ongoing basis. This is an ideal opportunity to follow through on the above recommendations across its use of this framework, and to commission a specific piece of

[7] See www.local.gov.uk/documents/10180/11463/Social+care+and+obesity+-+a+discussion+paper+-+file+1/3fc07c39-27b4-4534-a81b-93aa6b8426af

work on '*Q2: What modelling would be required to demonstrate the returns to public health intervention in terms of reduced social care demand and costs?'.*

6.3 Social care

A brief (and unsystematic) search for relevant terms shows how rare published studies are that do include social care in their return on investment information. Searching Pubmed indexed terms for 'public health/economics' and 'social care costs' returned no hits, searching Google Scholar for 'return on investment public health' (free text) with 'social care' (exact phrase) also returned no hits. Searching for 'public health' and 'return on investment' and 'social care' in the Health Economics Evaluation Database (HEED)[8] returned three hits, one an abstract of a conference paper, one a QALY government review of the cost–benefit analysis of drug treatment services and the final hit a review of the economics of early intervention (Box 6.3.1).

Box 6.3.1

The economics of early education – abstract


Standard Article

Economics of Early Education

W. Steven Barnett

Published Online: 15 MAY 2015

DOI: 10.1002/9781118900772.etrds0092

Book Title

Emerging Trends in the Social and Behavioral Sciences: An Interdisciplinary, Searchable, and Linkable Resource

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Abstract

Economic research has established that public investments in early childhood programs providing education can yield high rates of return. A substantial portion of these returns are spillover effects that benefit society generally but not the child and family creating a classic instance of market failure. Benefits include improvements in school progress and achievement, health and health behaviors, social behavior, and employment and earnings for children and improvements in maternal employment and career paths. The weight of the evidence indicates that disadvantaged children benefit more than others. While programs can produce benefits from increased maternal employment (child care function) as well as from improved child development (education function), child development benefits look to be the larger part of the potential gain. Studies of large-scale public policies and programs find much smaller benefits indicating that there may be substantial government failure in putting this knowledge into practice. One point that is immediately obvious is that public programs often fail to replicate the successful programs from research because government funds them inadequately. However, this is not the only problem as the costs and benefits of programs depend on the details of policy and program design and implementation. These details are not all well understood. Recent research has provided some insights, but has by no means answered all the key questions definitively. Key issues for further research include the advantages and disadvantages of means-tested v. universal programs, and the nature and size of investments that are most productive at each age.

Keywords:
early education; economic returns to early education; cost–benefit analysis; child care; early intervention; child development; long-term effects of preschool

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A broader search in Google Scholar with 'return on investment public health social care' (free text) returned thousands of hits, but with very little precision. One relevant study (NICE's conceptual report assessing methods for economic evaluation of public health[9]) did refer to a review undertaken by Matrix of perspective adopted and costs included in economic evaluations of public

[8] http://onlinelibrary.wiley.com/book/10.1002/9780470510933?

[9] www.nice.org.uk/media/default/About/what-we-do/NICE-guidance/NICE-guidelines/Public-health-guidelines/Additional-publications/Cost-impact-proof-of-concept.pdf

health interventions,[10] which in return refers to the source[11] – research for the Public Health Research Consortium of the challenges of applying standard economic evaluation methodology to public health. This included a review of economic evaluation studies in public health and the perspectives included. A summary of this is set out in Table 6.3.1 showing that, out of 154 included studies, all included health care costs but only six studies included social care (4 per cent).

Table 6.3.1

Perspectives adopted and costs included in economic evaluations of public health interventions

Types of costs	Number	%
Health care	154	100
Productivity losses	23	15
Out of pocket	14	9
Social care	6	4
Criminal justice	6	4
Voluntary	5	3
Education	4	3
Law enforcement	4	3
Private	3	2
Housing	3	2
Employment	2	1
Environment	1	1
Transport	1	1

6.4 Conclusion

There is a large amount of material available that can inform Directors of Public Health on the likely return on investment of their activity. The findings document summarises, tailors and unpacks some of that information for Directors of Public Health of the four SW London boroughs of Croydon, Kingston, Merton and Richmond.

However, there are some key weaknesses in what is currently available including minimum standards of inclusion and reporting criteria, and lack of evidence on the links between public health investment and social care costs and impact. Public Health England (and NICE and NIHR) can do things to address these issues, and we make recommendations to that effect.

[10] This review is stated to be on NICE's website, but seems no longer available there.
[11] http://phrc.lshtm.ac.uk/project_2005-2011_d105.html

Annex

Analysis of LGA database of four boroughs' priorities

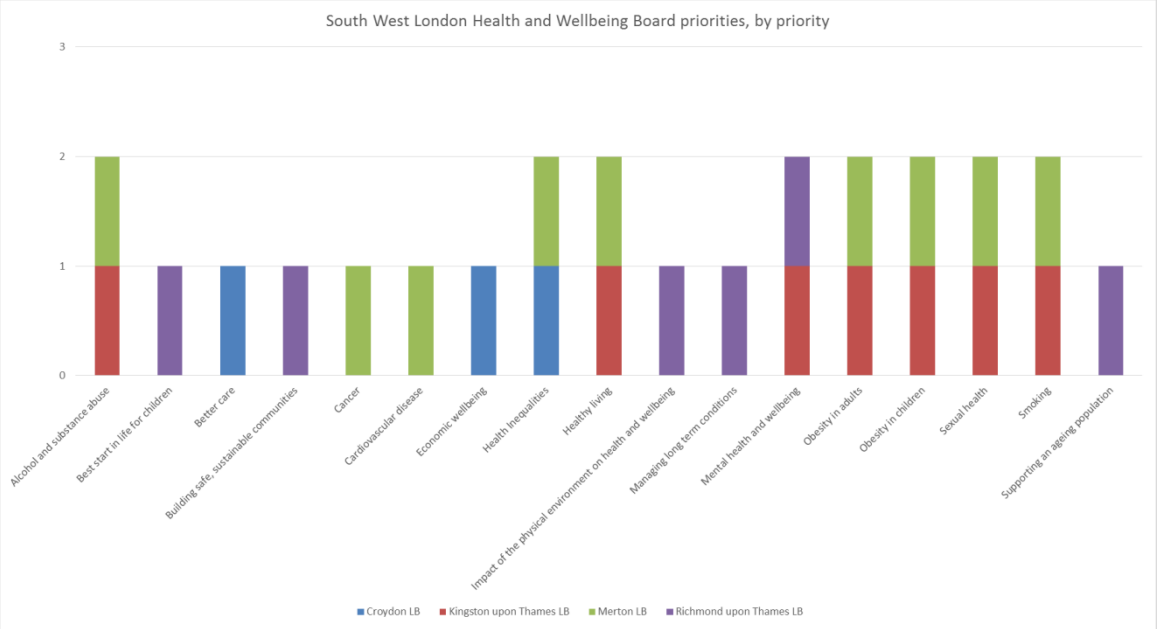
The LGA's database (http://www.local.gov.uk/health-and-wellbeing-boards/-/journal_content/56/10180/6111055/ARTICLE) summaries England's health and wellbeing board priorities into 30 different categories. Analysis of the four local authorities in the database is presented in Figures A1 and A2, which shows the LGA's judgement on their priorities from among this set.

Figure A1

Health and wellbeing board priorities by borough

Figure A2

Health and wellbeing board priorities by number of common priorities



Our interpretation of this is as follows:

1. There is a wide diversity in priorities across the health and wellbeing boards, with Merton having the highest number of priorities (9) and Croydon the fewest' (3).

2. There is a wide diversity in the expressed priorities with no single priority represented across all boroughs. No single priority is shared by all four boroughs. Kingston and Merton share alcohol and substance abuse, healthy living, obesity (in adults and children) and smoking in common.

3. The most common priorities are shared by combinations of two boroughs. These priorities are: alcohol and substance abuse, health inequalities, healthy living, mental health and wellbeing, obesity in adults, obesity in children and sexual health. Merton also shares health inequalities as a priority with Croydon. Finally, Kingston and Richmond share mental health and wellbeing as a priority.

4. Each of the boroughs is represented in at least one of the above priorities. These are therefore prime candidates for the targeted look at new return on investment literature, over and above the existing return on investment literature already known to The King's Fund.