

Commissioning public health services:
the impact of the health reforms on access,
health inequalities and innovation in service provision

The Public Health Budget

Research Report (2)

15 September 2015

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Disclaimer

This report is independent research commissioned and funded by the Department of Health Policy Research Programme (Commissioning public health services: the impact of the health reforms on access, health inequalities and innovation in service provision, PR-R6-1113-25002). The views expressed in this publication are those of the author(s) and not necessarily those of the Department of Health.

Contents

Executive Summary.....	5
Abbreviations.....	11
Background to the project.....	12
Introduction.....	13
The Public Health Budget.....	13
Aims.....	16
Methods.....	16
Datasets – overview.....	17
Financial datasets.....	18
Outcomes datasets.....	21
Other datasets.....	21
Comparison with the PHE Spend and Outcome Tool (SPOT).....	22
Quadrant analysis.....	24
Results.....	25
Comparison of allocation and estimated and actual grant data.....	25
Comparison of per capita actual and forecasted expenditure.....	26
Quadrant analysis.....	30
Comparison of outcomes vs. spend – by categories of spend.....	31
Discussion.....	81
References.....	83
Appendix 1: Local authority spend on the ‘miscellaneous’ category.....	85
Appendix 2: Project Datasets and Sources.....	86
Appendix 3: local authority profiles.....	88
Appendix 4: Overview of PHOF indicators.....	92

Table of Figures

Figure 1: Quadrant Analysis – an overview.....	7
Figure 2: Correlation between public health allocation per head and deprivation: local authorities, 2013/14.....	26
Figure 3: Comparison of LA Actual (RO) and Forecasted (RA) per capita expenditure: total spend, 2013/2014.....	28
Figure 4: Comparison of LA Actual (RO) and Forecasted (RA) per capita expenditure: 18 categories of spend, 2013/2014.....	29
Figure 5: Scatter graph showing the distribution of local authorities across the 4 quadrants.....	30
Figure 6: Box plot showing how quadrant location varied with level of deprivation.....	31

Figure 7: LA net current expenditure per capita (total public health): variation with life expectancy	34
Figure 8: LA net current expenditure per capita (total public health): variation with measures of poverty.....	34
Figure 9: LA net current expenditure per capita (total public health): variation with mortality rates	35
Figure 10: LA net current expenditure per capita (SHS): three types of expenditure, by LA..	36
Figure 11: Histogram of spend on Sexual Health Services: LA variation for 3 types of expenditure.....	37
Figure 12: LA net current expenditure per capita (SHS - STI testing): variation with chlamydia detection rate	39
Figure 13: LA net current expenditure per capita (SHS - contraception): variation with under-18s conception rate	41
Figure 14: LA net current expenditure per capita (SHS – advice): variation with HPV vaccination rate	43
Figure 15: LA net current expenditure per capita (SHS – advice): variation with cervical cancer screening rate.....	43
Figure 16: LA net current expenditure per capita (NHS Health Check): variation with offer and uptake rates	45
Figure 17: LA net current expenditure per capita (Health Protection): variation with mortality due to air pollution	47
Figure 18: LA net current expenditure per capita (Health Protection): variation with chlamydia detection rate.....	48
Figure 19: LA net current expenditure per capita (Health Protection): variation with vaccine uptake	48
Figure 20: LA net current expenditure per capita (National Child Measurement Programme): variation with childhood obesity rates	50
Figure 21: Distribution of LA net current expenditure per capita (Public Health Advice to NHS commissioners): histogram.....	52
Figure 22: LA net current expenditure per capita (Obesity - adults): variation with measures of activity.....	54
Figure 23: LA net current expenditure per capita (Obesity, children): variation with childhood obesity rates.....	56
Figure 24: LA net current expenditure per capita (Physical Activity – adults): variation with measures of activity.....	58
Figure 25: LA net current expenditure per capita (Physical activity - children): variation with childhood obesity rates.....	61
Figure 26: LA net current expenditure per capita (drug misuse, adults): variation with rates of successful completion of drug treatment	63
Figure 27: LA net current expenditure per capita (alcohol misuse, adults): variation with alcohol-related hospital admissions	65
Figure 28: LA net current expenditure per capita (Substance misuse (drugs and alcohol) - youth services): variation with hospital admission rates	67
Figure 29: LA net current expenditure per capita (Stop Smoking services): variation with smoking prevalence	69
Figure 30: LA net current expenditure per capita (wider tobacco control): smoking prevalence.....	72

Figure 31: LA net current expenditure per capita (Children 5–19 public health programmes): variation with educational / deprivation outcomes	75
Figure 32: LA net current expenditure per capita (Children 5–19 public health programmes): variation with outcomes for crime / unintentional and deliberate injuries.....	75
Figure 33: LA net current expenditure per capita (Children 5–19 public health programmes): variation with childhood obesity rates	76
Figure 34: LA net current expenditure per capita (Children 5–19 public health programmes): variation with emotional wellbeing in looked-after children.....	76
Figure 35: LA net current expenditure per capita (Miscellaneous): variation with assorted outcomes	79
Figure 36: LA net current expenditure per capita (Miscellaneous): variation with dental outcome.....	79
Figure 37: LA net current expenditure per capita (Miscellaneous): variation with mortality rates and hospital admissions for violence	80
Figure 38: Histograms showing the distribution of miscellaneous spend within and across classes of local authorities	85
Figure 39: Box plots showing the distribution of miscellaneous spend within and across classes of local authorities	85

Table of Tables

Table 1: Overview of the datasets used for local authority variables	17
Table 2: The 18 categories of Public Health Expenditure and target populations.....	20
Table 3: Quadrant analysis: an overview	24
Table 4: Actual and forecast per capita expenditure, English Local Authorities 2013/2014 ..	27
Table 5: Datasets for the project: description and sources.....	86
Table 6: summary of Local authority characteristics, ranked by total PH spend per capita...	88
Table 7: Overview of the indicators used for the expenditure/outcome comparisons.....	92

Executive Summary

Introduction

Under the Health and Social Care Act 2012 reforms, responsibility for improving the health of local populations and of addressing health inequalities was transferred from the NHS to local authorities. Directors of Public Health (DsPH) and their teams were moved out of the NHS and into local government and local authorities received a public health grant. The grant was initially ring-fenced for two years but this was subsequently extended until 2015/16.

Implemented in April 2013, the ring-fenced public health grant to local authorities is intended “to improve significantly” the health and wellbeing of local populations, enabling local authorities to execute health protection and health improvement functions, provide population healthcare advice, and reduce health inequalities, including those affecting underserved groups.

The Department of Health (DH) remains responsible for public health policy, and has delegated national public health functions to an autonomous national executive agency, Public Health England (PHE). PHE has various roles: it advises the Department, local authorities and NHS on how to improve public health, offers local authorities practical support in their new role (e.g. by providing advice and analysis tools) and provides central services such as public health surveillance. PHE is also responsible for reviewing and analysing the public health returns on behalf of the Department of Health and accountable for securing improved public health outcomes.

The ring-fenced grant

Ring-fenced grants for 2013/14 and 2014/15 totalled £2.66 billion and £2.79 billion respectively for PH (public health) services. Funds not spend within year can be carried over, as part of a public health reserve, into the next financial year. The public health allocation to local authorities is based on a ‘fair shares’ formula devised by the Advisory Committee on Resource Allocation (ACRA). The formula takes account of deprivation and other indicators of relative need for public health services across the country such as premature mortality. The baseline levels were determined by historic NHS decisions on public health spending, but this meant one-third of local authorities were more than 20% from their target allocations. The Department’s intention is that the gap between historical spend and the target allocations will be progressively narrowed over time.

To ensure some uniformity of services, there are six functions that local authorities must have in place (mandatory or ‘prescribed’ functions). These comprise

1. Sexually Transmitted Infections (STI) testing and treatment
2. Contraception
3. NHS health check programme
4. Health protection
5. National child measurement programme
6. Public health advice to NHS Commissioners

Within these constraints, local authorities have discretion over how best to spend the grant to achieve better local public health outcomes and are responsible to their electorates for those decisions.

Aims

This research report is the second of four research reports which form part of the scoping stage of the project. It contributes to workstream 1, providing some of the baseline data that will be used for: workstream 2 regression analyses; descriptions of shifts in commissioning patterns for the public health budget over time; and detailed comparisons across local authorities of how the public health budget is deployed in relation to local needs and/or outcome data.

The overall aim of the report is to provide an insight into how public health expenditure varies across local authorities and how that variation is patterned against a range of outcome measures selected from the Public Health Outcomes Framework (PHOF).

The findings reported here are descriptive, rather than analytical. With just one year of expenditure data, there is no scope for longitudinal analysis or for investigating causal associations. Therefore, no causal inferences can or should be made on the basis of these data.

Methods

We downloaded expenditure and budgetary data from the local authority revenue expenditure and financing website. We used mid-year population estimates from the Office of National Statistics (ONS) to derive relevant denominators to generate per-capita values for each of the 18 categories of expenditure (e.g. local authority populations for individuals aged 5 to 19 for expenditure category 17, 'Children 5–19 public health programmes'). We measured expenditure as 'net current expenditure' which excludes capital and spend from non-grant income. Net current expenditure is the measure also used by Public Health England (PHE) and by the National Audit Office (NAO).

We downloaded data on allocations to local authorities and compared these with data on expected and actual budgets.

We downloaded outcomes data from Public Health England's PHOF website, and selected relevant measures for comparison with each of the 18 categories of spend, and with total public health spend. We compared our approach with PHE's Spend and Outcomes Tool (SPOT).

We used data on deprivation, rurality and ethnicity from the Office for National Statistics (ONS) website¹ to provide baseline 'profiles' for each local authority.

We undertook a series of comparative analyses to explore the following:

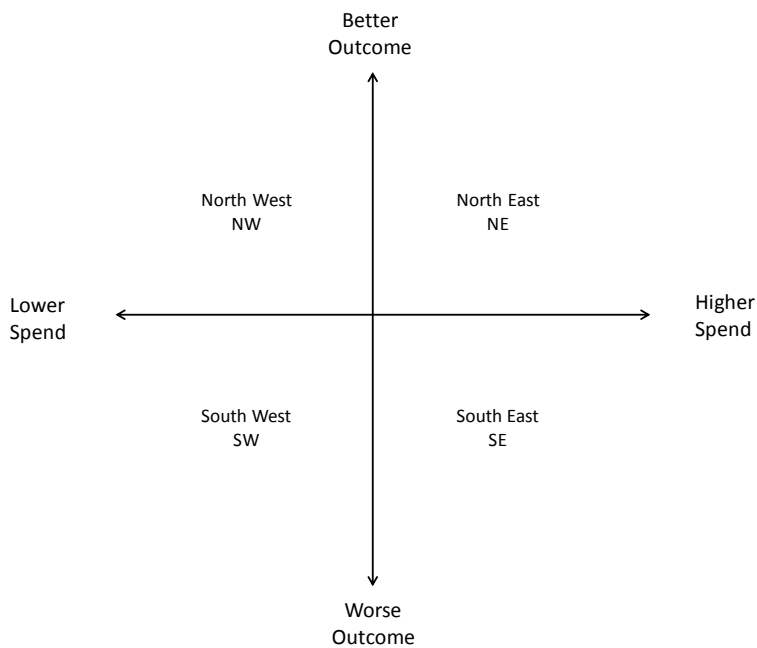
- (i) actual vs. estimated public health grants, also compared with allocation data
- (ii) actual vs. forecasted expenditure
- (iii) 'Quadrant analysis' of local authority to identify local authorities with levels of expenditure and outcomes consistently above or below average (See Figure 1).
- (iv) Comparison of outcomes vs. spend

¹ <http://neighbourhood.statistics.gov.uk/dissemination/LeadHome.do?m=0&s=1431705579422&enc=1&njsjs=true&nscck=false&nssvg=false&nswid=1280>

Our methods section also describes how our approach for comparing outcomes and spend developed and built on the methods used for the SPOT.

In our comparisons of each of the 18 categories of spend with outcomes, we used simple scatter plots to show the associations. We also provided details of correlations between spend and outcome, proportions of total public health spend, and a brief narrative for each category. As an overview, we undertook a simple quadrant analysis to identify local authorities with levels of expenditure and outcomes consistently above or below average (median) values. Figure 1 shows how each quadrant relates to relative levels of spend and outcome. For example, if we were comparing local authorities on their per-capita spend on STI testing and treatment and the outcome 'chlamydia detection rate', a local authority in the North West quadrant has better outcomes and lower spend than average. We repeat this process for all 51 comparisons and then identify local authorities that are located in a particular quadrant in at least 75% of the comparisons – these are the 'consistent' performers.

Figure 1: Quadrant Analysis – an overview



Results

In 2013/14, total local authority expenditure on public health was £2.5bn. Of the 18 categories of public health expenditure, adult drug misuse services accounted for the largest share (21.2%, £532m). Substance misuse services are not a prescribed (mandatory) function for local authorities. The next largest category of expenditure was one of the prescribed functions, STI testing and treatment (15.2%). The three sexual health services categories together accounted for £645m (26% of total spend). Local authorities classified almost 14% of public health expenditure (£345m) as 'miscellaneous public health services.'

In the comparison of 2013/14 actual and estimated public health grants data with allocation data, the three grant figures were identical for 140 of 152 local authorities. Of the remaining 12 local authorities, in 10 there were small discrepancies between the estimated and actual grants. There were large discrepancies for the remaining two local authorities. In Kent County Council, the actual grant was £1.56 million less than the estimated grant, while in Thurrock (a unitary authority) the actual grant was £953,000 higher than the estimated value.

In the comparison of per capita forecasted and actual expenditure, total public health spend was forecast to be about £57 per head across the 152 local authorities; mean actual spend was just under £53 per head. However, this overall difference reflected 'winners' and 'losers' across the categories of spend. The largest absolute difference between forecasted and actual spend per head was for the national child measurement programme (NCMP) where mean actual spend was £8.86 per head higher than forecasted (£17.60 per person vs. £26.46). Although 62 local authorities forecasted zero spend for the NCMP category, all reported positive values for actual spend. It is possible that local authorities struggled to identify spend on the NCMP separately from overall school nursing services. The finding is nonetheless puzzling as data published by the Health and Social Care Information Centre show that NCMP participation rates are generally very high. Across most of the 18 expenditure categories, however, actual and forecasted expenditure were similar.

We used a simple 'quadrant' analysis to identify local authorities with levels of expenditure and outcomes consistently above or below median values. Two shire counties, Buckinghamshire CC and Hertfordshire CC, were located above the 75% mark in the north-west (NW) quadrant, i.e. their per-capita spend was lower than average (median) and their outcomes were better than average (median) in three-quarters of the comparisons of spend with outcome. These characteristics are likely to reflect the relatively affluent populations local authorities typically located in the NW quadrant.

Durham County Council and Sunderland City Council were located in the south east quadrant in 75% of comparisons, i.e. they typically had higher than average spend and worse outcomes. These characteristics are likely to reflect the relatively disadvantaged populations of local authorities typically located in the SE quadrant.

Two unitary authorities, Plymouth UA and the Isles of Scilly, were in the south-west quadrant for at least half the comparisons, i.e. they had worse than average outcomes and lower than average spend. No local authority had better outcomes and higher spend (north-east quadrant) in over 50% of comparisons, but three authorities were located in this quadrant for 45% to 49% of comparisons: Kingston upon Thames; Stockport MBC; and

Leicestershire CC. Further details of the variation between outcomes and expenditure in each of the 18 categories are provided in the full report.

Discussion

Local Authorities must have regard to the need to improve the health of their populations and to reduce health inequalities as a condition of their ring fenced public health grants. This report provides an oversight of how local authorities spent these public health budgets in the first year of operation, but does not shed light on whether local authorities have met the objectives underpinning the ring-fenced public health grant.

New reporting guidelines mean that for the first time there is a degree of transparency about how funds have been spent on tackling local public health priorities, and how local authorities' spend on six mandatory and 12 non-mandatory public health functions varied in the first year of operation. The move towards a more explicit reporting system is to be welcomed, notwithstanding some of the data limitations that we discuss below.

Overall, allocations data tallied well with data on estimated and actual budgets. Total public health spend was forecast to be about £57 per head across the 152 local authorities. The final outturn per-capita spend averaged £53 (i.e. the mean of all local authority averages). Whilst actual and forecasted expenditure were similar in most of the 18 expenditure categories, there were notable 'winners' and 'losers' amongst the categories. There was a huge variation in per capita spend on the National Child Measurement Programme (NCMP), ranging from £0.12 to £325 (not counting the City of London, which has a small resident population that makes per capita values difficult to interpret). These ranges are so wide that they appear implausible, particularly as NCMP participation rates are generally very high. For some categories, where local authorities reported low or even zero per capita expenditure this may underestimate the actual services provided in the local authority and this underlines the risks of drawing conclusions about service provision from data on spend. One possible reason for the variation is mis-categorisation (e.g. to the miscellaneous category) or to ambiguities built into the reporting categories. Local authorities in England spent £345m on the miscellaneous category (14% of total spend) in 2013/14, but it is unclear how these monies were apportioned. We recommend that the 15 miscellaneous subcategories listed in the revenue guidelines should be reported to the DCLG as part of the standard accounting returns.

In our comparisons of each of the 18 categories of spend with outcomes, we used simple scatter plots to show the associations, which differs from the more complex presentational approach adopted by SPOT. Nonetheless, we refined the SPOT approach in several ways, most importantly by using age and gender specific populations to estimate per capita values for each category. PHE may wish to consider using a similar approach for future versions of SPOT.

The findings reported here are descriptive, rather than analytical. With just one year of expenditure data, there is no scope for longitudinal analysis or for investigating causal associations. Therefore, no causal inferences can or should be made on the basis of these data.

ACRA's fair funding formula adjusts for underlying need, and it was therefore unsurprising that higher levels of expenditure were associated with greater deprivation. In workstream 2, we plan to undertake a series of regression analyses to investigate the relationship

between spend and outcome for two of the 18 budget categories where there may be most potential to identify changes: child obesity; and follow on services for health checks. These analyses will seek to control for confounding factors in local populations such as age, gender and deprivation, and should provide a more robust investigation of the relationship between public health spend and outcomes for local authorities.

Abbreviations

ACRA	Advisory Committee on Resource Allocation
CC	County council
CCG	Clinical Commissioning Group
DCLG	Department for Communities and Local Government
DFT	Distance from target
DH	Department of Health
dmft	decayed/missing/filled teeth (dental target)
DsPH	Directors of Public Health
HSCIC	Health and Social Care Information Centre
HWB	Health and Wellbeing Board
JSNA	Joint Strategic Needs Assessment
LB	London Borough
LGA	Local Government Association
MBC	Metropolitan borough council
MD	metropolitan district
NAO	National Audit Office
NCMP	National child measurement programme
NIHR	National Institute for Health Research
PCT	Primary Care Trust
PH	Public Health
PHE	Public Health England
PHOF	Public Health Outcomes Framework
RA	Revenue account (forecasted or planned spend)
RG	Specific and Special Revenue Grants (actual grant)
RO	Revenue outturn (final or actual spend)
SC	Shire council
SD	Shire district
sd	standard deviation
SG	Specific and Special Revenue Grants (estimated grant)
SPOT	Spend and Outcome Tool
STI	Sexually transmitted infection
UA	Unitary Authority
VCS	Voluntary and Community Sector
VONNE	Voluntary Organisations' Network North East

Background to the project

Commissioning public health services: the impact of the health reforms on access, health inequalities and innovation in service provision is a research project funded by the Department of Health Policy Research Programme. Its purpose is to evaluate the impact of public health reforms set in motion by the Health and Social Care Act 2012 and the project is being carried out by a research team from the Universities of Durham, York and Coventry and from Voluntary Organisations' Network North East (VONNE). The project began in January 2015 and will end in June 2017.

Introduction

Under the Health and Social Care Act 2012 reforms, responsibility for improving the health of local populations was transferred from the NHS to local authorities. Directors of Public Health (DsPH) and their teams were moved out of the NHS and into local government and local authorities received a public health grant. The grant was initially ring-fenced for two years but this was subsequently extended until 2015/16.

The shift reflected the role of local authorities in influencing social determinants of health, their links with local populations and community networks and the benefits of local democratic accountability. As the reforms built on pre-existing local government involvement in public health and local partnerships, this study focuses on the impact of three new responsibilities that directly result from the reforms, reflected in three inter-related workstreams: (1) new budgetary responsibilities; (2) local authority responsibilities for commissioning preventive services through a range of providers; and (3) a leadership role for local authorities in promoting health and addressing health inequalities. Each workstream uses a mix of quantitative and qualitative methods and, where possible, explores the impact of the reforms on health outcomes. Methods include surveys to provide a national overview, data analysis of spend and health outcomes and in-depth study of ten case study sites across England.

This research report is the second of four research reports which form part of the scoping stage of the project. It contributes to workstream one, providing some of the baseline data that will be used for: planned regression analyses; descriptions of shifts in commissioning patterns for the public health budget over time; and detailed comparisons across local authorities of how the public health budget is deployed in relation to local needs and/or outcome data.

The findings reported here are descriptive, rather than analytical. With just one year of expenditure data, there is no scope for longitudinal analysis or for investigating causal associations. Therefore, no causal inferences can or should be made on the basis of these data.

The Public Health Budget

The ring-fenced public health grant to local authorities is intended “to improve significantly” the health and wellbeing of local populations, execute health protection and health improvement functions, provide population healthcare advice, and reduce health inequalities and by addressing the needs of under-served groups [1].

It reflected historic NHS spend on preventive services, although the amounts involved were difficult to estimate given the lack of a clearly identified public health budget in the former Primary Care Trusts (PCTs) (and notwithstanding long-standing attempts to estimate ‘preventative health spend’ (Health England) [2] . Moreover, local authorities differed in the emphasis accorded to public health prior to the reforms. The Advisory Committee on Resource Allocation (ACRA) developed a ‘fair shares’ formula for public health allocations for local authorities, taking account of deprivation and other indicators of relative need for public health services across the country [3]. This exposed the distance between historical spend and the target allocations, an issue that has proved difficult to resolve quickly given pre-existing contracts and levels of service provision. Sexual health services and 0- 5s are areas that ACRA is reconsidering for the formula [4].

There is, therefore, a history of difficulty in estimating actual spend on public health and of achieving a fair allocation.

There were also pressures on the transferred budget post 2013. Despite a ring fence devised to ensure that public health services were prioritised and some elements of the budget being made mandatory, there was some evidence that the public health budget was being 'raided' to fund wider council services, with information being gained through FOI requests from the BMJ [5] and others. Despite these difficulties, there is interest in the potential of assessing spend against public health outcomes, where relevant, with PHE developing a new Spend and Outcome Tool (SPOT) for local authorities which 'allows the identification of areas requiring priority attention where shifts in investment will optimise local health gains and increase quality'.² A report from the National Audit Office (NAO) [6] also indicated some local authority areas where poor outcomes were correlated with lower than average spend. The NAO report notes, for example, that "our data analysis showed local authorities where alcohol misuse worsened the most between 2010-11 and 2012-13 were spending significantly less on alcohol services in 2013-14" (para. 9).

The health premium incentive scheme was also designed to reward improved outcomes, although preferred indicators currently relate more to service delivery (health checks and drug and alcohol treatment). More recently, there have been attempts to protect transferred public health services through 'grant conditions' being applied for drugs and alcohol [7]. However, ring-fenced grants are unusual within a local authority setting - public health is one of only two ring fenced grants – and the future of the ring fence remains unclear.

Against this backdrop, this initial report on the public health budget offers a detailed description of spend in relation to outcomes. However, causal relationships between spend and outcomes should not be inferred from these descriptions.

Public health budget reporting

Ring fenced grants for 2013/14 and 2014/15 totalled £2.66 billion and £2.79 billion respectively for PH (public health) services. Funds not spend within year can be carried over, as part of a public health reserve, into the next financial year.

Local Authorities report their PH expenditure as quarterly and annual returns to the Department of Communities and Local Government (DCLG). Local authorities report quarterly data for total PH spend, and annual reports for forecasted PH (revenue accounts, RA data) and actual expenditure (revenue outturn, RO data). As the RO form is not audited, the local authority Chief Executive is required to return a 'statement of assurance' confirming the grant has been used as intended and the RO returns are an accurate reflection of that expenditure. PHE is responsible for reviewing the public health returns on behalf of the Department of Health and to analyse the returns and report their findings to the Secretary of State [8].

The RO and RA returns cover 18 categories of spend (Table 2), including a 'miscellaneous' category. The areas covered by the miscellaneous category are given in Table 2.

² <http://www.yhpho.org.uk/default.aspx?RID=49488>

We planned to request disaggregated data on expenditure for categories 17 (children 5-19 public health programmes) and 18 (Miscellaneous). However, we have so far been unable to identify a reliable source for these data as the DCLG does not hold them and our understanding, based on anecdotal information, is that local authorities are overwhelmed with freedom of information requests related to the deployment of the budget. Our efforts to obtain a detailed breakdown of the Miscellaneous category have been unsuccessful, despite the importance of many of the areas included within it from a public health perspective and the substantial sums involved: on average, local authorities spent 12.7% of their funds in the 'miscellaneous' category, but this ranged from 0% to almost 35% (see Appendix 1 for an overview of the variation amongst local authorities). Moreover, local authorities will have faced challenges identifying spend by the PCTs that were responsible for public health before April 2013.

Local authorities have a duty to work with clinical commissioning groups (CCGs) and other partners in assessing current and future health and social care needs (the Joint Strategic Needs Assessment, JSNA) and devising a plan for meeting those needs (Joint Health and Wellbeing Strategy, JHWS) [1]. Health and Wellbeing Boards (HWBs) are Statutory Boards of the local authority and play an important role in agreeing priorities in line with the findings of the JSNA and the Joint Health and Wellbeing Strategies.

How to use this report

The report describes how local authorities spent their ring-fenced public health budgets on the 18 categories of specified by the Department for Communities and Local Government (DCLG) in the first year of operation (2013/14). The report provides comparisons of allocations, estimated and actual grants; forecasted and actual spend on the 18 categories; and a detailed cross-sectional description of how selected outcomes vary with each category of spend. We also provide a 'quadrant' analysis to identify local authorities with levels of expenditure and outcomes consistently above or below average.

There are several cautions about how not to use the findings. **First, causal relationships between spend and outcomes cannot and should not be inferred from these descriptions.** Longitudinal data is expected to become available over the duration of the project which should facilitate a more robust inferential analysis of the relationship between spend and outcome.

Another caveat is that this report takes no account of local authority expenditure on other programmes, such as education or the environment, on public health issues – i.e. spend included in the budgets of other directorates. Lastly, as this was the first year that local authorities held a ring fenced public health budget, the data capture a transitional phase when local authorities are beginning to take exercise their new public health duties, and are likely to be working closely with NHS commissioners and other partners in their local leadership function. The descriptions of spend and outcome need to be understood in this context, so our descriptions essentially provide a baseline snapshot of local authorities' starting point rather than an analysis or measurement of 'performance'.

Aims

This report is part of workstream 1. It uses publicly available data to describe new budgetary responsibilities and show how public health expenditure varies across local authorities and against a range of outcome measures.

The report provides an overview of how the 152 upper-tier and unitary local authorities in England have budgeted for and spent their ring-fenced allocations for public health. We have also derived profiles of each local authority, covering their expenditure patterns, the characteristics of their local populations (ethnicity, rurality, and deprivation) and their outcomes are taken from the Public Health Outcomes Framework (PHOF). This information also informs the selection of the case study site (workstream 2 and 3) and will support the analysis of the relationship between the public health budget and outcomes (workstream 2). The relevant research question from the project is shown in Box 1.

Box 1: Project Research question relevant to the public health budget analysis

1. How has the ring-fenced public health budget been deployed and pooled with other local authority services?

Objectives

- 1) To investigate trends in the deployment of the ring-fenced public health budget, document changes in the balance of commissioned public health interventions and compare changes to trends in relevant outcomes.
- 2) To assess 'added value' from budgetary initiatives, including pooling arrangements across public health and other local authority budgets.

Methods

We undertook a series of comparative analyses to explore the following:

- (i) actual vs. estimated public health grants, also compared with allocation data
- (ii) actual vs. forecasted expenditure
- (iii) 'Quadrant analysis' of local authority to identify local authorities with levels of expenditure and outcomes consistently above or below average (overview of (iv))
- (iv) Comparison of outcomes vs. spend

Our methods section also describes how our approach for comparing outcomes and spend developed and built on the methods used for the PHE Spend and Outcome Tool (SPOT).

In our comparisons of each of the 18 categories of per-capita spend with outcomes, we used simple scatter plots to show the associations. We also provided details of correlations between spend and outcome, proportions of total public health spend, and a brief narrative for each category. As an overview, we undertook a simple quadrant analysis to identify local authorities with levels of expenditure and outcomes consistently above or below average. All analyses were done in Stata 13.1.

Datasets – overview

Table 1 provides a summary of the datasets used for this report. A more detailed description of the datasets that have or may be used for this project is provided in Appendix 2 (Table 5).

Table 1: Overview of the datasets used for local authority variables

Variable	Description	Sources
Per capita public health expenditure	Per-capita measures for 18 categories of public health expenditure: RA: revenue account (planned spend) RO: revenue outturn (final spend)	Department for Communities and Local Government Local authority revenue expenditure and financing
Grants	RG: general fund revenue account outturn-specific and special revenue grants data (estimated budget); SG: specific and special revenue grants budget data (actual budget); Includes 313: public health grant	Department for Communities and Local Government Local authority revenue expenditure and financing
Allocation	Details of the final allocations given to local authorities for their new public health responsibilities. Based on ‘distance from target’ (dft) allocation. Dft is based on measures of need.	Department of Health ACRA Exposition Book Public Health Allocations 2013-14, 2014-15 [9].
Population	Mid-year 2013 population estimates, by age and sex. Used to estimate per capita spend: (1) Based on total population (2) Based on age /gender specific populations selected to reflect the category of expenditure	Office for National Statistics (ONS) MYE2: Population Estimates by single year of age and sex for local authorities in the UK, mid-2013 ³
Outcomes data	Public Health Outcomes Framework. There are 143 indicators classified into 5 types: 1. Overarching 2. improving wider determinants of health 3. health improvement 4. health protection 5. healthcare public health and preventing premature mortality.	Public Health England
Ethnicity	% non-white	ONS data based on 2011 Census

³ Annual Mid-Year Population Estimates for the UK, © Crown Copyright 2014

Variable	Description	Sources
Urban / rural measures	% rural – includes Market Towns. The Local Authority Rural/Urban Classification categorises LAs based on the number or proportion of their population living in urban centres or in rural settlements and large market towns.	ONS data ⁴ (developed by the Department for Environment Food & Rural Affairs).
Deprivation	2010 IMD measure: % residents living in 20% most deprived areas in England.	ONS data ⁴ (developed by the Department for Communities and Local Government).

We downloaded expenditure and budgetary data from the Local Authority revenue expenditure and financing website.⁵ We used mid-year population estimates from the Office of National Statistics (ONS) to derive relevant denominators to generate per-capita values for each of the 18 categories of expenditure (e.g. local authority populations for individuals aged 5 to 19 for expenditure category 17: ‘Children 5–19 public health programmes’).

We downloaded data on allocations to local authorities⁶ and compared these with total PH spend.

We downloaded outcomes data from the Public Health England’s PHOF website,⁷ and selected relevant measures for comparison with each of the 18 categories of spend, and with total public health spend.

In addition, we used ONS data on deprivation, rurality and ethnicity to provide baseline ‘profiles’ for each local authority.

Further details of our data sources and details of the comparisons we undertook are described below.

Financial datasets

Budget estimates of local authority revenue expenditure and financing for each financial year are compiled by the ‘Local Government Finance - Data Collection Analysis and Accountancy’ division of Department for Communities and Local Government (DCLG) [10]. Local authorities report three high-level quarterly returns in-year (i.e. not broken down by category of expenditure) known as quarterly revenue outturns, and an end-of-year return against 18 specified categories (or lines) showing how the grant has been spent (revenue outturn, RO). The latter forms the basis for our comparative analyses, and our results are presented in the order used for the DCLG returns.

⁴ Available at: <http://neighbourhood.statistics.gov.uk/dissemination/LeadHome.do>

⁵ <https://www.gov.uk/government/collections/local-authority-revenue-expenditure-and-financing>

⁶ <https://www.gov.uk/government/publications/ring-fenced-public-health-grants-to-local-authorities-2013-14-and-2014-15>

⁷ <http://www.phoutcomes.info/>

We downloaded the following datasets relevant to public health expenditure and financing from the DCLG website.⁸

The Public Health Grant is a specific and special grant and part of the Aggregated External Finance (AEF). The value of the grant for each year to each local authority is reported as a forecasted (RA) and as an actual (RO) value.

The DCLG dataset for actual (RO) expenditure is reported under the following headings (or columns, abbreviated here as 'c'):

employees (c1)	running expenses (c2)	total expenditure (c3= c1+c2)
sales, fees & charges (c4)	other income (c5)	total income (c6= c4+c5)
net current expenditure (c7 = c6 - c3)	capital items (c8)	net total cost (c9=c7+c8)

The DCLG dataset for forecasted (RA) expenditure is reported only for the headings in the third row (i.e. c7, c8 and c9). Per capita estimates of RA and RO net current expenditure are derived by dividing each category of PH expenditure by age/gender specific populations for each local authority as shown in Table 2.

Datasets on grants include details of specific and special grants within Aggregated External Finance (AEF) and this includes the public health grant. We also downloaded data on the allocations grant,⁹ to confirm this tallied with actual total spend.

Further details on the types of comparison made using financial data are set out in the section 'comparative analyses' below. In this report, we use 'expenditure' to refer to net current expenditure,¹⁰ which is derived from Revenue Outturn returns (i.e. actual expenditure) unless otherwise stated. Net current expenditure is the measure also used by PHE in its SPOT tool and also used in the National Audit Office analysis [6].

The DCLG dataset also includes mandatory data on public health spend by primary care service provider (e.g. general practice, dental services, and pharmacies). The data are presented as a total figure for each local authority, so there is no information on how spend was distributed across the 18 categories. Overall, the proportions of total public health spend held with these providers were small: 3.0% on General Practice Services; 1.1% on Pharmaceutical Services / services from pharmacies; 0.1% on Dental Services; and 0.001% on Eye Care Services. Whilst over half (53%) of local authorities reported zero public health spend on General Practice Services, the returns by Kingston upon Hull indicated that all but a tiny fraction of its public health expenditure was with general practice providers (£22.5m).

⁸ <https://www.gov.uk/government/collections/local-authority-revenue-expenditure-and-financing>

⁹ <https://www.gov.uk/government/publications/ring-fenced-public-health-grants-to-local-authorities-2013-14-and-2014-15>

¹⁰ Net current expenditure = net total cost *less* capital expenditure

Table 2: The 18 categories of Public Health Expenditure and target populations

No.	Category, description	Prescribed function	Target population (used for per-capita values)
1	361 Sexual health services - STI testing and treatment	yes	Population aged 15-64 [11]
2	362 Sexual health services - Contraception	yes	Females aged 13-54 ¹¹
3	363 Sexual health services - Advice, prevention and promotion	no	Population aged 10-64
4	365 NHS health check programme	yes	40-74 ¹²
5	366 Health protection - Local authority role in health protection	yes	Total Population
6	368 National child measurement programme	yes	Population aged 5 and 11 [12]
7	370 Public health advice	yes	Total Population
8	371 Obesity - adults	no	Population aged 20+
9	372 Obesity - children	no	Population aged 5-19 ¹³ [13]
10	373 Physical activity - adults	no	Population aged 20+
11	374 Physical activity - children	no	Population aged 5-19 ¹⁴ [4]
12	376 Substance misuse - Drug misuse - adults	no	Population aged 20+
13	377 Substance misuse - Alcohol misuse - adults	no	Population aged 20+
14	378 Substance misuse - (drugs and alcohol) - youth services	no	Population aged 13-19 [14]
15	380 Smoking and tobacco - Stop smoking services and interventions	no	Population aged 5+
16	381 Smoking and tobacco - Wider tobacco control	no	Population aged 5+
17	383 Children 5–19 public health programmes	no	Population aged 5-19 inclusive [15]
18	385 Miscellaneous public health services *	no	Total Population
390 TOTAL PUBLIC HEALTH			Total Population

The miscellaneous category includes:	9. Infection disease surveillance and control
1. Nutrition initiatives	10. Any public health spend on environmental hazards protection
2. Health at work	11. Local initiatives to reduce excess deaths from seasonal mortality
3. Programmes to prevent accidents	12. Population level interventions to reduce and prevent birth defects (supporting role)
4. Public mental health	13. Information & Intelligence
5. General prevention activities	14. Wider determinants of health
6. Community safety, violence prevention & social exclusion	15. Non-mandatory elements of the NHS Health Check programme (e.g. intensive lifestyle management)
7. Dental public health	
8. Fluoridation	

¹¹ Based on information from QOF indicator definitions 2013-14 [<http://www.hscic.gov.uk/catalogue/PUB15751>] and NHS contraception service data [<http://www.hscic.gov.uk/catalogue/PUB15746>]

¹² Age range based on: <http://www.nhs.uk/Conditions/nhs-health-check/Pages/NHS-Health-Check.aspx>. The population covered by this programme in each local authority: http://www.healthcheck.nhs.uk/interactive_map/

¹³ Local authorities commission some public health services for children and young people aged 5–19 years. NHS England commissions primary care, clinical and specialised services. It also commissions public health services for children aged 0–5 years.

¹⁴ Children’s public health commissioning responsibilities for 0-5 year olds will transfer from NHS England to local authorities on 1 October 2015.

Outcomes datasets

The Public Health Outcomes Framework sets out the Government's vision for public health. Whilst PHE is accountable for securing improved public health outcomes [7, 16], local authorities are required to 'have regard' to the PHOF [16]. The PHOF is not intended to be a management tool but it can provide an indication over time of public health needs and any improvements within an area [16]. From the 143 indicators available from the PHOF, we selected 43 to reflect each category of spend and generated scatter plots comparing local authority spend with the respective outcome measure(s). A further 9 indicators were considered potentially relevant, but were not used either because data were not available or because the indicator was considered less informative on closer scrutiny.

For total spend, we selected broad indicators of health and wellbeing such as healthy life expectancy. For other categories of spend, we selected indicators that appeared most suited to the category of expenditure, e.g. measures of obesity for categories 371 and 372 spend on obesity. For other categories of spend, the choice of indicators was less clear-cut and we provide a brief explanation for our choice of indicators in the results section where this is the case. However, there may be scope to improve the selection of indicators, particularly for categories such as sexual health promotion (363) and health protection (366). A summary of the indicators used for each type of expenditure is shown in Table 7 (Appendix 4).

Expenditure data are for the year 2013/14, so we used outcomes for 2013/14 where available. However, some indicators are measured over three-year intervals, and others were only available for 2012/13 or 2014/15. We selected the year closest to 2013.

All the comparisons are cross-sectional: they simply describe how spend and outcomes vary across local authorities at a particular time point. Therefore, they should not be interpreted as portraying a causal relationship.

Other datasets

To derive baseline profiles for each local authority, we used data from the ONS website.

The deprivation dataset was based on the most recent year available, 2010. The indicator for deprivation is the percentage of people in an area living in 20% most deprived areas in England (IMD2010). There is no local authority code in the dataset. We therefore used the local authority name to map from the deprivation dataset to the RO expenditure dataset. We made manual adjustments in Excel before exporting the data into Stata as the datasets used slightly different spellings (e.g. "York" vs. "York UA".) Of the 152 local authorities, 150 had deprivation data and two had missing values (City of London; Isles of Scilly).

Data on ethnicity came from the 2011 Census. The indicator for ethnicity is percentage of people from 14 non-white ethnicities out of 18 ethnicities in total.¹⁵ For using the

¹⁵ There are 18 ethnicities in England in 2011. White ethnicities: 1) White; English/Welsh/Scottish/Northern Irish/British. 2) White; Irish. 3) White; Gypsy or Irish Traveller. 4) White; Other White. Non-white ethnicities: 1) Mixed/Multiple Ethnic Groups; White and Black Caribbean. 2) Mixed/Multiple Ethnic Groups; White and Black African. 3) Mixed/Multiple Ethnic Groups; White and Asian Percentage. 4) Mixed/Multiple Ethnic Groups; Other Mixed. 5) Asian/Asian British; Indian. 6) Asian/Asian British; Pakistani. 7) Asian/Asian British; Bangladeshi. 8) Asian/Asian British; Chinese. 9) Asian/Asian British; Other Asian. 10)

dataset in our purpose, we processed the dataset in following procedures: (1) we mapped the Shire Districts to Shire Counties as there are no shire county data in the downloaded dataset; (2) we calculated the indicator value for Shire Counties based on Shire District data.

The rurality dataset¹⁶ used values last updated in April 2009. In this report, we use the indicator of the percentage of population living in rural area (including Large Market Town population)¹⁷ in local authorities. We processed the dataset in following steps: (1) we mapped the old district code to the new district code; (2) we mapped the Shire Districts to Shire Counties as there are no shire county data in the downloaded dataset; (3) we calculated the indicator value for Shire Counties based on Shire District data.

Comparison with the PHE Spend and Outcome Tool (SPOT)

Public Health England produces 'SPOT', a detailed interactive online tool that provides local authorities and CCGs with an overview of their spend and outcomes and compare their own values against a range of benchmarks.¹⁸ We did not seek to duplicate this work, but for clarity we set out some commonalities and differences in our approach.

Data issues

SPOT reports net current expenditure from the RA and RO returns, whereas our comparison of spend and outcomes uses only RO net current expenditure data. The SPOT uses total local authority populations to derive spend per head of resident population. However, some of the categories of spend are explicitly age or gender specific (e.g. local authority populations for individuals aged 5 to 19 for expenditure category 17, 'Children 5–19 public health programmes'). In addition, public health allocations are adjusted by age and gender to reflect population need, suggesting that ACRA expects spend to be related to these variables. We therefore estimated the proportion of different age groups in the 2013 local authority populations and found these differed considerably across local authorities. Our view is that it is more meaningful to calculate the per capita actual and forecasted expenditure by dividing total expenditure by the age-sex specific population for each of the 18 categories of spend (see Table 2).

SPOT is sourced from several different outcomes frameworks. We used the most recently available outcome data from the PHOF in this report. Some of these data were unavailable when SPOT was produced. For example, we use indicator 0.1i from PHOF, 'healthy life expectancy at birth' for the period 2010-2012, whereas the SPOT uses the data from 2009-2011 for this indicator. In addition, we aggregated gender-specific indicators for healthy life expectancy at birth (0.1i) and for 'life expectancy at birth' (0.1ii) to derive person-based outcomes. The SPOT reports healthy life expectancy at birth separately for females and males.

Black/African/Caribbean/Black British; African. 11) Black/African/Caribbean/Black British; Caribbean. 12) Black/African/Caribbean/Black British; Other Black. 13) Other Ethnic Group; Arab. 14) Other Ethnic Group; Any Other Ethnic Group.

¹⁶ Data source: <http://www.ons.gov.uk/ons/guide-method/geography/products/area-classifications/rural-urban-definition-and-la/rural-urban-local-authority--la--classification--england-/index.html>

¹⁷ People living in the Large Market Towns are defined as Urban in the Rural Definition. For the purposes of classifying Local Authorities these towns are considered to be Rural.

¹⁸ <http://www.yhpho.org.uk/default.aspx?RID=49488>

Presentational differences

The SPOT tool provides an interactive Excel-based function that allows local authorities to compare their expenditure per head with outcomes in a variety of different ways.

In SPOT, quadrant charts are provided that use Z scores¹⁹ to compare spend with outcomes. Local authorities can see which quadrant(s) they lie in (higher/lower spend and better/worse outcomes), and whether they are 'outliers'. Quadrant charts are provided for total programme spend on public health, adult social care, children's social care, education, culture, and housing etc. There are similar charts to facilitate comparisons across eight sub-programmes of public health spend (e.g. 'drugs and alcohol', or 'mental public health'). Outcomes are selected to be 'reasonably representative of the programme as a whole.'

SPOT also offers spine charts, bar charts and boxplots as alternative means of visualising spend and outcomes data. The spine charts show local authorities how their expenditure and key outcomes for major programmes compare with regional and national values. The bar chart shows the size of spend in each programme (public health, adult social care etc.) and local authorities can use drop down menus to compare their per-capita spend with those of comparator organisations. In separate box plots for spend and for outcomes, users can select the measure of spend or the outcomes of interest from drop-down menus to see how their levels compare with national values and with those of a range of peers (e.g. organisations within the same deprivation decile).

SPOT compares selected public health subcategories of expenditure against selected outcomes. Therefore, SPOT was of limited use in identifying relevant outcomes for all of the 18 categories of spend.

By comparison, our presentational approach was much simpler. We used scatter charts and some histograms to show how the actual value (RO return) of per capita net current expenditure varied against selected outcome measures for each of the 18 categories of spend, and for total public health spend. We also undertook a simple quadrant analysis to identify local authorities with levels of expenditure and outcomes consistently above or below average (see below).

Comparison of our results with those of SPOT

As a sense check, we compared our estimates of per capita actual expenditure for 18 categories with those of SPOT (version: 9 February 2015). In this version of SPOT, per capita local authority expenditure is based on ONS 2012 estimates of total resident population. For comparison with SPOT, our estimates were based on total resident population in 2013. In SPOT, there were some missing values and non-updated values for public health spend, whereas there were no missing values for public health expenditure in our dataset.

The comparisons showed that our method yielded very similar results to SPOT for most per capita estimates of expenditure, confirming our estimates were sound. There were large differences for a small number of local authorities, typically where SPOT data had missing values.

¹⁹ A Z score essentially measures the distance of a value from the mean (average) in units of standard deviations. A positive Z score indicates that the value is above the mean, whereas a negative Z score indicates that the value is below the mean. A value of above 2 (or below minus 2) may indicate the need for further investigation (i.e. 'outlier' status).

Quadrant analysis

To identify whether local authorities had levels of expenditure and outcomes consistently above or below average, we counted the number of outcome-spend comparisons in which a local authority was above or below median values.

When estimating median values for outcome measures, we took account of the direction of the scale to reflect the fact that higher values can imply either better (e.g. life expectancy) or worse (e.g. smoking prevalence) outcomes depending on the measure.

We excluded total spend and its associated outcome measures, focusing on comparisons within the 18 categories of public health spend (Table 3). There were 51 comparisons (of outcome and spend) across these 18 categories.²⁰

The ‘quadrant analysis’ is our own adaptation of the quadrant approach used in cost-effectiveness analysis (CEA) i.e. the cost-effectiveness plane used to derive cost-effectiveness acceptability curves [17]. In CEA, the plane depicts differences (changes before and after treatment) in costs and effects (or outcomes). However, we have only observations at a single time point, i.e. one year of expenditure data. Therefore, the quadrant analysis used here uses, for each of the 51 comparisons, point estimates of expenditure and outcome for each local authority. We repeated this process for all 51 outcome / spend comparisons and then identified local authorities that were located in a particular quadrant in at least 75% of the comparisons – these were the ‘consistent’ performers.

Appendix 4 provides further details of which outcomes were used for comparison with the 18 expenditure categories, and the outcomes used for comparison with total spend.

Table 3: Quadrant analysis: an overview

Quadrant	Interpretation
NW	better outcome/lower spend
NE	better outcome/higher spend
SE	worse outcome/higher spend
SW	worse outcome/lower spend

²⁰ i.e. 37 indicators from the PHOF, 10 of which were used in more than one category: 8 in 2 categories and 2 in 4 categories

Results

In this section, we present descriptive comparisons of the PH expenditure data. The main comparison of interest was local authority spend in each of the 18 categories of expenditure against the outcomes selected from the PHOF, and the related quadrant analysis. However, we also undertook a number of additional comparisons to sense check our data: we compared allocation data with estimated (SG) and actual (RG) grant data; we compared per-capita values of forecasted (RA) and actual (RO) spend by local authority; and we used a simple 'quadrant' analysis to locate local authorities for each comparison, to identify whether some were more often characterised by higher/lower spend and poorer/ better outcomes.

In 2013/14, total local authority expenditure on public health was £2.5bn. Of the 18 categories of public health expenditure, adult drug misuse services accounted for the largest share (21.2%, £532m). Substance misuse services are not a prescribed (mandatory) function for local authorities. The next largest category of expenditure was one of the prescribed functions, STI testing and treatment (15.2%). The three sexual health services categories together accounted for £645m (26% of total spend). Local authorities classified almost 14% of public health expenditure (£345m) as 'miscellaneous public health services.'

Comparison of allocation and estimated and actual grant data

Advisory Committee on Resource Allocation (ACRA), an independent expert committee, was commissioned by the Secretary of State to develop a formula for funding allocations of the public health budget to local authorities to improve population wide health and reduce health inequalities [18].

In developing a fair shares formula reflecting the relative need of each local authority, ACRA included factors about local populations, such as age, gender, levels of deprivation, premature mortality and population size, in order to predict the level of funding needed in each local authority to meet existing need [3]. The allocation is also adjusted to reflect differences in input prices [9].

We compared (i) actual and (ii) estimated public health grants data with (iii) allocation data in 2013/2014.²¹ The allocation data from the Department of Health provides details of the public health grant allocated to local authorities in 2013-14 and the data are reported in pounds and pence. The two grants datasets are from DCLG, and are reported in £'000s. The different data sources and level of detail could partly contribute to the differences between allocation data and actual grant data. We therefore rounded up the allocation data for comparison.

The three grant figures were identical for 140 of 152 local authorities.

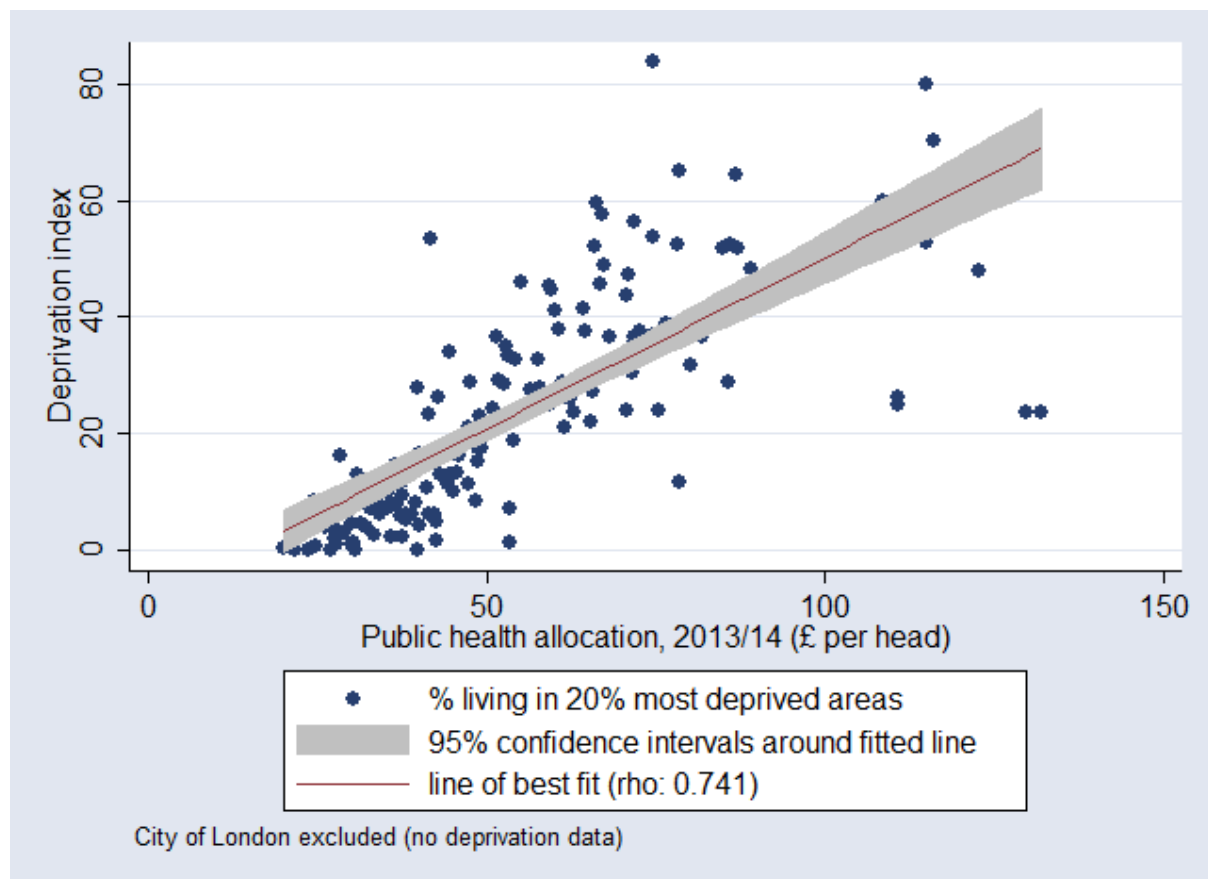
Of the remaining 12 local authorities, in 10 there were small discrepancies between the estimated and actual grants (actual and estimated grants data are rounded up to £'000s in the datasets, so the differences were £1,000). For these local authorities the allocation sometimes matched the estimated grant and sometimes matched the actual grant. However, there were large differences between actual and estimated public health grants

²¹<https://www.gov.uk/government/publications/ring-fenced-public-health-grants-to-local-authorities-2013-14-and-2014-15>.

for two local authorities. In Kent County Council, the actual grant was £1.56 million less than the estimated grant, while in Thurrock UA, the actual grant was £953,000 higher than the estimated value. In both cases, the allocation equalled the estimated grant.

Figure 2 illustrates the association between local authorities' grant allocations for 2013/14 and their level of deprivation (as a proxy for need). The positive value of the correlation coefficient (rho) indicates that local authorities with a higher percentage of their population living in the 20% most deprived areas received a higher public health allocation in 2013/14. If individuals living in greater deprivation have worse health outcomes, this means that local authorities with high levels of deprivation are more likely to have had larger budgets to tackle health inequalities.

Figure 2: Correlation between public health allocation per head and deprivation: local authorities, 2013/14



Comparison of per capita actual and forecasted expenditure

Overall total public health spend was forecast to be about £57 per head across the 152 local authorities. The actual spend was just under £53 per head (when averaged across all local authority average per capita spend²²). However, this overall difference reflected 'winners' and 'losers' across the categories of spend.

The largest absolute difference between forecasted and actual spend was for the national child measurement programme (NCMP) where mean actual spend was £8.86 per head

²² When estimated using total population and total net current expenditure for England, the mean spend per capita is slightly lower (£47).

higher than forecasted. Although 62 local authorities forecasted zero spend for this category, all reported positive values for actual spend. It is possible that local authorities struggled to identify spend on the NCMP separately from overall school nursing services. However, data published by the Health and Social Care Information Centre indicate that the overall participation rates on the NCMP are generally very high.

The miscellaneous category was the largest net 'loser' (£3.42 per head less than forecasted). Further details of how miscellaneous spend varied across local authorities is in Appendix 1.

Table 4: Actual and forecast per capita expenditure, English Local Authorities 2013/2014

Expenditure category	Forecasted (£ per head)				Actual (£ per head)			
	mean	sd	min	max	mean	sd	min	max
361 Sexual health services - STI testing and treatment	10.96	7.99	0.00	45	11.93	7.83	0.36	44
362 Sexual health services - Contraception	11.08	9.94	0.00	60	13.12	13.59	0.33	149
363 Sexual health services - Advice, prevention and promotion	3.61	6.21	0.00	53	2.13	2.90	0.00	20
365 NHS health check programme	6.26	3.93	0.00	24	4.33	3.39	0.27	24
366 Health protection - Local authority role in health protection	1.00	2.80	0.00	27	0.83	1.80	0.00	15
368 National child measurement programme	17.60	51.61	0.00	336	26.46	70.99	0.12	693
370 Public health advice	1.97	6.19	0.00	61	1.44	1.98	0.00	10
371 Obesity - adults	1.83	2.11	0.00	10	1.65	2.03	0.00	12
372 Obesity - children	3.92	6.31	0.00	53	4.03	6.80	-2.56	45
373 Physical activity - adults	0.92	1.38	0.00	8	1.38	1.93	0.00	13
374 Physical activity - children	1.31	2.38	0.00	19	2.77	7.54	0.00	69
376 Substance misuse - Drug misuse - adults	15.56	9.44	0.00	48	15.07	8.77	0.00	47
377 Substance misuse - Alcohol misuse - adults	5.44	4.61	0.00	21	5.37	5.05	0.00	33
378 Substance misuse - (drugs and alcohol) - youth services	15.15	23.63	0.00	147	15.34	30.03	0.00	231
380 Smoking and tobacco - Stop smoking services and interventions	2.94	1.72	0.00	10	2.85	2.12	0.00	20
381 Smoking and tobacco - Wider tobacco control	0.55	1.45	0.00	16	0.53	1.79	-0.01	20
383 Children 5–19 public health programmes	26.15	17.53	0.00	123	28.37	17.36	0.75	92
385 Miscellaneous public health services	10.67	12.46	0.00	87	7.25	6.14	0.00	28
390 TOTAL PUBLIC HEALTH	56.76	27.62	20.17	220	52.88	26.05	18.95	210

Notes: sd: standard deviation. Results are shown for 152 upper tier and unitary local authorities. Per-capita values in the spend categories use different population denominators and so are not additive.

The following graphs compare per capita actual and forecasted expenditure of English local authorities in 2013/2014. The blue box shows the actual expenditure and the red box shows the forecasted expenditure. As the data are highly skewed, the graphs show percentile values rather than means.

The line across the box indicates the median value, the lower hinge and the upper hinge of the box illustrate the 25th percentile and 75th percentile separately. The adjacent lines present the lower and upper adjacent value separately. There are also some outside values

as some local authorities have a very large per capita actual or forecasted expenditure compared to others.

Figure 3 shows how total public health spend per capita varies across local authorities and the differences between actual and forecasted spend. The figure indicates that actual and forecasted per capita expenditure were similar. Figure 4 shows the same constructs, but for each of the 18 categories of expenditure. Note that the y-axis scale varies across categories of spend. The figure shows that actual and forecasted per capita expenditure were similar in most of the 18 expenditure categories.

Figure 3: Comparison of LA Actual (RO) and Forecasted (RA) per capita expenditure: total spend, 2013/2014

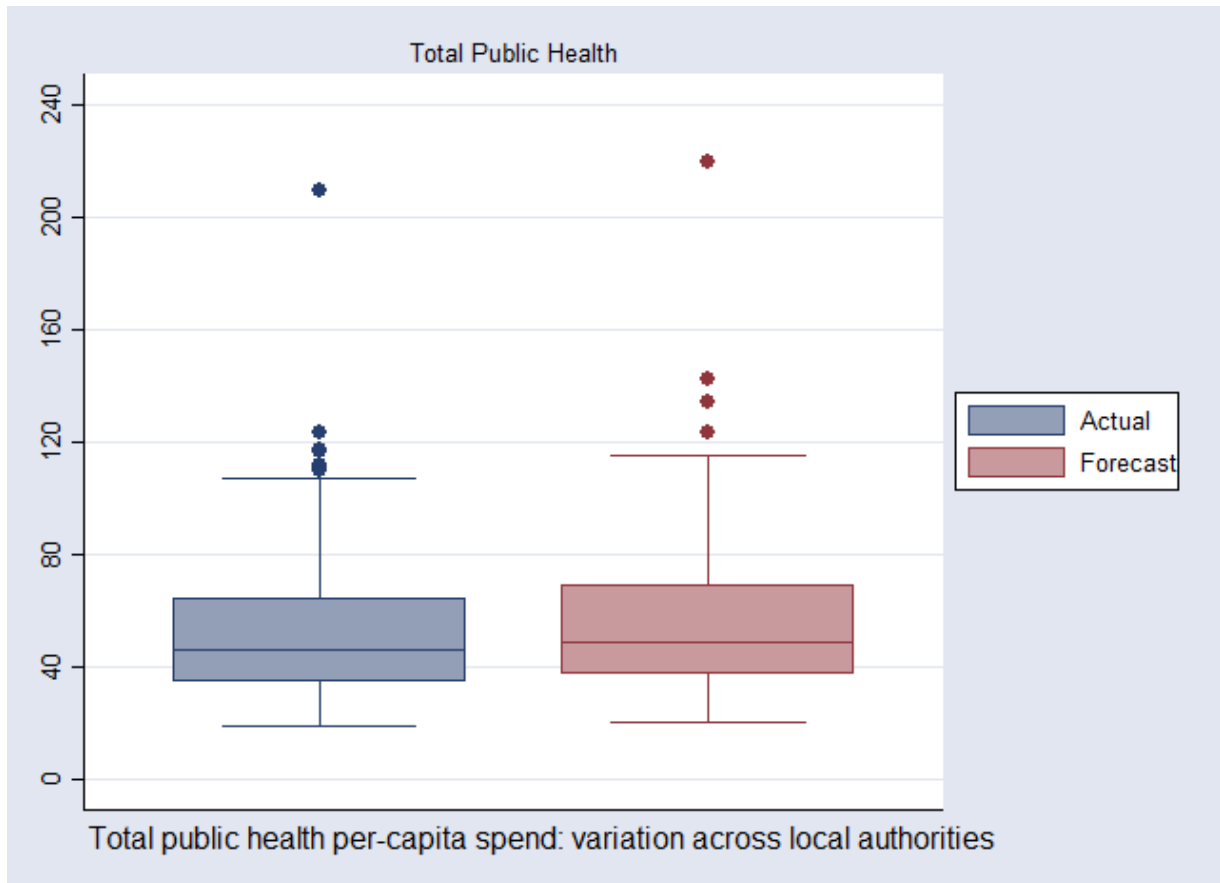
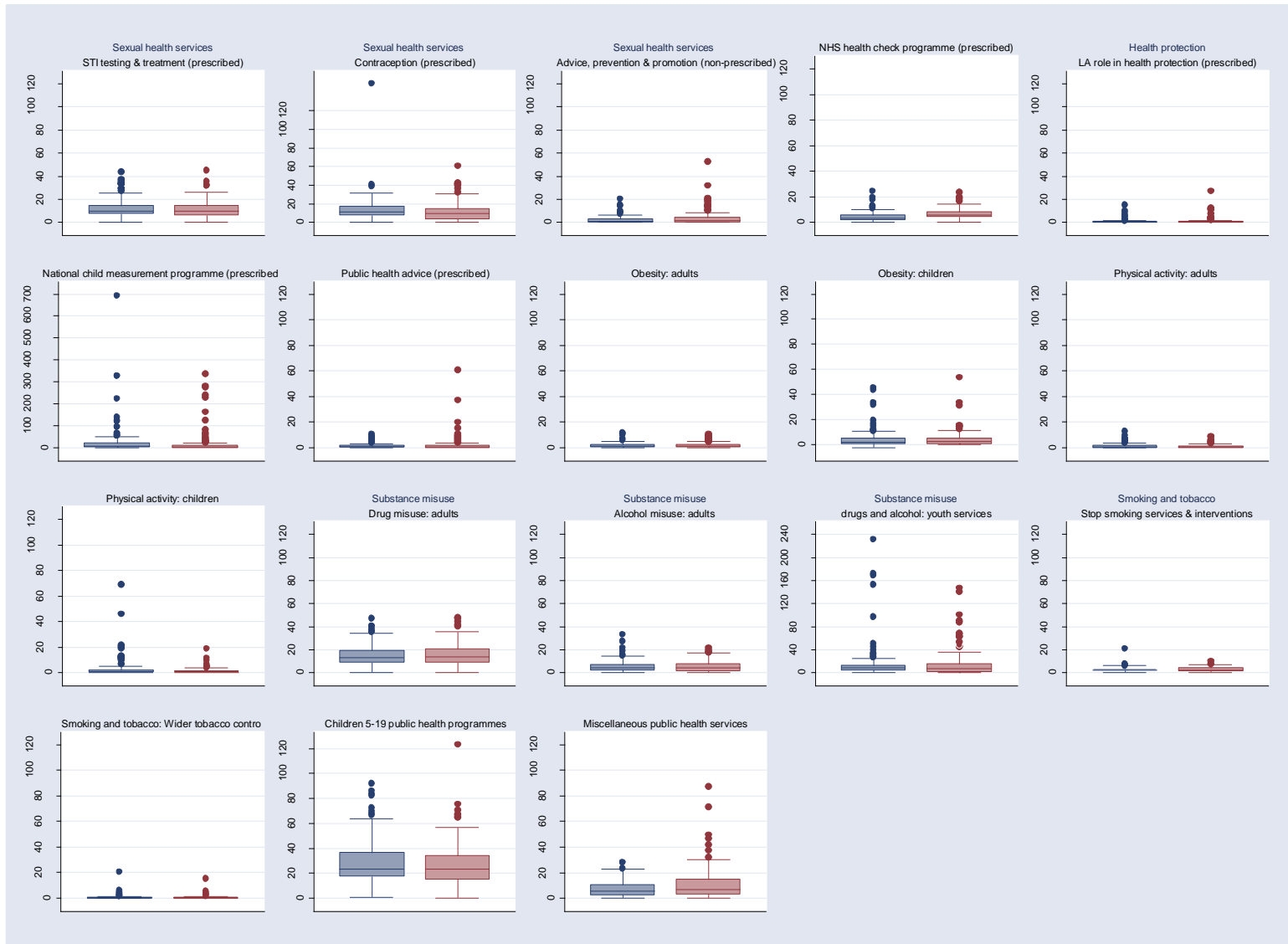


Figure 4: Comparison of LA Actual (RO) and Forecasted (RA) per capita expenditure: 18 categories of spend, 2013/2014

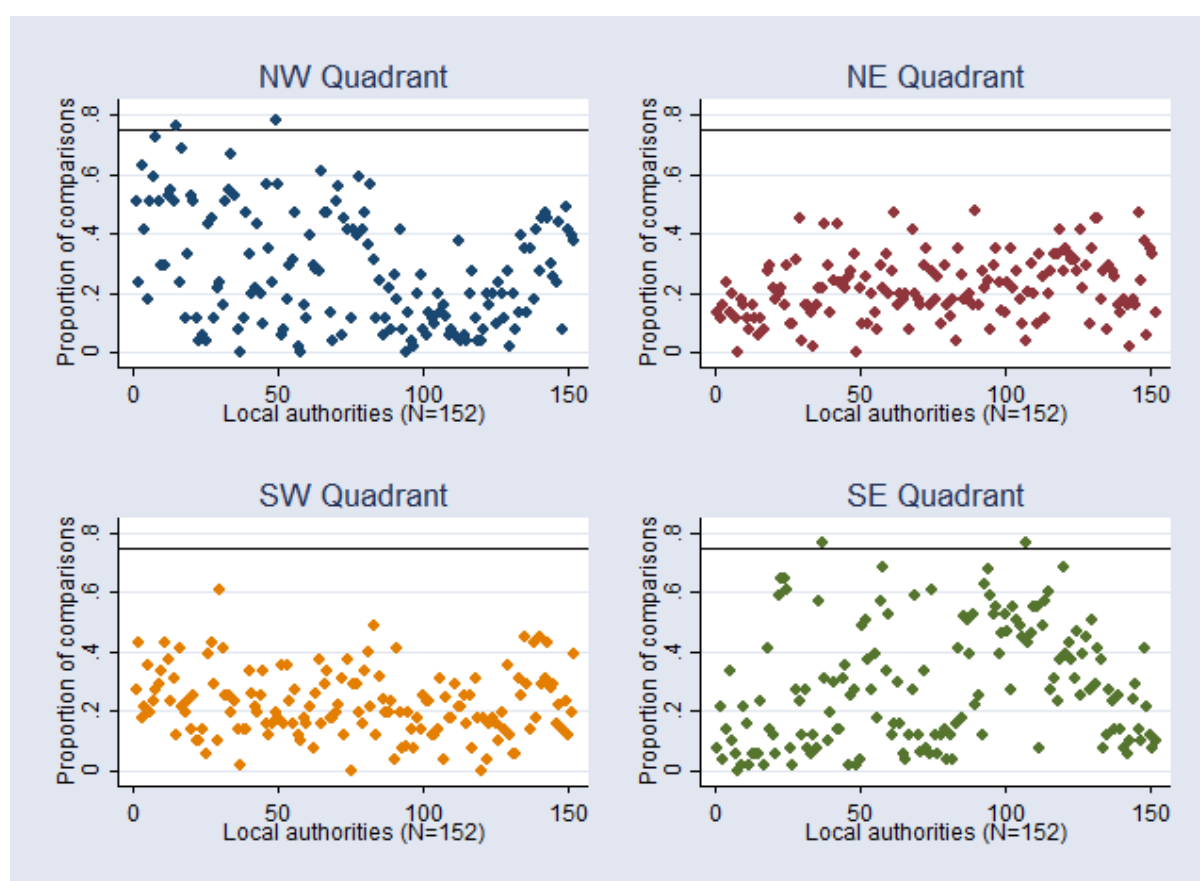


Notes: The boxplots follow the order of 18 categories in Table 2. Blue and red figures present RO and RA per capital expenditure respectively. All box plots use the scale £0 to £120, except for the plot of expenditure on the NCMP (£0 to £700) and substance misuse for youth services (£0 to £240).

Quadrant analysis

We used a simple 'quadrant' analysis to identify local authorities with levels of expenditure and outcomes consistently above or below average. In Figure 5, each local authority is represented by a dot in each of the four quadrants. The horizontal reference line is at 0.75: organisations that were located in a quadrant in at least three-quarters of the 51 outcome/spend comparisons are visible as dots above the reference line.

Figure 5: Scatter graph showing the distribution of local authorities across the 4 quadrants



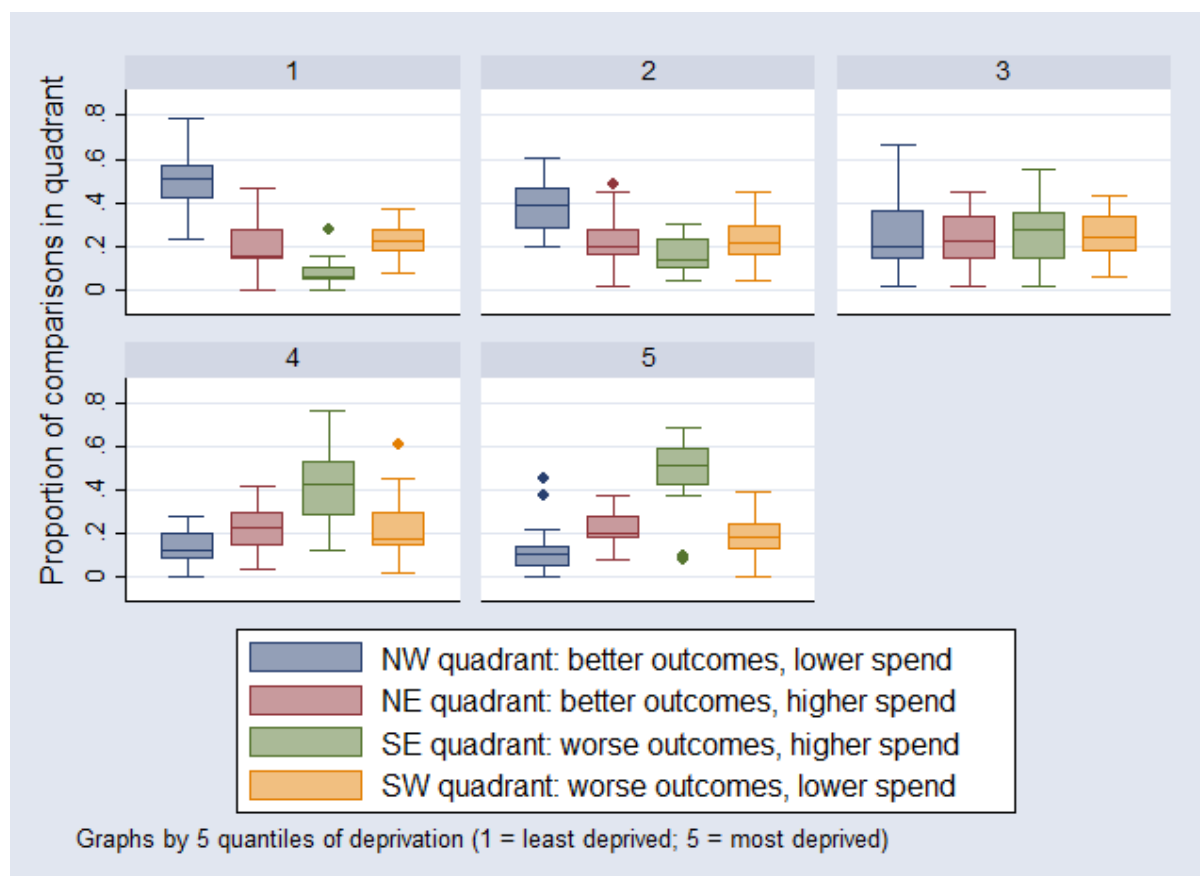
Two shire counties, Buckinghamshire CC and Hertfordshire CC, were located above the 75% reference line in the north-west (NW) quadrant, i.e. their per-capita spend was lower than average (median) and their outcomes were better than average (median). These characteristics are likely to reflect the relatively affluent populations of local authorities which makes them more likely to be located in the NW quadrant. Pearson's correlation coefficient (ρ) was -0.80 indicating a strong negative relationship between likelihood of NW location and deprivation level.

Durham County Council (classed as a unitary authority, UA) and Sunderland City Council (a metropolitan district) were located in the south east (SE) quadrant in 75% of comparisons, i.e. they typically had higher than average spend and poorer outcomes. These characteristics are likely to reflect the relatively disadvantaged populations of local authorities typically located in the SE quadrant (ρ : 0.84).

Two unitary authorities, Plymouth UA and the Isles of Scilly, were in the south-west quadrant for at least half the comparisons, i.e. they had worse than average outcomes and lower than average spend. No local authority had better outcomes and higher spend

(north-east quadrant) in over 50% of comparisons, but three authorities were located in this quadrant for 45% to 49% of comparisons: Kingston upon Thames; Stockport MBC; and Leicestershire CC. Table 6 provides an overview of local authority characteristics by total per capita PH spend (Appendix 3). Figure 6 shows clearly that the likelihood that a local authority will be located in the NW quadrant (blue box) diminishes as the level of deprivation increases, with the reverse for the SE quadrant (green box).

Figure 6: Box plot showing how quadrant location varied with level of deprivation



Comparison of outcomes vs. spend – by categories of spend

We used scatter plots to compare local authority spend in each of the 18 categories of expenditure against the outcomes selected from the PHOF. Results are presented below, and follow the category ordering adopted in the DCLG revenue returns [10]. We also plotted the median and interquartile values of expenditure on each graph to show the overall distribution and so that outliers can be seen more clearly.

This section provides results of the comparison of public health spend in 2013/14 and a range of outcomes, drawn from the PHOF. Spend is measured by net current expenditure and is converted to per capita values by dividing by relevant local authority populations (e.g. age specific populations). Most outcomes relate to 2013 but if data were not available for this year then the most recent data were used.

In each of the following sections, details of the local authorities in the highest and lowest 5% of expenditure are provided for each category of expenditure (those in the highest 5% of

spend are shaded grey). Scatter plots are used to show how per-capita spend varies with relevant outcome(s). We are also able to identify local authority outliers (in terms of spend) for each category.

First, total public health spend is shown for the 152 local authorities. This reflects historical spend and the difference to target allocation that is to be addressed incrementally over the next few years. We then provide a separate section for each of the 18 categories of expenditure. Where there are no clearly relevant outcome measures (e.g. for Public Health Advice to NHS commissioners, category 370) we show only variation in expenditure. The choice of indicators may be unclear because of joint responsibilities or pre-existing roles e.g. health protection. As noted previously, the scatter plots are descriptive and show cross-sectional associations only. Causal relationships between spend and outcomes cannot be inferred from these plots.

390 Total Public Health Expenditure

The results provided in this section relate to total public health expenditure, which is the sum of spend across all 18 expenditure categories. Mean per-capita expenditure across all local authorities was £52.88 (see Table 4).

The table below provides an overview of outcomes used to illustrate variation with spend across local authorities, and shows how each outcome was correlated with spend.

		Total public health spend per person (rho)
ind_01i	Healthy life expectancy at birth	-0.66
ind_01ii	Life Expectancy at birth	-0.49
ind_101i	Children in poverty (all dependent children under 20)	0.82
ind_117	Fuel Poverty	0.26
ind_403	Mortality rate from causes considered preventable (provisional)	0.63
ind_404i	Under 75 mortality rate from all cardiovascular diseases	0.63
ind_404ii	Under 75 mortality rate from cardiovascular diseases considered preventable	0.54

Healthy life expectancy and life expectancy were negatively associated with total public health spend (Figure 7), i.e. longer life expectancy was associated with lower total spend per capita. The relationship between spend and measures of poverty was positive (Figure 8), with the poverty measure based on children showing a stronger correlation with spend than that based on fuel poverty. The relationship between spend and the three mortality rates was positive (Figure 9), i.e. higher mortality rates indicated higher total public health spend. This reflects the use of premature (<75) mortality ratios to determine funding allocations.

The following table lists local authorities in the bottom and top 5% of total public health expenditure per capita. Total spend is likely to reflect historical allocations and may not fully align with local need.

	Spend per head (£)	ind_0	ind_0	ind_1	ind_1	ind_4	ind_4	ind_4	%	%	% living in	Class
	390	li	lii	01i	17	03	04i	04ii	non-	rural	greatest	
									white		deprivation	
Wokingham UA	18.95	70.1	83.2	6.4	5.6	132.0	54.9	37.0	11.6	17.7	0	3
Surrey CC	20.29	69.1	83.1	9.2	7.3	136.9	54.4	33.3	9.6	23.9	0.3	4
Windsor & Maidenhead UA	21.81	69.2	82.8	8.5	7.4	148.3	66.7	42.8	13.9	18.1	0	3
East Riding of Yorkshire UA	22.57	65.1	81.5	12.0	8.3	170.7	72.9	49.9	1.9	70.9	8.3	3
Bracknell Forest UA	23.39	67.5	82.8	10.4	4.9	157.9	67.0	43.1	9.4	6.5	0	3
North Yorkshire CC	24.29	66.3	81.9	10.5	10.0	160.6	70.2	45.6	2.7	73.7	4.4	4
Buckinghamshire CC	24.63	69.2	83.1	9.3	7.6	143.4	61.3	36.6	13.6	48.0	0	4
Hampshire CC	24.75	66.9	82.7	10.9	6.3	147.6	58.5	38.3	5.0	32.8	3.7	4
Camden	106.97	63.4	83.6	30.0	8.8	179.4	70.8	42.0	33.7	0.0	24.9	1
Middlesbrough UA	109.65	58.3	78.4	32.5	15.1	258.4	102.1	69.9	11.8	0.3	54.3	3
Kensington & Chelsea	110.56	67.1	84.4	21.7	8.8	141.3	54.9	30.7	29.4	0.0	23.5	1
Hackney	112.15	58.4	80.7	30.1	8.1	225.2	116.3	70.7	45.3	0.0	79.9	1
Westminster	116.54	66.0	83.8	31.3	8.4	172.3	74.8	45.4	38.3	0.0	23.5	1
Islington	117.46	57.9	80.8	34.5	7.4	209.4	105.8	66.0	31.8	0.0	52.9	1
Blackpool UA	123.46	56.4	77.3	29.3	13.5	291.3	125.2	81.9	3.3	0.0	48	3
City of London	209.73	NR	NR	12.2	2.4	124.6	NR	NR	21.4	0.0	NR	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

See above for_outcome definitions NR: not reported

Figure 7: LA net current expenditure per capita (total public health): variation with life expectancy

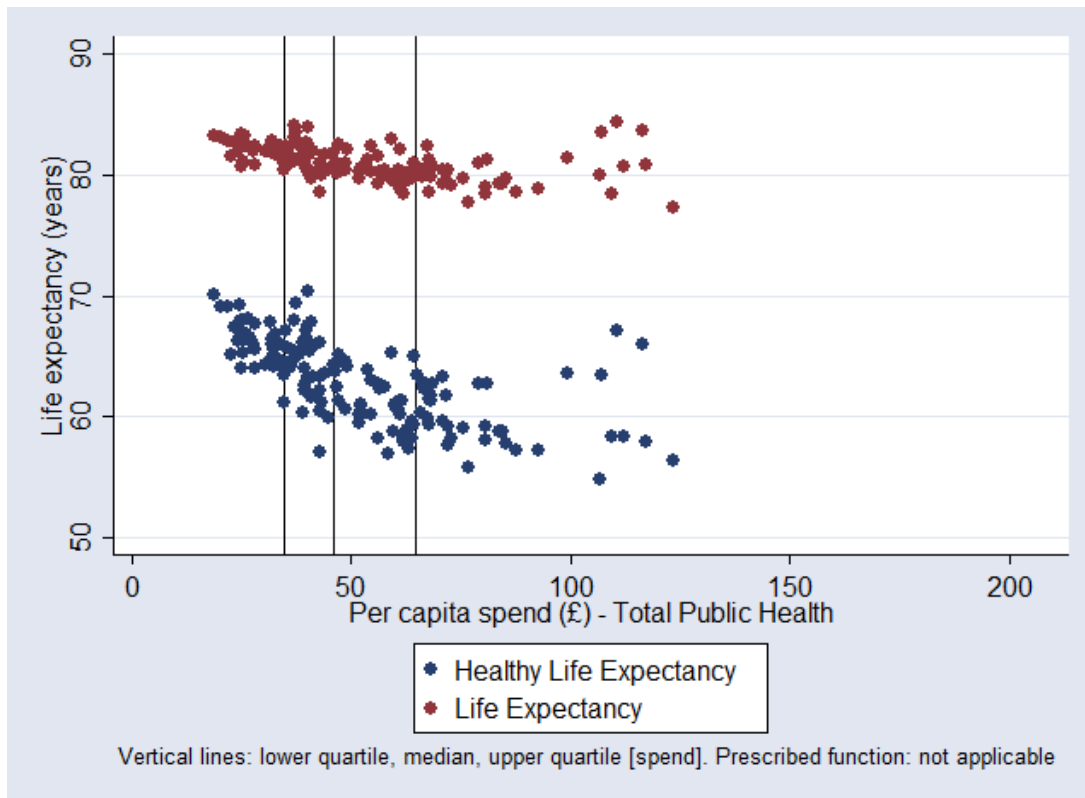


Figure 8: LA net current expenditure per capita (total public health): variation with measures of poverty

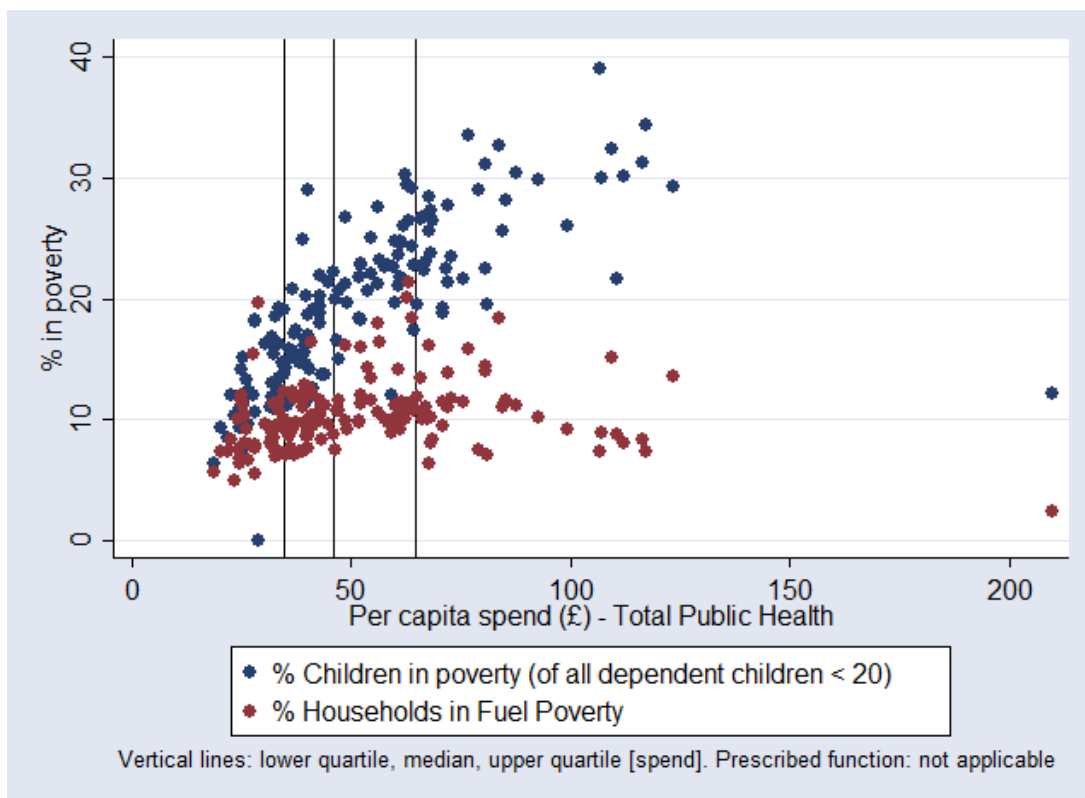
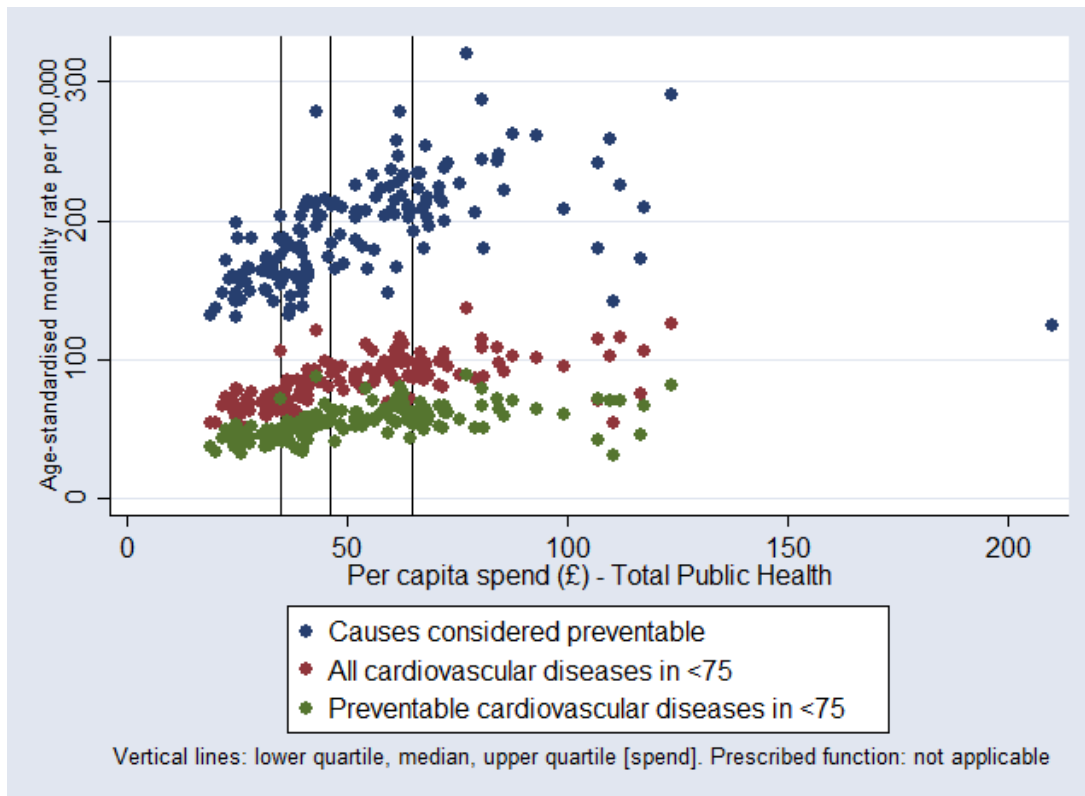


Figure 9: LA net current expenditure per capita (total public health): variation with mortality rates



36X Sexual health services

In the DCLG guidance for local authorities' revenue account returns [10], public health expenditure on sexual health services is reported under three lines (rows):

- 361 testing and treatment of STI (sexually transmitted infections)
- 362 Contraception
- 363 advice, prevention and promotion

Expenditure on lines 361 and 362 are prescribed (mandatory) functions whereas spend on 363 is non-prescribed. Figure 10 suggests that local authorities are spending less on the non-prescribed category, as shown by the green dots which represent per-capita spend on advice, prevention and promotion.

The graph on the left includes spend by the City of London which was £149 per female adult aged 13 to 54 in 2013/14. However, there were no relevant outcomes from the PHOF available for the City of London, so the authority is excluded from the remaining graphs showing sexual health spend. The graph on the right excludes the City of London and shows that maximum spend on sexual health services by remaining local authorities was around £40 per head. As a proportion of total public health spend, spend on sexual health services averaged 15.7% for testing and treatment (361), 7.3% for contraception (362) and just 2.8% for advice (363).

Figure 10: LA net current expenditure per capita (SHS): three types of expenditure, by LA

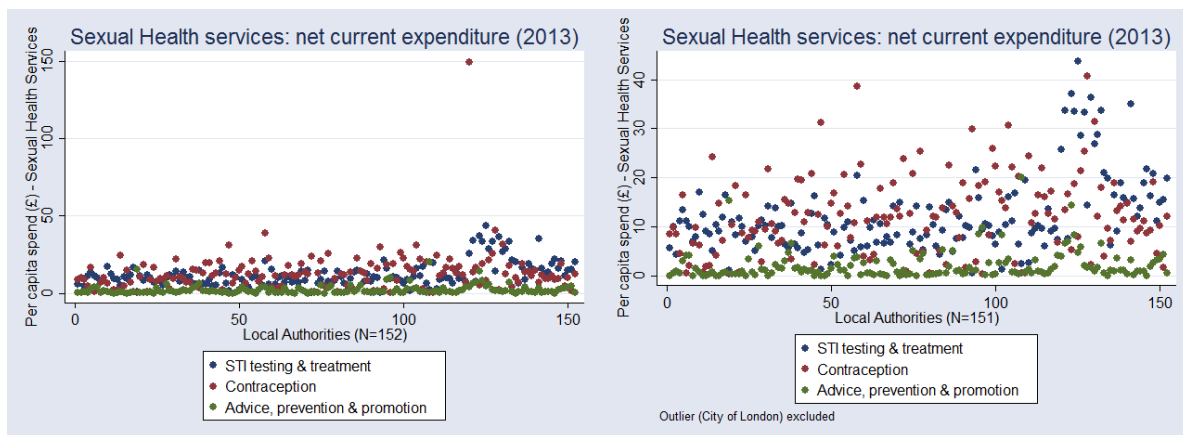
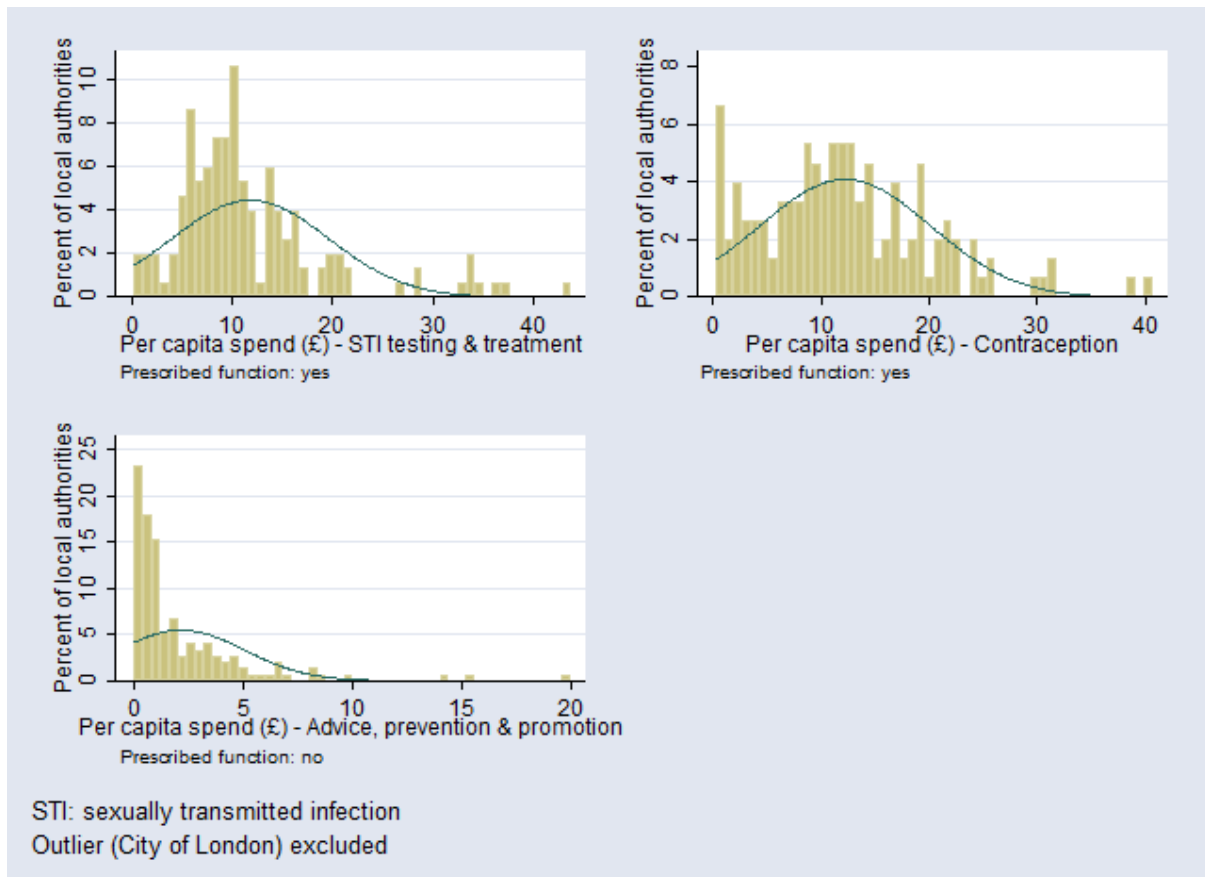


Figure 11 shows the variation across local authorities in per-capita spend on STI testing and treatment, contraception and advice, prevention and promotion.

Figure 11: Histogram of spend on Sexual Health Services: LA variation for 3 types of expenditure



361 Sexual health services - STI testing and treatment

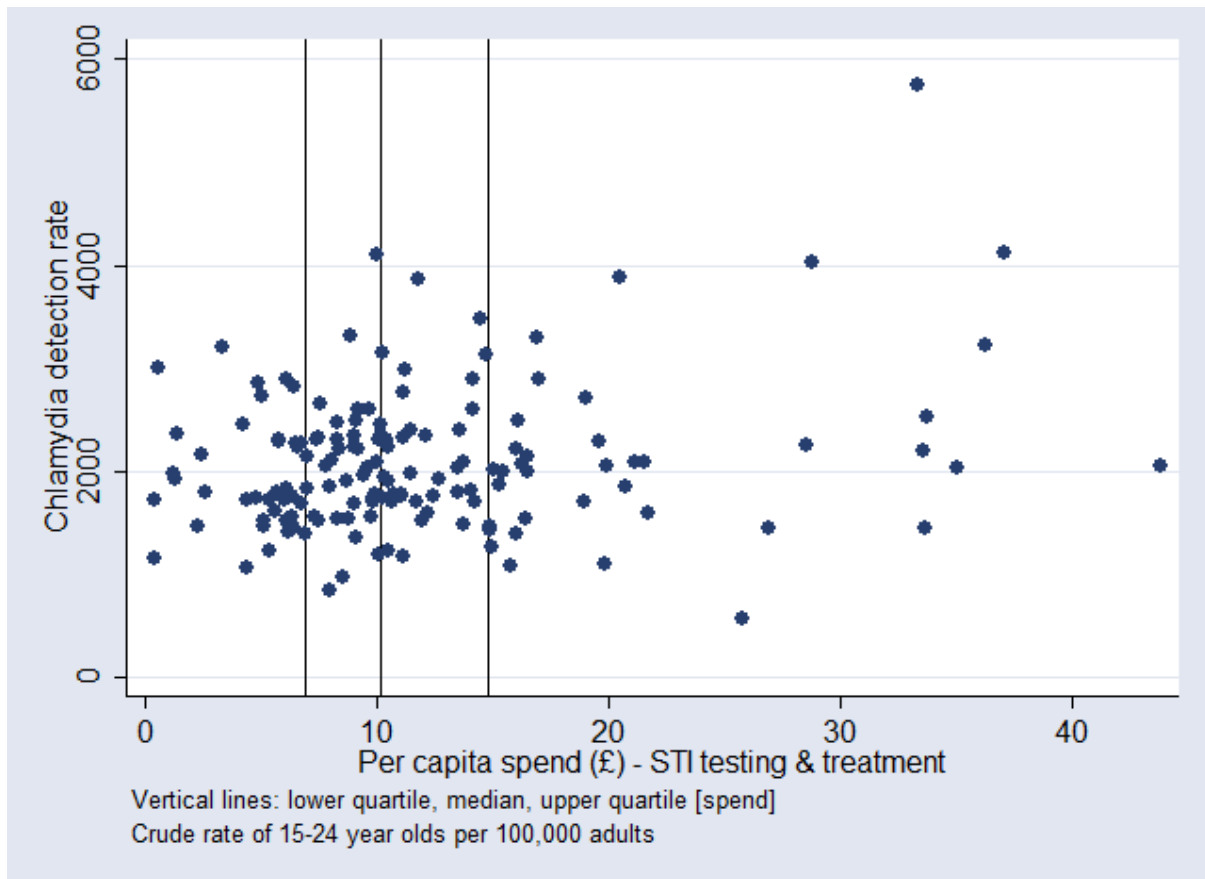
The table below shows local authorities in the bottom and top 5% of per-capita spend on STI services.

The high spending authorities are all London Boroughs. This is a prescribed function. The variation by local authority in spend against the chlamydia detection rate is shown in Figure 12, with per-capita spend estimated using the local authority population aged 15 to 64. The correlation (rho) between spend per capita on STI services and the chlamydia detection rate was 0.24, i.e. higher spend was weakly associated with better outcomes.

	Spend per head (£) 361	ind_302 ii	% non- white	% rural	% living in greatest deprivation	Class
Shropshire UA	0.36	1149	2.04	74.45	2.7	3
Telford & the Wrekin UA	0.37	1719	7.34	15.98	23.6	3
Wigan MBC	0.55	3002	2.72	14.34	30.3	2
Warrington UA	1.24	1978	4.07	17.21	17.3	3
Sheffield	1.29	1922	16.31	1.84	34.9	2
Herefordshire UA	1.40	2360	1.80	66.53	6.1	3
East Riding of Yorkshire UA	2.29	1471	1.91	70.87	8.3	3
Birmingham	2.39	2167	42.07	0.03	56.3	2
Hammersmith & Fulham	33.58	2190	31.93	0	26.3	1
Westminster	33.64	1439	38.32	0	23.5	1
Camden	33.78	2526	33.71	0	24.9	1
Haringey	35.04	2036	39.46	0	57.6	1
Southwark	36.25	3218	45.77	0	35.6	1
Hackney	37.07	4115	45.34	0	79.9	1
Islington	43.79	2048	31.83	0	52.9	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.
ind_302ii: chlamydia detection rate per 100,000 15-24 year olds.

Figure 12: LA net current expenditure per capita (SHS - STI testing): variation with chlamydia detection rate



362 Sexual health services - Contraception

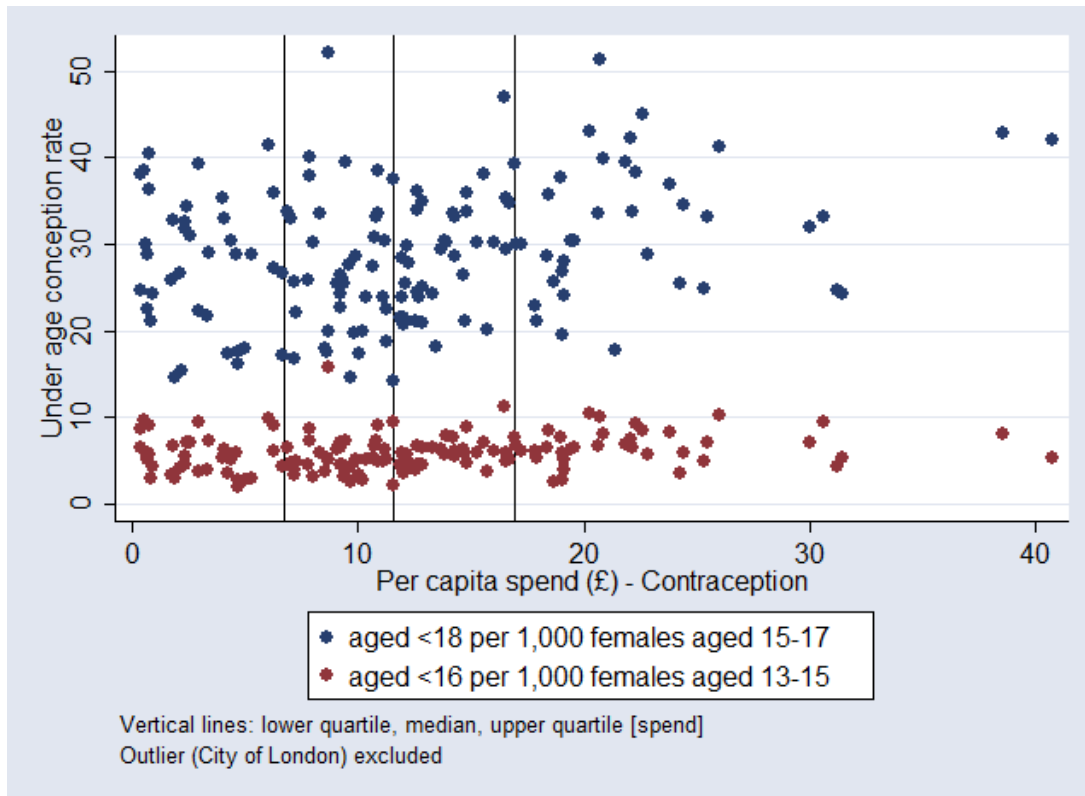
This expenditure category is a prescribed function. Nonetheless, there is a wide variation in spend per head (females aged 13 to 54). Figure 13 shows there is no clear association between spend on contraception and the number of teenage pregnancies and this is confirmed by the correlation coefficients (0.26 and 0.20 respectively).

The table below shows local authorities in the bottom and top 5% of spend.

	Spend per head (£) 362	ind_204	ind_204_16	% non-white	% rural	% living in greatest deprivation	Class
Warrington UA	0.33	24.77	6.48	4.07	17.21	17.3	3
St Helens MBC	0.36	38.10	8.64	1.96	23.77	36.5	2
Coventry	0.52	38.56	9.61	26.16	0.75	32.8	2
Birmingham	0.58	30.00	6.03	42.07	0.03	56.3	2
Bedford UA	0.64	28.86	5.15	19.45	30.49	10.7	3
West Sussex CC	0.68	22.55	5.93	6.25	42.24	3.7	4
Hartlepool UA	0.74	36.28	5.71	2.31	2.85	48.2	3
Halton UA	0.77	40.44	9.15	2.15	3.62	48.8	3
Wigan MBC	29.99	31.96	7.21	2.72	14.34	30.3	2
Newcastle	30.65	33.12	9.41	14.51	1.83	37.6	2
Herefordshire UA	31.20	24.73	4.41	1.80	66.53	6.1	3
Tower Hamlets	31.43	24.30	5.36	54.81	0	70.2	1
Blackpool UA	38.56	42.93	8.04	3.33	0	48	3
Lewisham	40.71	41.99	5.32	46.47	0	36.6	1
City of London	148.90	NR	NR	21.37	0	NR	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.
ind_204: conception rate, under 18s; ind_204_16: conception rate, under 16s. NR: not reported

Figure 13: LA net current expenditure per capita (SHS - contraception): variation with under-18s conception rate



363 Sexual health services - Advice, prevention and promotion

This expenditure category is a non-prescribed function. Nonetheless, there is a wide variation in spend per head (population aged 10 to 64) and there was a small negative correlation between spend and outcomes.

Figure 14 shows local authority spend on advice, prevention and promotion plotted against the rate of successful HPV vaccination (correlation: -0.095) and Figure 15 illustrates how spend varied with the cervical screening coverage (correlation: -0.29). Neither of these optimally captures local authority outcomes; teenage conception rates are plausible alternatives but these were also poorly correlated with spend (0.08 for under 18s; 0.01 for under 16s).

The table below shows local authorities in the bottom and top 5% of spend.

	Spend per head (£) 363	ind_220 ii	ind_303 xii	% non- white	% rural	% living in greatest deprivation	Class
Barnet	0	65.18	69.52	35.87	0.12	5.7	1
Herefordshire UA	0	75.14	85.06	1.80	66.53	6.1	3
Medway Towns UA	0	75.74	84.86	10.36	10.41	15	3
Northamptonshire CC	0	74.14	93.74	8.55	39.19	13.1	4
Oxfordshire CC	0	74.40	92.51	9.15	55.90	5	4
Peterborough UA	0	71.98	84.72	17.47	12.90	34.1	3
Redcar & Cleveland UA	0	75.44	91.20	1.46	44.32	35.5	3
Staffordshire CC	0	76.14	93.47	4.35	37.80	9.4	4
Windsor & Maidenhead UA	0	74.71	83.99	13.87	18.12	0	3
Worcestershire CC	0	75.52	86.39	4.26	40.77	10	4
Sheffield	8.28	74.64	89.96	16.31	1.84	34.9	2
Hammersmith & Fulham	8.38	58.63	73.34	31.93	0	26.3	1
Liverpool	8.50	68.16	88.44	11.09	0	64.4	2
St Helens MBC	9.92	75.14	91.28	1.96	23.77	36.5	2
Hackney	14.35	68.29	68.19	45.34	0	79.9	1
Warrington UA	15.39	75.64	90.05	4.07	17.21	17.3	3
Birmingham	19.99	67.81	87.90	42.07	0.03	56.3	2

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

ind_220ii: cervical cancer screening rate; ind_303xii: HPV vaccination rate per 100 girls aged 12 to 13.

Figure 14: LA net current expenditure per capita (SHS – advice): variation with HPV vaccination rate

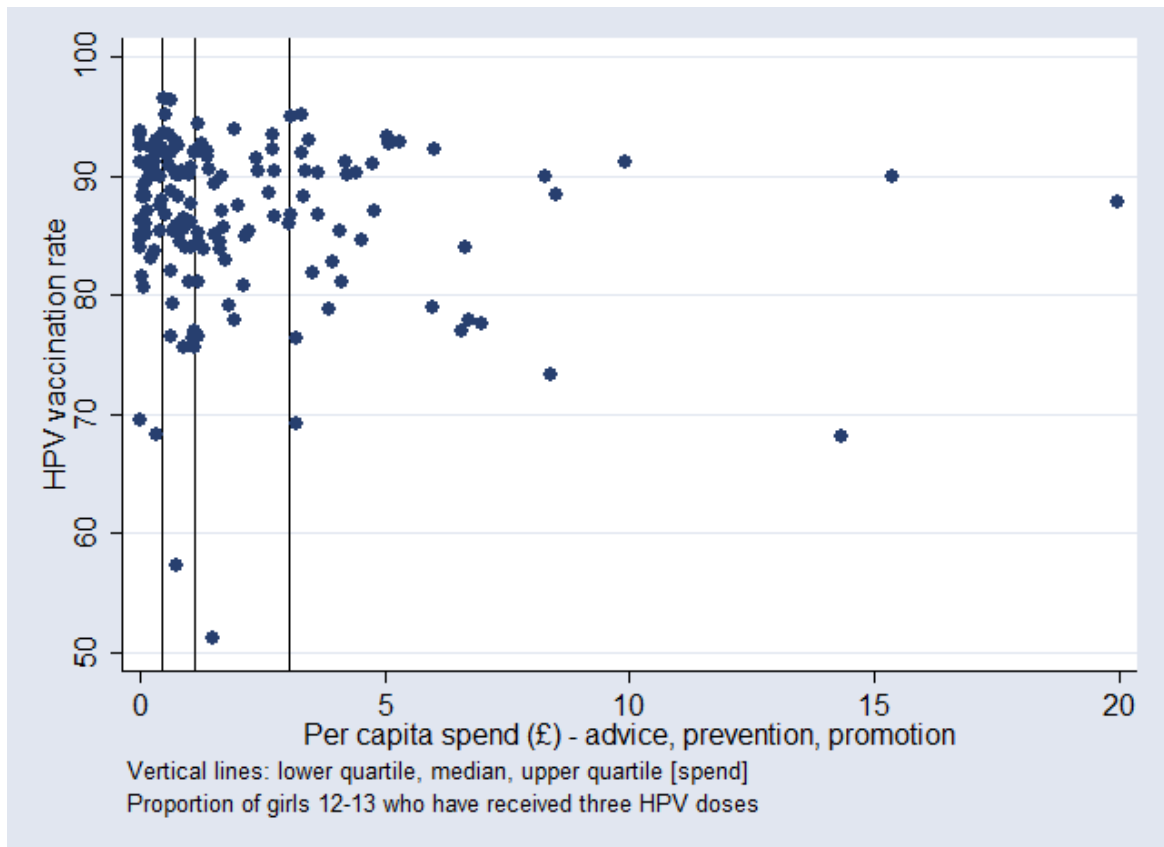
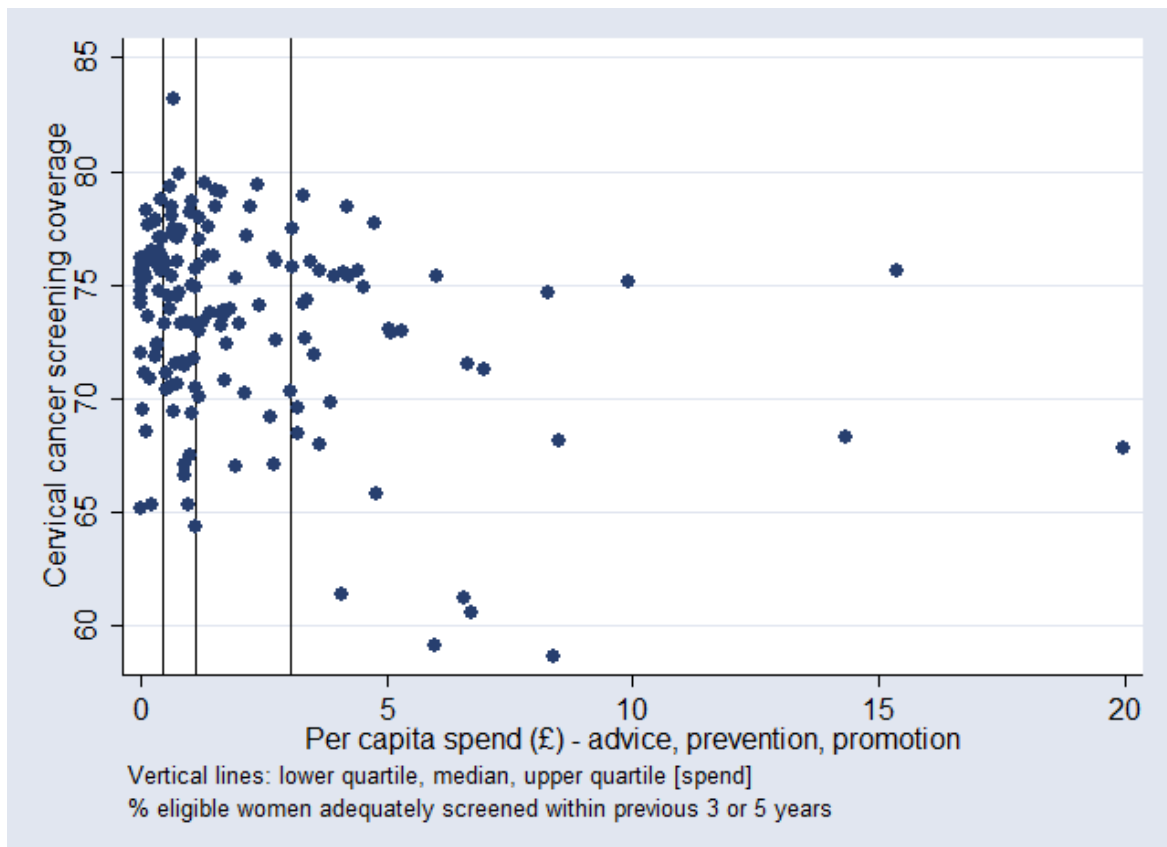


Figure 15: LA net current expenditure per capita (SHS – advice): variation with cervical cancer screening rate



365 NHS health check programme

The NHS Health check programme is a prescribed function for local authorities. We compared per-capita spend on the programme with the three indicators listed below, all of which are specifically designed to capture outcomes for this programme.

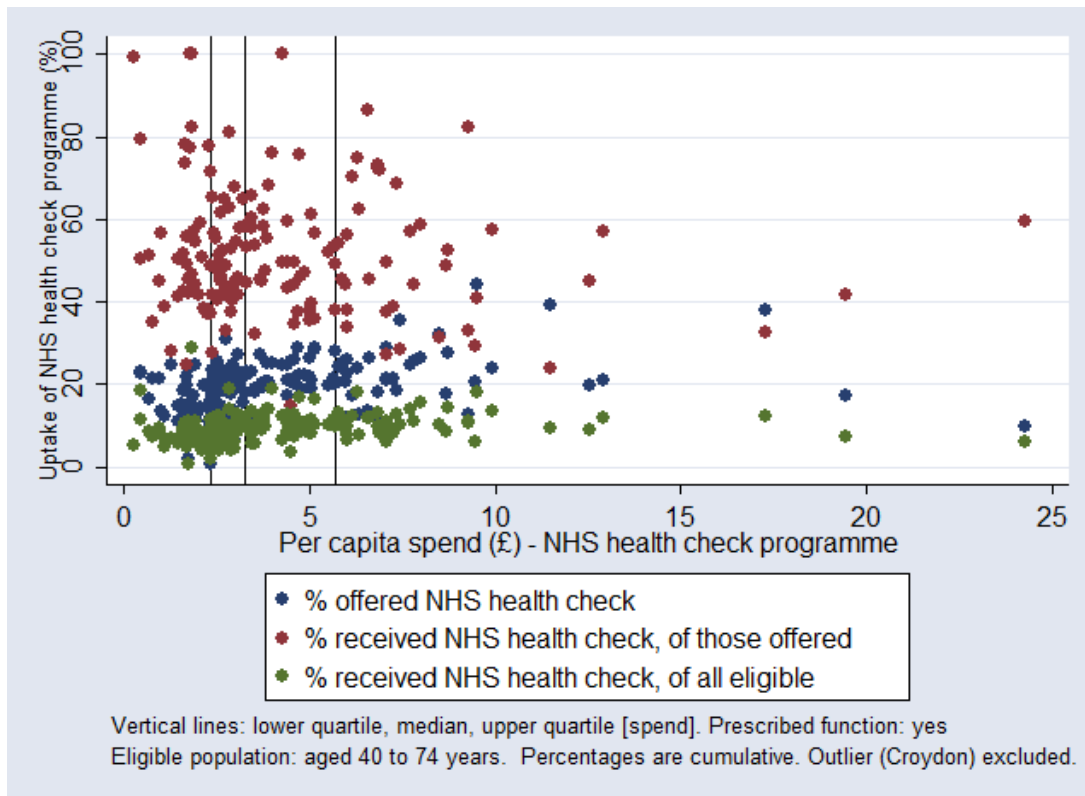
		NHS Health Check spend per person (rho)
ind_2.22iii	Cumulative % of the eligible population aged 40-74 offered an NHS Health Check	0.31
ind_2.22iv	Cumulative % of the eligible population aged 40-74 offered an NHS Health Check who received an NHS Health Check	-0.11
ind_2.22v	Cumulative % of the eligible population aged 40-74 who received an NHS Health check	0.15

The table below shows local authorities in the bottom and top 5% of spend. Per capita values are based on data provided by HSCIC on the NHS health check programme, i.e. the eligible population (which excludes those with certain chronic conditions). We excluded Croydon local authority from the comparisons because it reported a value in excess of 200% for outcome measure 2.22iv (a measure shown by red dots in Figure 16). Mean per-capita spend was £4.33 (median: £3.25), equating to around 2.1% of total public health spend.

	Spend per head (£) 365	ind_22 2iii	ind_22 2iv	ind_22 2v	% non-white	% rural	% living in greatest deprivation	Class
Bradford	0.27	5.1	99.3	5.1	32.6	12.6	45.2	2
Medway Towns UA	0.46	22.6	50.3	11.4	10.4	10.4	15	3
Stockport MBC	0.47	23.3	79.5	18.5	7.9	8.6	12.9	2
Brent	0.69	16.6	51.4	8.6	63.7	0	27.9	1
Enfield	0.76	21.5	34.9	7.5	39.0	0.1	27.7	1
Shropshire UA	0.93	21.3	44.9	9.5	2.0	74.5	2.7	3
North Lincolnshire UA	1.00	13.4	56.7	7.6	4.0	52.4	19.8	3
Wakefield	1.08	12.2	38.8	4.7	4.6	30.0	28.7	2
Thurrock UA	9.92	23.8	57.7	13.7	14.1	13.9	13.3	3
Wolverhampton	11.48	39.4	23.8	9.4	32.0	0	53.8	2
Camden	12.56	19.8	44.8	8.9	33.7	0	24.9	1
Warrington UA	12.91	20.9	57.1	11.9	4.1	17.2	17.3	3
Lambeth	17.29	38.2	32.4	12.4	42.9	0	36.6	1
Sandwell	19.43	17.1	41.9	7.2	30.1	0	59.5	2
City of London	24.27	9.9	59.4	5.9	21.4	0	NR	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.
NR: not reported. Outcome definitions: see above

Figure 16: LA net current expenditure per capita (NHS Health Check): variation with offer and uptake rates



366 Health protection - Local authority role in health protection

Health protection seeks to minimise the harm caused by communicable diseases and the health impact from environmental hazards [19]. Health protection is a prescribed function for local authorities, and we compared per-capita spend with the indicators listed below. Local authorities' new public health role builds on previous roles in managing the environment and air quality (3.01). Although NHS England remains responsible for commissioning flu vaccinations, these outcomes are included in the PHOF and these outcomes are amongst those used in SPOT for comparisons with health protection spend. However, the correlation coefficients between spend and the outcome indicators were small. Mean per-capita spend was £0.83 (median: £0.33), typically accounting for just 1.4% of total public health spend.

		Health protection spend per person (rho)
ind_3.01	Fraction of mortality attributable to particulate air pollution (%)	-0.07
ind_3.02ii	Chlamydia detection rate (15-24 year olds) – CTAD (per 100,000)	0.14
ind_3.03xii	Population vaccination coverage – HPV (%)	0.01
ind_3.03xiv	Population vaccination coverage - Flu (aged 65+) (%)	0.06
ind_3.03xv	Population vaccination coverage - Flu (at risk individuals) (%)	0.10

	Spend per head (£) 366	ind_301	ind_302ii	ind_303xi	ind_303xv	ind_303xv	% non-white	% rural	% living in greatest deprivation	Class
Barnsley	0.00	5	2474	90.2	72.5	52.2	2.1	20.0	32.7	2
Isles of Scilly	0.00	3.3	1060	NR	79.3	77.0	1.2	100	.	3
Nottinghamshire CC	0.00	5.2	2207	88.3	75.7	51.1	4.5	31.5	16.2	4
Hertfordshire CC	0.00	5.5	1901	85.5	76.1	53.8	12.4	22.1	1	4
Barnet	0.00	6.4	1098	69.5	71.8	51.7	35.9	0.1	5.7	1
Oxfordshire CC	0.00	5.1	1267	92.5	75.8	54.5	9.1	55.9	5	4
Trafford	0.01	4.8	1769	87.2	78.2	55.6	14.5	0.4	11.2	2
Stockton-on-Tees UA	3.92	4.2	3210	90.4	73.5	49.4	5.4	14.1	29.7	3
City of London	4.71	8.3	560	85.4	64.6	46.6	21.4	0	.	1
Westminster	5.69	7.7	1439	77.9	70.8	53.2	38.3	0	23.5	1
Coventry	6.10	5.5	2291	92.5	72.9	57.8	26.2	0.7	32.8	2
Knowsley	8.63	4.8	2090	94.4	77.7	55.8	2.8	1.4	60	2
Blackburn with Darwen UA	9.92	4.3	1472	90.3	76.9	59.2	30.8	5.0	52.4	3
Blackpool UA	15.48	3.4	3892	78.9	74.0	52.8	3.3	0	48	3

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.
NR: not reported. Outcome definitions: see above

The table above shows local authorities in the bottom and top 5% of spend on health protection. The per capita values are based on total population. The indicators used for the scatter plots against spend were selected from the Health Protection domain of the PHOF.

Figure 17: LA net current expenditure per capita (Health Protection): variation with mortality due to air pollution

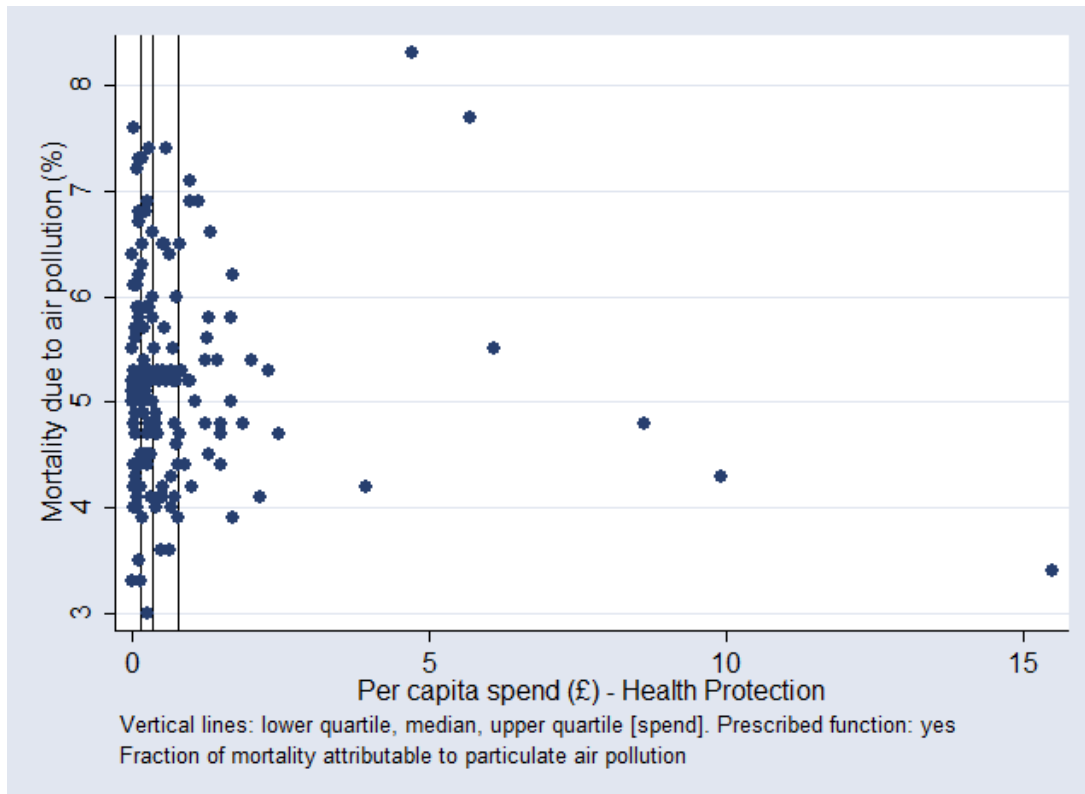


Figure 18: LA net current expenditure per capita (Health Protection): variation with chlamydia detection rate

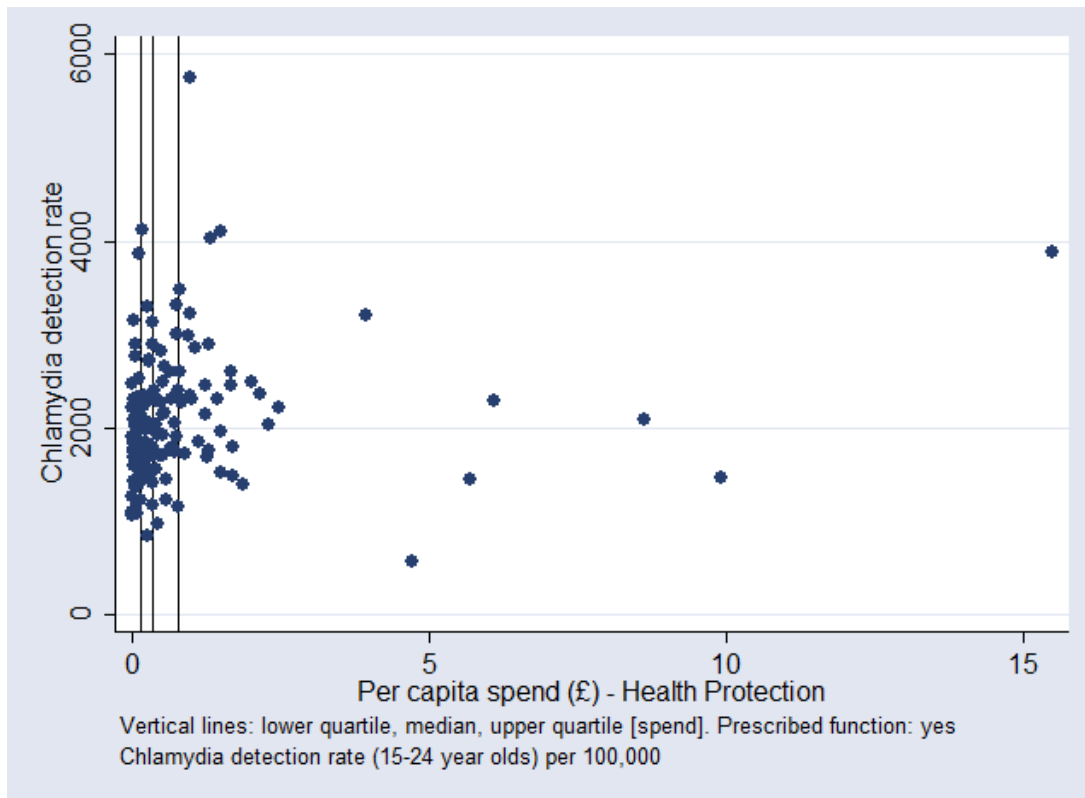
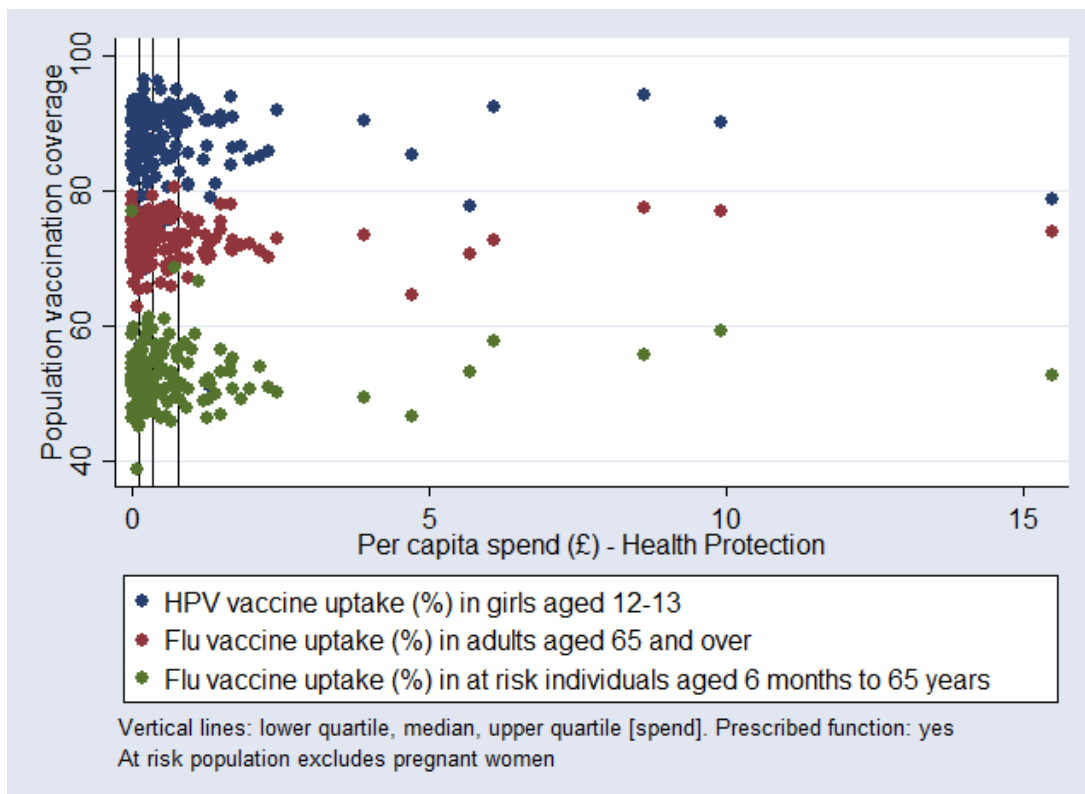


Figure 19: LA net current expenditure per capita (Health Protection): variation with vaccine uptake



368 National Child Measurement Programme

The National Child Measurement Programme is a prescribed function, and there are bespoke outcomes designed to assess performance on this programme. The correlations were, however, small: 0.12 and 0.18 respectively for the 4-5 and 10-11 year old assessments. The outcome measures are derived from the Public Health Outcomes Framework which uses the term 'excess weight' as shorthand for body mass index categories of 'overweight' and 'obese'. We also used these outcomes for comparisons with spend on children's physical activities (374), on childhood obesity (372) and on the children's public health programme (383).

The table below shows local authorities in the bottom and top 5% of spend on the NCMP. There is a huge variation between the lowest and highest spending authorities in terms of per-capita spend – which is based on the population of children who are eligible for the programme (those aged 5 years and 11 years, to correspond approximately to the two school years in which outcomes are measured). Mean spend per head was £26.46 (median: £7.31). Overall, this equated to around 1% of total public health spend although the Isles of Scilly recorded expenditure equating to almost one-quarter of its budget on NCMP.

There is a striking difference between NCMP per-capita spend across the two Tyneside local authorities. This could reflect difficulties in distinguishing NCMP spend from the wider school nursing services, although we have no evidence to support this hypothesis.

	Spend per head (£) 368	ind_206i	ind_206ii	% non-white	% rural	% living in greatest deprivation	Class
Essex CC	0.12	21.2	30.7	5.7	36.3	6.1	4
Bolton	0.14	21.9	34.6	18.1	3.7	41.4	2
Haringey	0.31	20.2	38.0	39.5	0	57.6	1
North Tyneside	0.45	23.6	33.5	3.4	8.6	24.1	2
Hackney	0.47	27.2	40.4	45.3	0	79.9	1
Milton Keynes UA	0.56	22.2	33.8	20.0	10.9	12.9	3
Bristol UA	0.62	23.0	34.8	16.0	0	26	3
Trafford	0.67	20.8	32.0	14.5	0.4	11.2	2
Shropshire UA	118.19	23.5	30.3	2.0	74.5	2.7	3
Warrington UA	126.20	20.2	31.3	4.1	17.2	17.3	3
Birmingham	139.73	23.3	38.8	42.1	0.0	56.3	2
Lewisham	223.55	24.6	39.3	46.5	0	36.6	1
South Tyneside	324.70	25.4	36.7	4.1	0.2	40.2	2
Isles of Scilly	326.53	NR	NR	1.2	100	NR.	3
City of London	693.18	NR	NR	21.4	0	NR	1

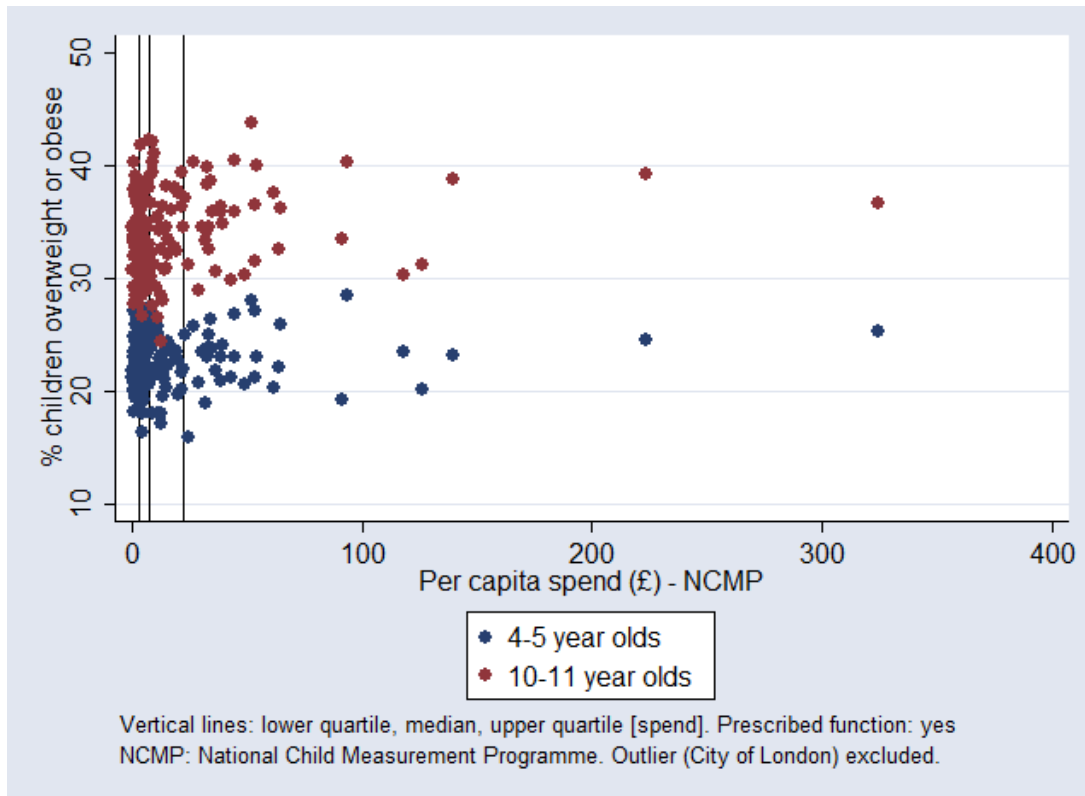
Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

NR: not reported. Outcomes:

ind_2.06i - Excess weight in 4-5 year olds;

ind_2.06ii - Excess weight in 10-11 year olds.

Figure 20: LA net current expenditure per capita (National Child Measurement Programme): variation with childhood obesity rates



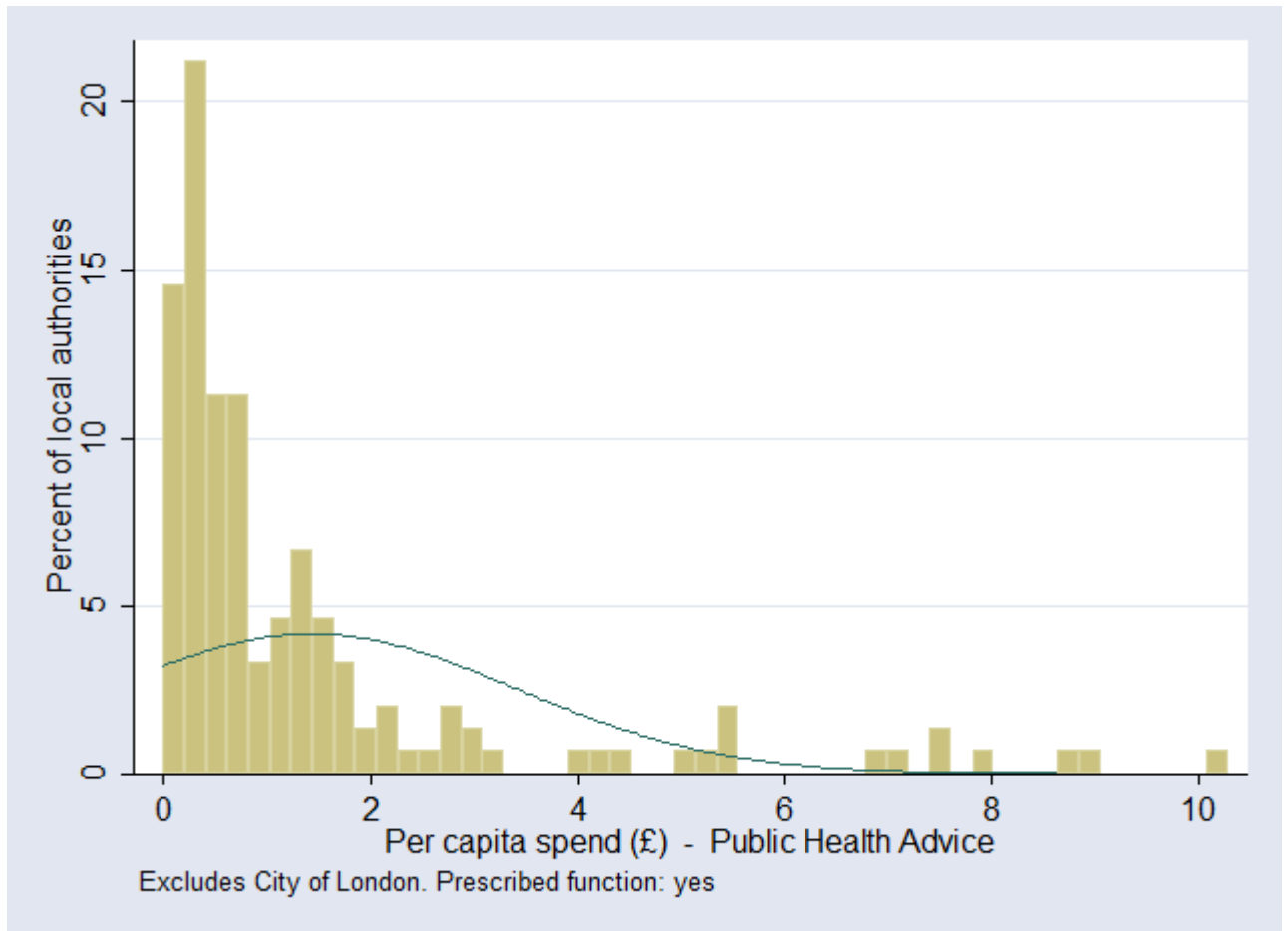
370 Public health advice to NHS commissioners

Expenditure on healthcare public health advice to NHS commissioners on the commissioning of public health services is a prescribed function. This does not lend itself to outcome measures so this section simply shows how expenditure varies across local authorities. Mean per-capita spend (based on total population) was £1.44 in 2013/14 and the corresponding median was £0.70. As a proportion of total public health spend, this equated to around 2.7% on average, although the authority with the highest per-capita spend (Plymouth UA) recorded a proportion of 24%. The table below shows local authorities in the bottom and top 5% of spend. In our first research report to the Department of Health, we noted that concern was expressed by some interviewees that some local authorities were not providing adequate support to NHS commissioners. The low levels of spend reported below suggest there may be grounds for these concerns.

	Spend per head (£)	% non-white	% rural	% living in greatest deprivation	Class
Barnet	0.00	35.87	0.12	5.7	1
Oxfordshire CC	0.00	9.15	55.90	5	4
Haringey	0.00	39.46	0	57.6	1
Dorset CC	0.04	2.08	66.86	4.6	4
Bournemouth UA	0.04	8.01	0.14	16.3	3
Reading UA	0.05	25.25	0.34	11.1	3
Hackney	0.05	45.34	0	79.9	1
Poole UA	0.05	4.15	4.59	6	3
Doncaster	7.14	4.74	17.03	37.5	2
Halton UA	7.53	2.15	3.62	48.8	3
Nottingham City UA	7.55	28.46	0	51.9	3
Hillingdon	7.99	39.39	2.95	7.1	1
Liverpool	8.72	11.09	0	64.4	2
Hartlepool UA	8.88	2.31	2.85	48.2	3
Plymouth UA	10.29	3.85	0	26.3	3

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

Figure 21: Distribution of LA net current expenditure per capita (Public Health Advice to NHS commissioners): histogram



371 Obesity – adults

Expenditure on obesity in adults is not a prescribed function for local authorities. The outcome measures we selected appeared relevant, but only the percentage of inactive adults appeared to be associated with per-capita spend. We took the complement of the 'utilisation of outdoor space' indicator so that all the indicators had the same polarity (i.e. higher value indicated worse outcome).

		Spend per capita on adult obesity (rho)
ind_1.16	Non-utilisation of outdoor space for exercise/health reasons	0.13
ind_2.12	Excess Weight in Adults	0.22
ind_2.13ii	Percentage of active and inactive adults - inactive adults	0.40

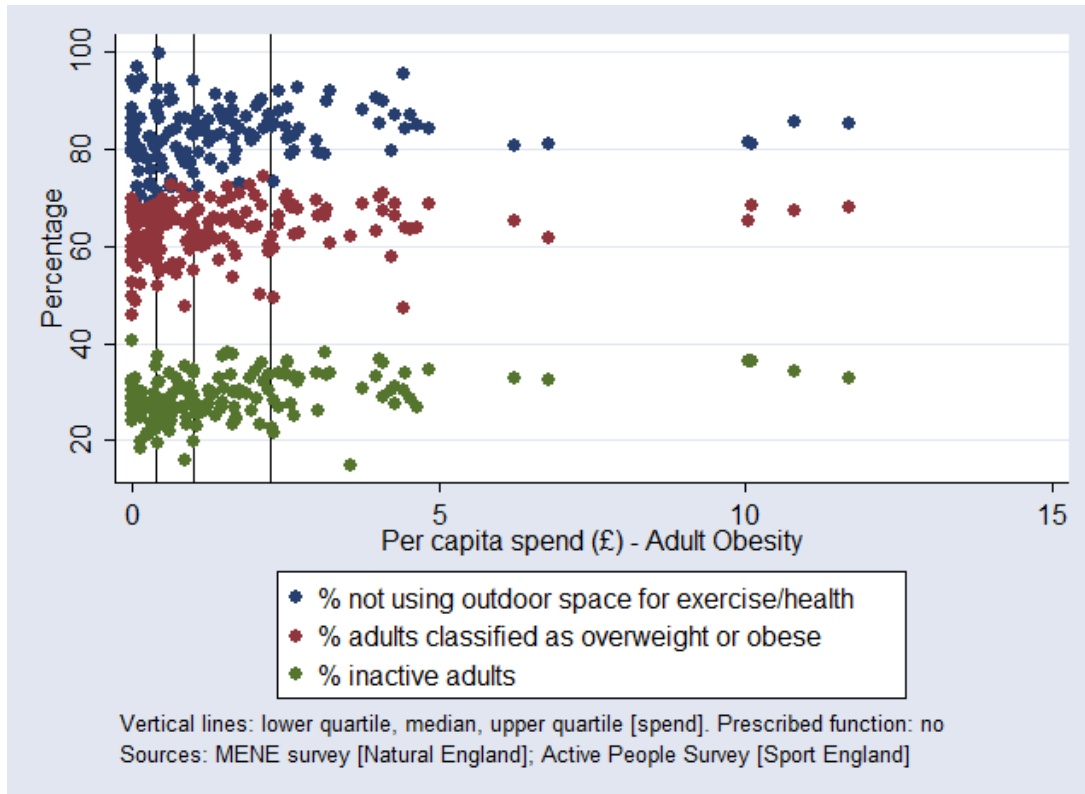
The table below shows local authorities in the bottom and top 5% of spend on adult obesity.

	Spend per head (£) 371	ind_11 6_2	ind_21 2	ind_21 3ii	% non-white	% rural	% living in greatest deprivation	Class
Bury MBC	0.00	79.8	68.2	28.4	10.8	2.9	19.7	2
Cheshire East UA	0.00	80.0	61.2	28.7	3.3	50.9	7.7	3
Ealing	0.00	88.6	57.3	32.3	51.0	0.0	20.9	1
Hammersmith & Fulham	0.00	80.1	49.7	24.0	31.9	0.0	26.3	1
Harrow	0.00	83.4	59.0	30.2	57.8	0.1	2.1	1
Herefordshire UA	0.00	.	66.8	25.5	1.8	66.5	6.1	3
Kensington & Chelsea	0.00	81.2	45.9	27.6	29.4	0.0	23.5	1
Newham	0.00	94.2	56.8	40.5	71.0	0.0	83.8	1
Plymouth UA	0.00	86.4	60.0	31.7	3.9	0.0	26.3	3
Warrington UA	0.00	79.5	70.0	27.2	4.1	17.2	17.3	3
Westminster	0.00	85.0	52.6	27.0	38.3	0.0	23.5	1
Sunderland	4.84	84.4	68.9	34.6	4.1	0.6	37	2
Rotherham	6.23	80.8	65.3	32.7	6.4	12.1	33.4	2
Gateshead	6.81	81.0	61.9	32.3	3.7	10.2	39	2
Wigan MBC	10.05	81.4	65.3	36.2	2.7	14.3	30.3	2
Rochdale	10.11	81.2	68.6	36.3	18.3	1.6	45.8	2
St Helens MBC	10.80	85.9	67.5	34.3	2.0	23.8	36.5	2
South Tyneside	11.71	85.5	68.2	32.9	4.1	0.2	40.2	2

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.
Outcome definitions: see above

All the highest spending authorities were Metropolitan Districts. Mean per-capita expenditure, based on adults aged 20 and over, was £1.65 and the median value was £1.00, i.e. half the local authorities spent £1 or less per head on adult obesity services in 2013/14. As a proportion of total PH spend, the mean value was 2.3% (range: 0% to 12.2%).

Figure 22: LA net current expenditure per capita (Obesity - adults): variation with measures of activity



372 Obesity – children

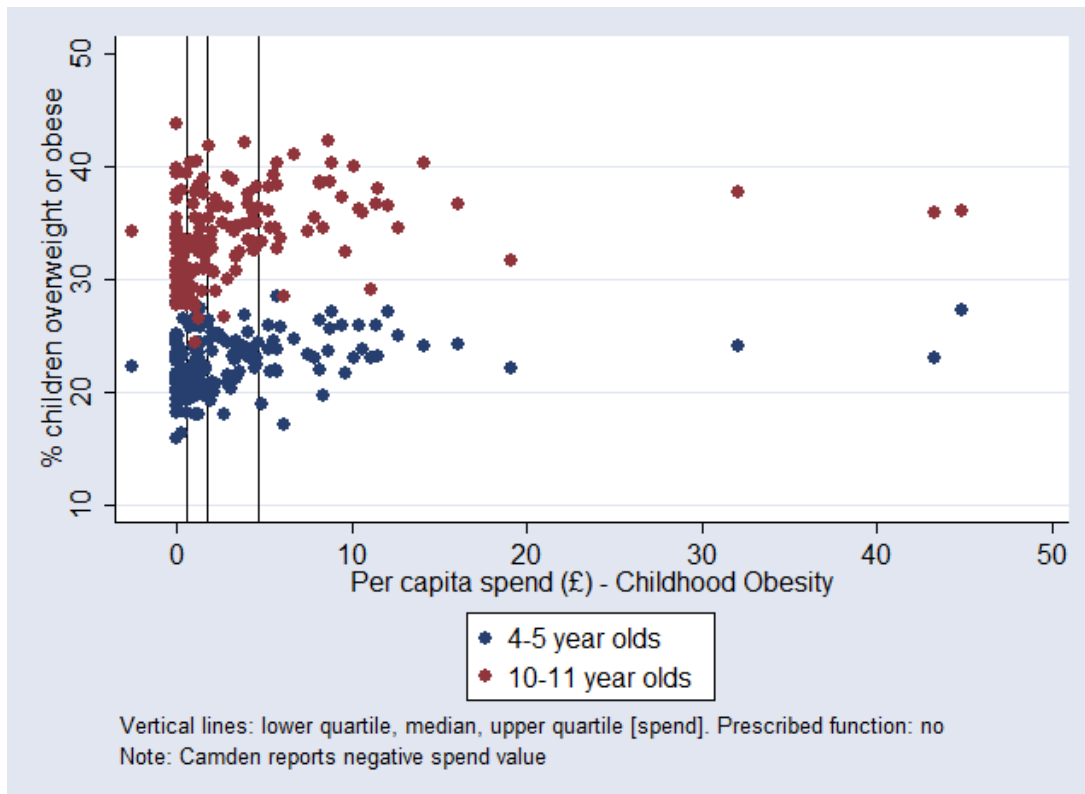
Expenditure on childhood obesity is not a prescribed function for local authorities. The table below shows local authorities in the bottom and top 5% of spend for this category.

	Spend per head (£) 372	ind_ 206i	ind_2 06ii	% non- white	% rural	% living in greatest deprivation	Class
Camden	-2.56	22.3	34.3	33.7	0.0	24.9	1
Bracknell Forest UA	0.00	20.1	28.6	9.4	6.5	0	3
Bury MBC	0.00	19.4	34.0	10.8	2.9	19.7	2
Cheshire East UA	0.00	18.8	29.3	3.3	50.9	7.7	3
Halton UA	0.00	29.5	33.7	2.2	3.6	48.8	3
Hammersmith & Fulham	0.00	20.3	37.6	31.9	0.0	26.3	1
Isle of Wight UA	0.00	21.3	31.6	2.7	85.6	6	3
Lancashire CC	0.00	23.2	32.7	7.7	27.3	22.8	4
Newham	0.00	23.1	39.9	71.0	0.0	83.8	1
Northamptonshire CC	0.00	21.4	30.9	8.5	39.2	13.1	4
Peterborough UA	0.00	24.6	30.2	17.5	12.9	34.1	3
Plymouth UA	0.00	25.0	33.3	3.9	0.0	26.3	3
Reading UA	0.00	23.5	34.6	25.2	0.3	11.1	3
Rochdale	0.00	22.8	34.4	18.3	1.6	45.8	2
Sandwell	0.00	21.7	39.4	30.1	0.0	59.5	2
Shropshire UA	0.00	23.5	30.3	2.0	74.5	2.7	3
South Gloucestershire UA	0.00	18.2	27.7	5.0	18.9	0.5	3
Southampton UA	0.00	24.5	37.2	14.1	0.0	24.9	3
Southwark	0.00	28.0	43.8	45.8	0.0	35.6	1
Stockport MBC	0.00	21.1	30.2	7.9	8.6	12.9	2
Torbay UA	0.00	25.3	35.5	2.5	14.9	18.7	3
Windsor & Maidenhead UA	0.00	15.9	31.3	13.9	18.1	0	3
Worcestershire CC	0.00	24.2	33.2	4.3	40.8	10	4
Walsall	14.10	24.2	40.3	21.1	1.0	45.9	2
Middlesbrough UA	16.06	24.3	36.7	11.8	0.3	54.3	3
Suffolk CC	19.10	22.1	31.7	4.8	63.0	7.4	4
Nottingham City UA	32.13	24.2	37.8	28.5	0.0	51.9	3
City of London	32.84	.	.	21.4	0.0	.	1
Kensington & Chelsea	43.28	23.0	36.0	29.4	0.0	23.5	1
Blackpool UA	44.90	27.3	36.1	3.3	0.0	48	3

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties. Outcomes:
ind_2.06i - Excess weight in 4-5 year olds; ind_2.06ii - Excess weight in 10-11 year olds.

Mean per-capita expenditure, based on children aged 5 to 19, was £4.03 and the median value was £1.71. We compared local authority spend on childhood obesity against the same two outcomes as those used for the national child measurement programme (368), spend on physical activity in children (374) and the children’s public health programme (383). The correlations between spend and outcome were 0.25 and 0.26 respectively for excess weight in 4-5 year olds and 10-11 year olds. As a proportion of total PH spend, the mean was 1.1% (max: 9.2%). Camden Council reported negative spend; the reason for this is unclear.

Figure 23: LA net current expenditure per capita (Obesity, children): variation with childhood obesity rates



373 Physical activity – adults

Expenditure on physical activity is not a prescribed function for local authorities. The outcome measures we selected were not highly correlated with per-capita spend. We took the complement of the 'utilisation of outdoor space' indicator so that all the indicators had the same polarity (i.e. higher value indicated poorer outcome).

		Spend per capita on adult physical activity (rho)
ind_1.16	Non-utilisation of outdoor space for exercise/health reasons	0.21
ind_2.12	Excess Weight in Adults	0.10
ind_2.13ii	Percentage of active and inactive adults - inactive adults	0.33

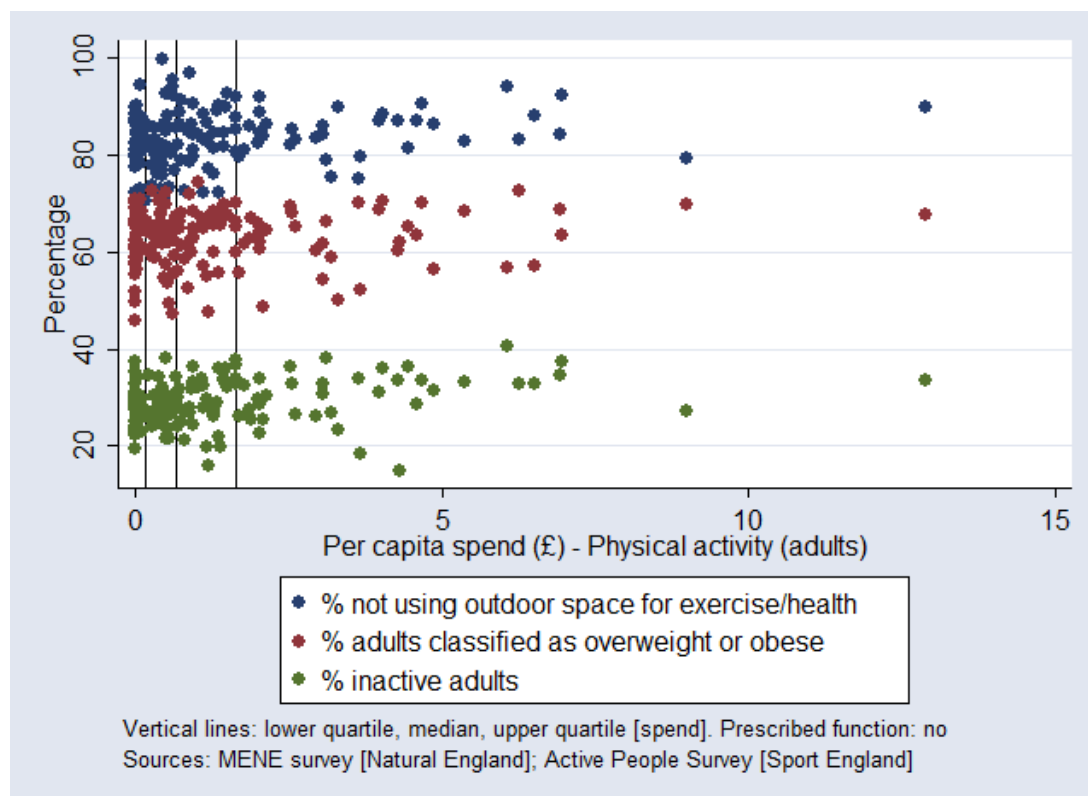
The table below shows local authorities in the bottom and top 5% of spend on adult physical activity. Mean per-capita expenditure, was £1.38 and the median value was £0.65, reflecting the large number of local authorities recording zero spend. As a proportion of total PH spend, the mean was 1.8% (range: 0% to 15.8%).

	Spend per head (£) 373	ind_11 6_2	ind_21 2	ind_21 3ii	% non-white	% rural	% living in greatest deprivation	Class
Bournemouth UA	0.00	69.2	58.7	28.0	8.0	0.1	16.3	3
Bracknell Forest UA	0.00	.	66.2	22.1	9.4	6.5	0	3
Cheshire East UA	0.00	80.0	61.2	28.7	3.3	50.9	7.7	3
Dorset CC	0.00	82.5	62.4	27.3	2.1	66.9	4.6	4
Hammersmith & Fulham	0.00	80.1	49.7	24.0	31.9	0	26.3	1
Kensington & Chelsea	0.00	81.2	45.9	27.6	29.4	0	23.5	1
Lambeth	0.00	87.6	51.8	19.5	42.9	0	36.6	1
North Lincolnshire UA	0.00	NR	70.1	35.4	4.0	52.4	19.8	3
Peterborough UA	0.00	77.8	65.5	31.2	17.5	12.9	34.1	3
Poole UA	0.00	.	57.6	22.9	4.1	4.6	6	3
Portsmouth UA	0.00	79.7	57.9	30.2	11.6	0	23.8	3
Reading UA	0.00	89.9	55.3	28.1	25.2	0.3	11.1	3
Sandwell	0.00	88.5	66.3	35.4	30.1	0	59.5	2
Surrey CC	0.00	82.4	60.8	23.6	9.6	23.9	0.3	4
Sutton	0.00	79.8	62.5	25.2	21.4	0.2	4.8	1

	Spend per head (£) 373	ind_11 6_2	ind_21 2	ind_21 3ii	% non-white	% rural	% living in greatest deprivation	Class
Tameside	0.00	86.8	69.2	37.2	9.1	1.1	36.7	2
Thurrock UA	0.00	NR	70.8	28.9	14.1	13.9	13.3	3
Torbay UA	0.00	NR	66.8	32.7	2.5	14.9	18.7	3
Newham	6.06	94.2	56.8	40.5	71.0	0	83.8	1
Durham UA	6.27	83.3	72.5	32.9	1.8	74.6	28.7	3
Leicester City UA	6.51	88.0	57.0	32.7	49.5	0.2	41	3
Sunderland	6.94	84.4	68.9	34.6	4.1	0.6	37	2
Barking & Dagenham	6.96	92.2	63.5	37.3	41.7	0	52.1	1
Warrington UA	9.00	79.5	70.0	27.2	4.1	17.2	17.3	3
Blackburn with Darwen UA	12.89	89.9	67.9	33.5	30.8	5.0	52.4	3

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.
 NR: not reported. Outcome definitions: see above.

Figure 24: LA net current expenditure per capita (Physical Activity – adults): variation with measures of activity



374 Physical activity – children

Expenditure on physical activity is not a prescribed function for local authorities, but is likely to impact outcomes on childhood obesity.

The table below shows local authorities in the bottom and top 5% of spend on children's physical activity. Mean per-capita expenditure, was £2.77 and the median value was £0.56. Forty-eight local authorities (32%) reported zero spend. We compared local authority spend on children's physical activities against the same outcomes as those used for the national child measurement programme (368), spend on childhood obesity (372) and the children's public health programme (383). The correlation coefficients were 0.15 (4-5 year olds obesity) and 0.24 (10-11 year old obesity), suggesting a small positive association between outcomes and spend. As a proportion of total public health spend, the mean was 0.8% and Luton UA recorded the maximum figure of 25.7%.

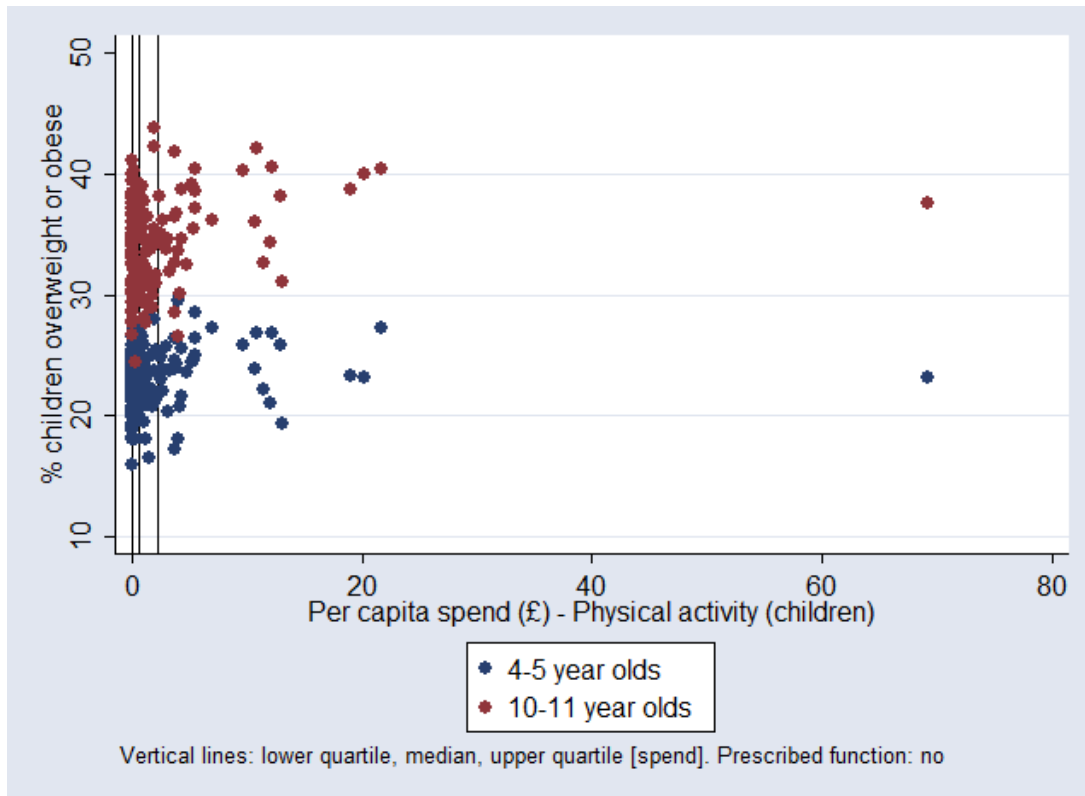
	Spend per head (£) 374	ind_206 i	ind_206 ii	% non-white	% rural	% living in greatest deprivation	Class
Barnsley	0.00	22.2	33.6	2.1	20.0	32.7	2
Bournemouth UA	0.00	21.8	30.2	8.0	0.1	16.3	3
Bracknell Forest UA	0.00	20.1	28.6	9.4	6.5	0	3
Buckinghamshire CC	0.00	18.2	27.7	13.6	48.0	0	4
Bury MBC	0.00	19.4	34.0	10.8	2.9	19.7	2
Camden	0.00	22.3	34.3	33.7	0.0	24.9	1
Cheshire East UA	0.00	18.8	29.3	3.3	50.9	7.7	3
Cheshire West and Chester UA	0.00	24.5	33.6	2.6	40.4	15.5	3
Dorset CC	0.00	23.9	28.6	2.1	66.9	4.6	4
Ealing	0.00	22.4	38.3	51.0	0.0	20.9	1
Enfield	0.00	26.5	39.4	39.0	0.1	27.7	1
Hammersmith & Fulham	0.00	20.3	37.6	31.9	0.0	26.3	1
Harrow	0.00	20.4	36.7	57.8	0.1	2.1	1
Havering	0.00	25.8	35.4	12.3	0.8	7.7	1
Hertfordshire CC	0.00	20.8	28.6	12.4	22.1	1	4
Isles of Scilly	0.00	NR	NR	1.2	100.0	NR	3
Kensington & Chelsea	0.00	23.0	36.0	29.4	0.0	23.5	1
Kirklees	0.00	21.9	32.5	20.9	12.8	28.6	2
Lambeth	0.00	24.8	41.2	42.9	0.0	36.6	1
North Lincolnshire UA	0.00	24.2	34.9	4.0	52.4	19.8	3
North Tyneside	0.00	23.6	33.5	3.4	8.6	24.1	2
Northamptonshire CC	0.00	21.4	30.9	8.5	39.2	13.1	4
Nottinghamshire CC	0.00	20.4	31.0	4.5	31.5	16.2	4

	Spend per head (£) 374	ind_206 i	ind_206 ii	% non-white	% rural	% living in greatest deprivation	Class
Peterborough UA	0.00	24.6	30.2	17.5	12.9	34.1	3
Plymouth UA	0.00	25.0	33.3	3.9	0.0	26.3	3
Poole UA	0.00	21.2	30.1	4.1	4.6	6	3
Portsmouth UA	0.00	23.3	33.6	11.6	0.0	23.8	3
Rochdale	0.00	22.8	34.4	18.3	1.6	45.8	2
Rotherham	0.00	23.1	36.0	6.4	12.1	33.4	2
Sandwell	0.00	21.7	39.4	30.1	0.0	59.5	2
Sheffield	0.00	19.0	33.4	16.3	1.8	34.9	2
Shropshire UA	0.00	23.5	30.3	2.0	74.5	2.7	3
South Gloucestershire UA	0.00	18.2	27.7	5.0	18.9	0.5	3
South Tyneside	0.00	25.4	36.7	4.1	0.2	40.2	2
Southampton UA	0.00	24.5	37.2	14.1	0.0	24.9	3
Southend-on-Sea UA	0.00	21.8	32.5	8.4	0.0	23.1	3
Stockport MBC	0.00	21.1	30.2	7.9	8.6	12.9	2
Sunderland	0.00	23.8	38.4	4.1	0.6	37	2
Surrey CC	0.00	18.1	26.7	9.6	23.9	0.3	4
Sutton	0.00	19.2	33.6	21.4	0.2	4.8	1
Swindon UA	0.00	24.1	33.1	10.2	13.8	14.4	3
Tameside	0.00	24.5	33.3	9.1	1.1	36.7	2
Torbay UA	0.00	25.3	35.5	2.5	14.9	18.7	3
Wandsworth	0.00	19.8	34.6	28.6	0.0	11.7	1
Warwickshire CC	0.00	20.6	30.3	7.3	43.9	5.9	4
Westminster	0.00	23.1	40.0	38.3	0.0	23.5	1
Windsor & Maidenhead UA	0.00	15.9	31.3	13.9	18.1	0	3
Worcestershire CC	0.00	24.2	33.2	4.3	40.8	10	4
Newcastle	12.95	25.9	38.2	14.5	1.8	37.6	2
Herefordshire UA	13.11	19.3	31.1	1.8	66.5	6.1	3
Birmingham	19.04	23.3	38.8	42.1	0.0	56.3	2
Newham	20.15	23.1	39.9	71.0	0.0	83.8	1
Hackney	21.73	27.2	40.4	45.3	0.0	79.9	1
City of London	45.98	NR	NR	21.4	0.0	NR	1
Luton UA	69.28	23.2	37.6	45.3	0.0	27.5	3

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

NR: not reported. Outcomes: ind_2.06i - Excess weight in 4-5 year olds; ind_2.06ii - Excess weight in 10-11 year olds

Figure 25: LA net current expenditure per capita (Physical activity - children): variation with childhood obesity rates



376 Substance misuse - Drug misuse – adults

The table below shows local authorities in the bottom and top 5% of spend. Although expenditure on substance misuse is not a prescribed function for local authorities, per-capita spend was relatively high: mean per-capita expenditure was £15.07 and median spend was £13.60. The highest spending authorities were either London boroughs or unitary authorities. There were just two relevant outcome measures from the PHOF, namely the success rates for drug treatment (from the Health Improvement domain). These indicators capture only a small fraction of the target population, and do not reflect the breadth of this category which includes, for example, targeted health improvement activity. The correlations between per-capita spend on adult drug misuse and successful completion of drug treatment were -0.14 (for opiate users) and 0.026 (for non-opiate users). This suggests that more sensitive outcome measures may be needed. The two outcome measures were positively correlated with each other (0.39). As a proportion of total public health spend, adult drug misuse expenditure constituted 22.3% on average. Bournemouth UA and Cumbria CC each spent around 46% of their total public health budgets on adult drug misuse but do not appear in the table below because their per-capita spend was low compared with other organisations (£25 and £14.50 respectively).

	Spend per head (£) 376	ind_215i	ind_215i i	% non-white	% rural	% living in greatest deprivation	Class
Greenwich	0.00	11.9	43.1	37.5	0	43.7	1
Bolton	0.63	3.6	29.8	18.1	3.7	41.4	2
Isles of Scilly	2.68	NR	NR	1.2	100	NR	3
Wokingham UA	3.00	8.2	35.5	11.6	17.7	0	3
Norfolk CC	4.41	6.2	31.3	3.5	62.0	10	4
Hampshire CC	4.52	10.6	46.0	5.0	32.8	3.7	4
Bromley	4.53	10.9	44.0	15.7	1.1	7.9	1
Windsor & Maidenhead UA	4.82	7.7	34.5	13.9	18.1	0	3
Tower Hamlets	35.75	4.2	35.3	54.8	0	70.2	1
Westminster	36.34	7.6	29.6	38.3	0	23.5	1
Bristol UA	36.35	8.7	47.8	16.0	0	26	3
Camden	38.49	8.7	36.4	33.7	0	24.9	1
Middlesbrough UA	39.80	4.9	36.6	11.8	0.3	54.3	3
Blackpool UA	40.23	9.4	43.4	3.3	0	48	3
Islington	47.07	6.5	34.1	31.8	0	52.9	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

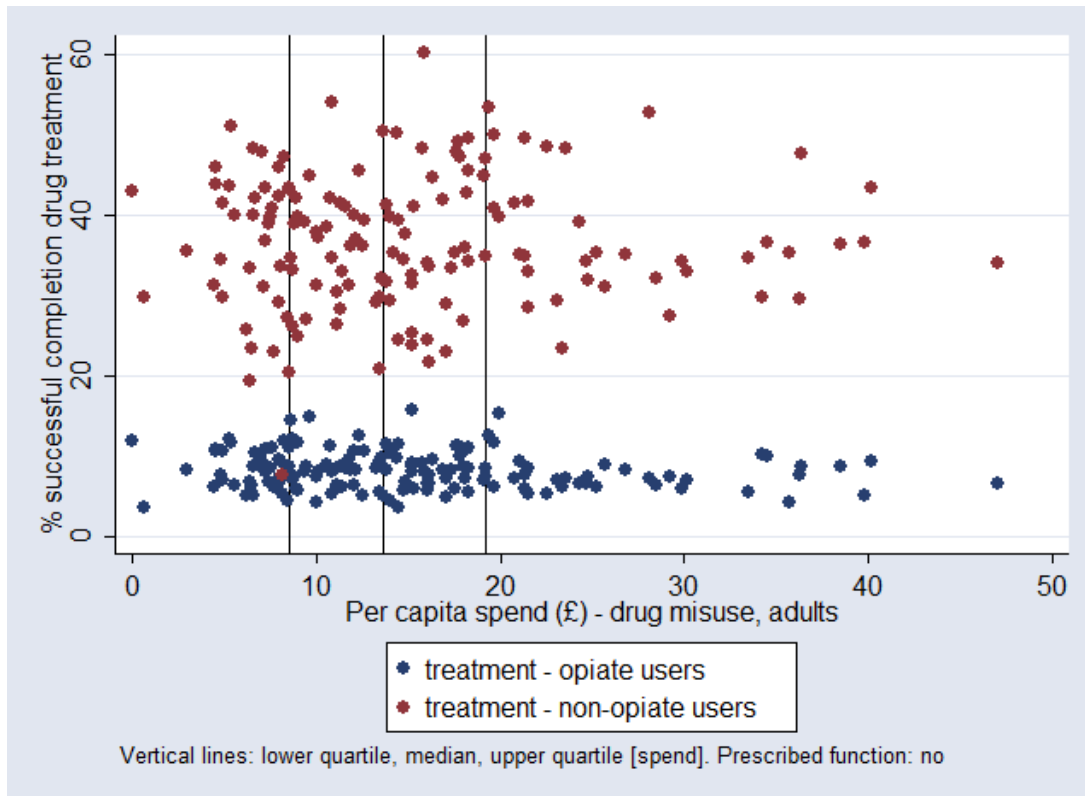
NR: not reported.

Outcomes:

ind_2.15i - Successful completion of drug treatment - opiate users

ind_2.15ii - Successful completion of drug treatment - non-opiate users

Figure 26: LA net current expenditure per capita (drug misuse, adults): variation with rates of successful completion of drug treatment



377 Substance misuse - Alcohol misuse – adults

The table below shows local authorities in the bottom and top 5% of spend on alcohol misuse in adults. Per-capita spend was lower than for drug misuse, with a mean value of £5.37 and median spend was £4.21. All but one of the highest spending authorities were London boroughs or unitary authorities. We compared spend against alcohol related hospital admissions, which is measured as a rate per 100,000 age-standardised population. The correlation coefficient of spend and outcome was 0.27, suggesting that higher spend was associated with poorer outcomes. In terms of expenditure as a proportion of total public health spend, the average was 7.5% (range: 0% to 25.8%).

The local authority with a relatively poor outcome (an alcohol-related admission of almost 975 per 100,000 persons) and expenditure just below the 25th percentile is North Tyneside (shown in yellow).

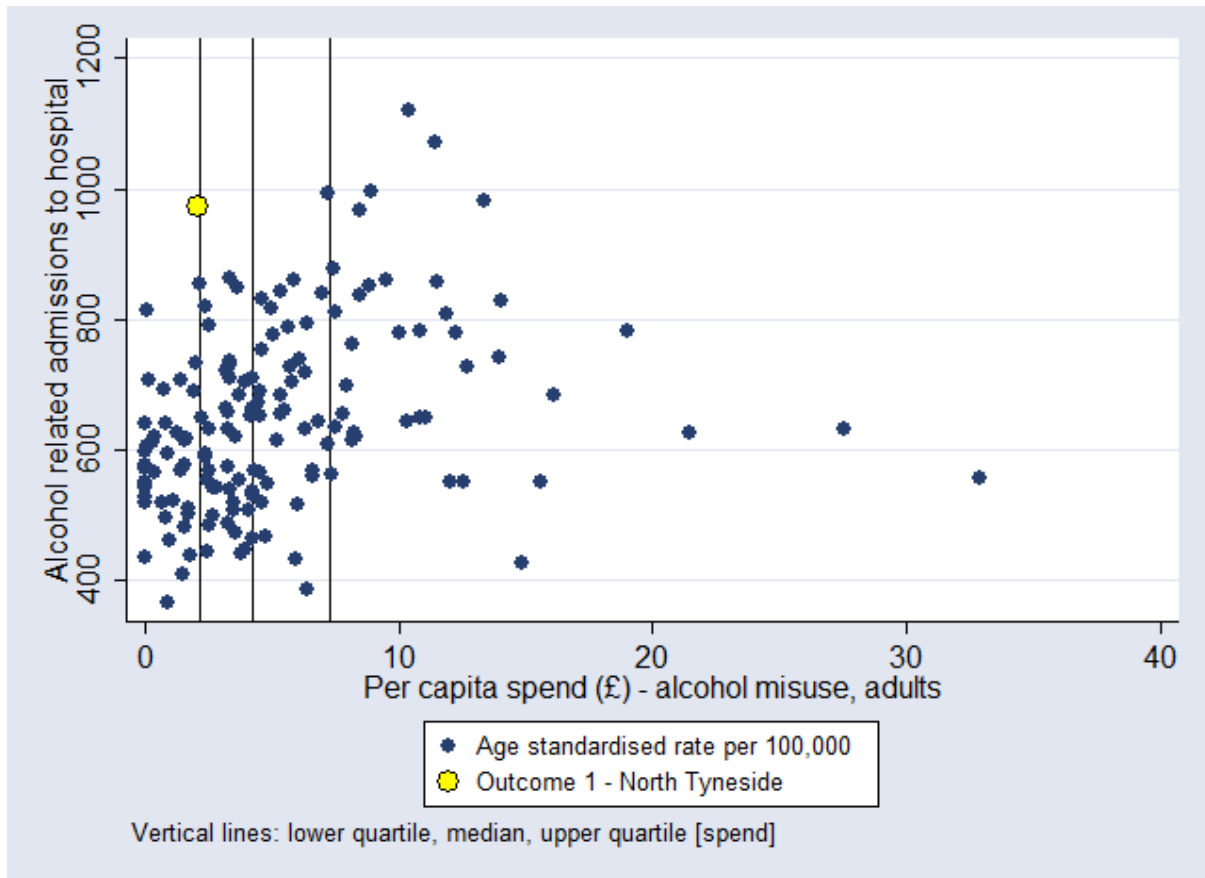
	Spend per head (£) 377	ind_218	% non-white	% rural	% living in greatest deprivation	Class
Bracknell Forest UA	0.00	435.7	9.4	6.5	0	3
Croydon	0.00	526.1	44.9	0	17.3	1
Dorset CC	0.00	517.4	2.1	66.9	4.6	4
Enfield	0.00	546.1	39.0	0.1	27.7	1
Herefordshire UA	0.00	551.0	1.8	66.5	6.1	3
Hillingdon	0.00	597.1	39.4	2.9	7.1	1
Lambeth	0.00	641.2	42.9	0	36.6	1
Poole UA	0.00	571.6	4.1	4.6	6	3
Slough UA	0.00	542.0	54.3	0.3	12.8	3
Warwickshire CC	0.00	575.8	7.3	43.9	5.9	4
Kensington & Chelsea	14.9	425.6	29.4	0	23.5	1
Westminster	15.6	551.8	38.3	0	23.5	1
North East Lincolnshire UA	16.1	682.9	2.6	12.1	38	3
Hartlepool UA	19.0	782.8	2.3	2.9	48.2	3
Bolton	21.5	626.2	18.1	3.7	41.4	2
Hammersmith & Fulham	27.6	630.7	31.9	0	26.3	1
City of London	32.9	556.2	21.4	0	NR	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

NR: not reported.

ind_218 - Alcohol related admissions to hospital - narrow definition

Figure 27: LA net current expenditure per capita (alcohol misuse, adults): variation with alcohol-related hospital admissions



378 Substance misuse - (drugs and alcohol) - youth services

The table below shows local authorities in the bottom and top 5% of spend on drugs and alcohol misuse in younger people. Mean per-capita spend was estimated using LA populations of people aged 13 to 19. Mean spend was £15.34 and median spend was £8.44. We compared spend with two indicators from the PHOF: the rate of first time entrants to the youth justice system (rho: 0.22), and alcohol related hospital admission rates for those aged 15 to 24 (rho: -0.05). Neither of these outcomes was strongly associated with per capita spend. As a proportion of total public health spend, expenditure on youth substance misuse averaged 2.2% (range: 0% to 26.4%).

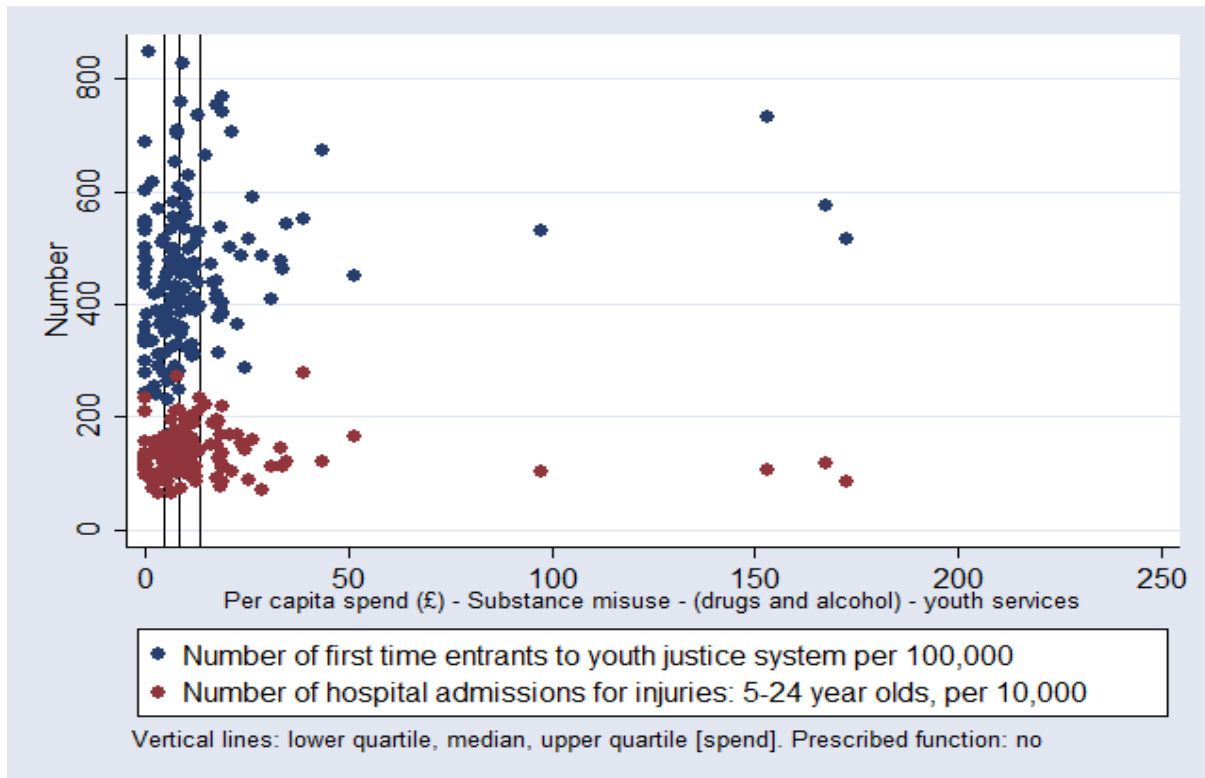
	Spend per head (£) 378	ind_10 4	ind_20 7ii	% non-white	% rural	% living in greatest deprivation	Class
Bracknell Forest UA	0.00	338.5	116.0	9.4	6.5	0	3
Buckinghamshire CC	0.00	241.5	98.6	13.6	48.0	0	4
Cheshire West and Chester UA	0.00	332.1	119.7	2.6	40.4	15.5	3
Herefordshire UA	0.00	546.9	112.2	1.8	66.5	6.1	3
Lambeth	0.00	687.6	110.4	42.9	0	36.6	1
Medway Towns UA	0.00	435.0	97.5	10.4	10.4	15	3
Milton Keynes UA	0.00	482.9	111.7	20.0	10.9	12.9	3
North Somerset UA	0.00	543.9	106.1	2.7	55.0	9.6	3
Nottinghamshire CC	0.00	361.9	120.4	4.5	31.5	16.2	4
Poole UA	0.00	300.6	210.0	4.1	4.6	6	3
Portsmouth UA	0.00	531.5	121.8	11.6	0	23.8	3
Sandwell	0.00	448.3	127.4	30.1	0	59.5	2
South Gloucestershire UA	0.00	538.4	111.7	5.0	18.9	0.5	3
Southend-on-Sea UA	0.00	601.6	132.2	8.4	0	23.1	3
Warrington UA	0.00	278.1	233.2	4.1	17.2	17.3	3
Warwickshire CC	0.00	342.4	136.4	7.3	43.9	5.9	4
Worcestershire CC	0.00	463.0	134.7	4.3	40.8	10	4
Norfolk CC	43.75	672.0	120.4	3.5	62.0	10	4
Blackburn with Darwen UA	51.49	450.1	167.0	30.8	5.0	52.4	3
Wolverhampton	97.42	531.4	102.9	32.0	0	53.8	2
Manchester	153.29	731.9	106.8	33.4	0.0	65.1	2
Birmingham	167.51	575.0	118.8	42.1	0.0	56.3	2
Greenwich	172.90	514.7	85.6	37.5	0	43.7	1
City of London	230.77	NR	NR	21.4	0	NR	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

NR: not reported. Outcomes: ind_1.04 - First time entrants to the youth justice system;

ind_2.07ii - Hospital admissions caused by unintentional and deliberate injuries in young people (aged 15-24)

Figure 28: LA net current expenditure per capita (Substance misuse (drugs and alcohol) - youth services): variation with hospital admission rates



380 Smoking and tobacco - Stop smoking services and interventions

Smoking is the most important cause of preventable ill health and premature mortality, and a major risk factor for many diseases. The table below shows local authorities in the bottom and top 5% of spend on stop smoking services. The mean per-capita spend (£2.85) was similar to the median value (£2.56). Coventry has an active stop smoking services despite reporting zero expenditure and this underlines the dangers of drawing conclusions over spend.

The correlation between spend and smoking prevalence in adults (0.37) was higher than for smoking prevalence in routine and manual occupations (0.18). As a proportion of total public health spend, the mean value was 5.3% (range: 0% to 20.0%).

	Spend per head (£) 380	ind_214	ind_214_ rm	% non- white	% rural	% living in greatest deprivati on	Class
Coventry	0.00	18.5	30.6	26.2	0.7	32.8	2
Torbay UA	0.03	17.5	26.2	2.5	14.9	18.7	3
Manchester	0.11	23.7	33.6	33.4	0.0	65.1	2
Warrington UA	0.14	18.0	31.4	4.1	17.2	17.3	3
Hillingdon	0.25	16.2	21.0	39.4	2.9	7.1	1
Southend-on-Sea UA	0.30	21.8	29.7	8.4	0.0	23.1	3
Wakefield	0.39	25.0	33.4	4.6	30.0	28.7	2
Luton UA	0.42	20.0	29.1	45.3	0.0	27.5	3
Tower Hamlets	6.08	19.3	21.6	54.8	0.0	70.2	1
Portsmouth UA	6.21	22.3	35.7	11.6	0.0	23.8	3
Knowsley	6.76	23.4	31.9	2.8	1.4	60	2
Hammersmith & Fulham	6.94	21.4	34.9	31.9	0.0	26.3	1
South Tyneside	7.31	21.3	27.1	4.1	0.2	40.2	2
Westminster	7.93	18.5	25.3	38.3	0.0	23.5	1
City of London	20.47	NR	NR	21.4	0.0	NR	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

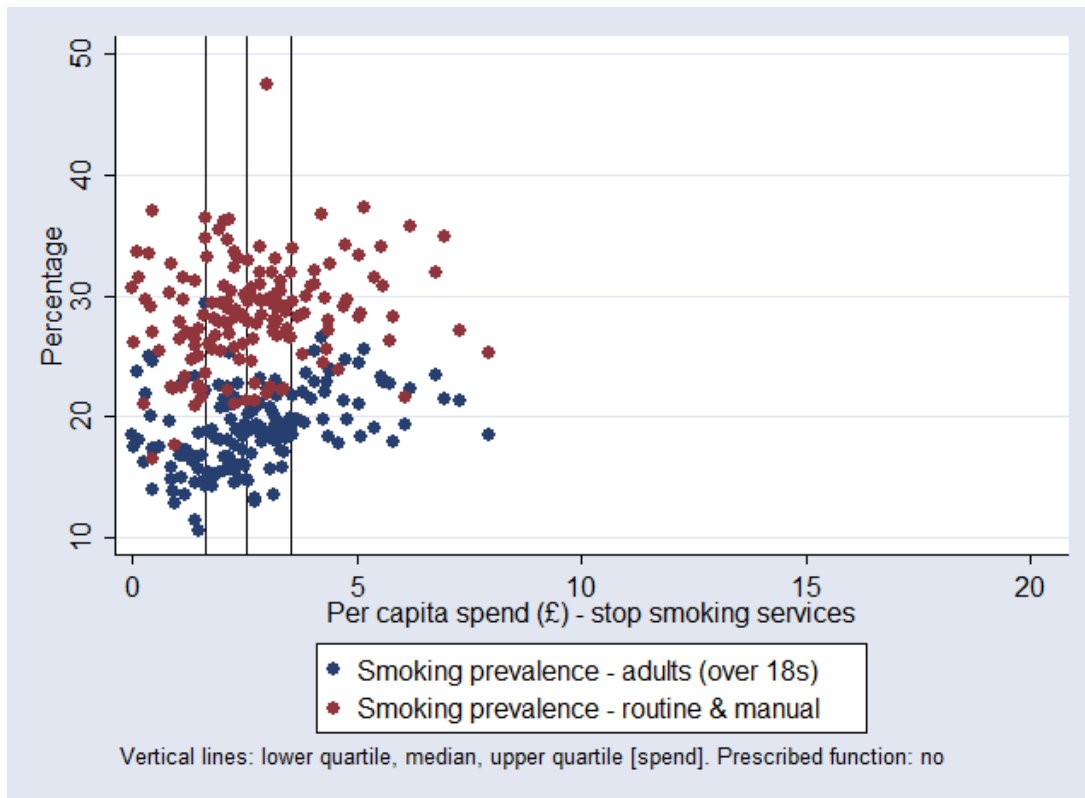
NR: not reported.

Outcomes:

ind_2.14 - Smoking prevalence - adults (over 18s)

ind_2.14 - Smoking prevalence - routine & manual occupations

Figure 29: LA net current expenditure per capita (Stop Smoking services): variation with smoking prevalence



381 Smoking and tobacco - Wider tobacco control

This categories includes spend on activities such as stopping underage sales, promoting smokefree laws and reducing the availability of illicit tobacco. Forty-three of 152 local authorities (28%) reported zero spend on wider tobacco control. The 43 authorities comprised 13 London boroughs, 9 Metropolitan Districts, 14 Unitary Authorities, and 6 Shire Counties. The highest per-capita spend was by City of London, but outcomes on smoking prevalence were not reported for this local authority. The correlation between spend and smoking prevalence in adults (0.27) was higher than for smoking prevalence in routine and manual occupations (0.14), with both values of rho smaller than their counterparts for spend on stop-smoking services. On average, local authorities spent just 0.8% of their total public health budgets on wider tobacco control.

	Spend per head (£) 381	ind_214	ind_214_ rm	% non- white	% rural	% living in greatest deprivati on	Class
Barnsley	-0.01	21.4	30.8	2.1	20.0	32.7	2
Barnet	0.00	15.0	28.1	35.9	0.1	5.7	1
Bolton	0.00	21.0	31.9	18.1	3.7	41.4	2
Bournemouth UA	0.00	16.6	27.8	8.0	0.1	16.3	3
Bracknell Forest UA	0.00	16.0	25.9	9.4	6.5	0.0	3
Bristol UA	0.00	18.2	28.7	16.0	0.0	26.0	3
Bury MBC	0.00	18.2	31.9	10.8	2.9	19.7	2
Camden	0.00	19.5	30.2	33.7	0.0	24.9	1
Cheshire West and Chester UA	0.00	16.5	28.9	2.6	40.4	15.5	3
Croydon	0.00	17.0	22.3	44.9	0.0	17.3	1
Doncaster	0.00	21.4	29.0	4.7	17.0	37.5	2
Dorset CC	0.00	14.3	25.6	2.1	66.9	4.6	4
Ealing	0.00	14.8	21.4	51.0	0.0	20.9	1
Hammersmith & Fulham	0.00	21.4	34.9	31.9	0.0	26.3	1
Havering	0.00	18.9	28.3	12.3	0.8	7.7	1
Herefordshire UA	0.00	17.3	27.0	1.8	66.5	6.1	3
Hillingdon	0.00	16.2	21.0	39.4	2.9	7.1	1
Isles of Scilly	0.00	NR	NR	1.2	100.0	NR	3
Islington	0.00	21.7	28.0	31.8	0.0	52.9	1
Kensington & Chelsea	0.00	17.8	23.9	29.4	0.0	23.5	1
Lambeth	0.00	19.9	26.6	42.9	0.0	36.6	1
Manchester	0.00	23.7	33.6	33.4	0.0	65.1	2
Newham	0.00	18.8	27.7	71.0	0.0	83.8	1
Norfolk CC	0.00	18.0	29.5	3.5	62.0	10.0	4

	Spend per head (£) 381	ind_214	ind_214_ rm	% non- white	% rural	% living in greatest deprivati on	Class
Oxfordshire CC	0.00	14.7	28.3	9.1	55.9	5.0	4
Plymouth UA	0.00	24.5	37.1	3.9	0.0	26.3	3
Poole UA	0.00	20.2	33.0	4.1	4.6	6.0	3
Portsmouth UA	0.00	22.3	35.7	11.6	0.0	23.8	3
Rotherham	0.00	18.9	26.5	6.4	12.1	33.4	2
Shropshire UA	0.00	17.9	28.2	2.0	74.5	2.7	3
Slough UA	0.00	22.0	25.1	54.3	0.3	12.8	3
South Tyneside	0.00	21.3	27.1	4.1	0.2	40.2	2
Southampton UA	0.00	21.5	30.8	14.1	0.0	24.9	3
Southwark	0.00	20.7	29.3	45.8	0.0	35.6	1
St Helens MBC	0.00	19.7	24.4	2.0	23.8	36.5	2
Staffordshire CC	0.00	15.8	22.1	4.3	37.8	9.4	4
Surrey CC	0.00	14.8	32.7	9.6	23.9	0.3	4
Sutton	0.00	15.6	22.3	21.4	0.2	4.8	1
Tameside	0.00	22.4	30.4	9.1	1.1	36.7	2
Telford & the Wrekin UA	0.00	21.0	28.2	7.3	16.0	23.6	3
Westminster	0.00	18.5	25.3	38.3	0.0	23.5	1
Windsor & Maidenhead UA	0.00	15.5	36.2	13.9	18.1	0.0	3
Worcestershire CC	0.00	14.7	24.7	4.3	40.8	10.0	4
Bedford UA	1.89	13.7	22.3	19.5	30.5	10.7	3
Derbyshire CC	2.55	17.5	25.4	2.5	45.4	12.2	4
Luton UA	2.95	20.0	29.1	45.3	0.0	27.5	3
Wakefield	3.51	25.0	33.4	4.6	30.0	28.7	2
Coventry	4.68	18.5	30.6	26.2	0.7	32.8	2
Kingston-upon-Hull UA	6.00	29.4	36.5	5.9	0.0	51.8	3
City of London	20.33	NR	NR	21.4	0.0	NR	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties.

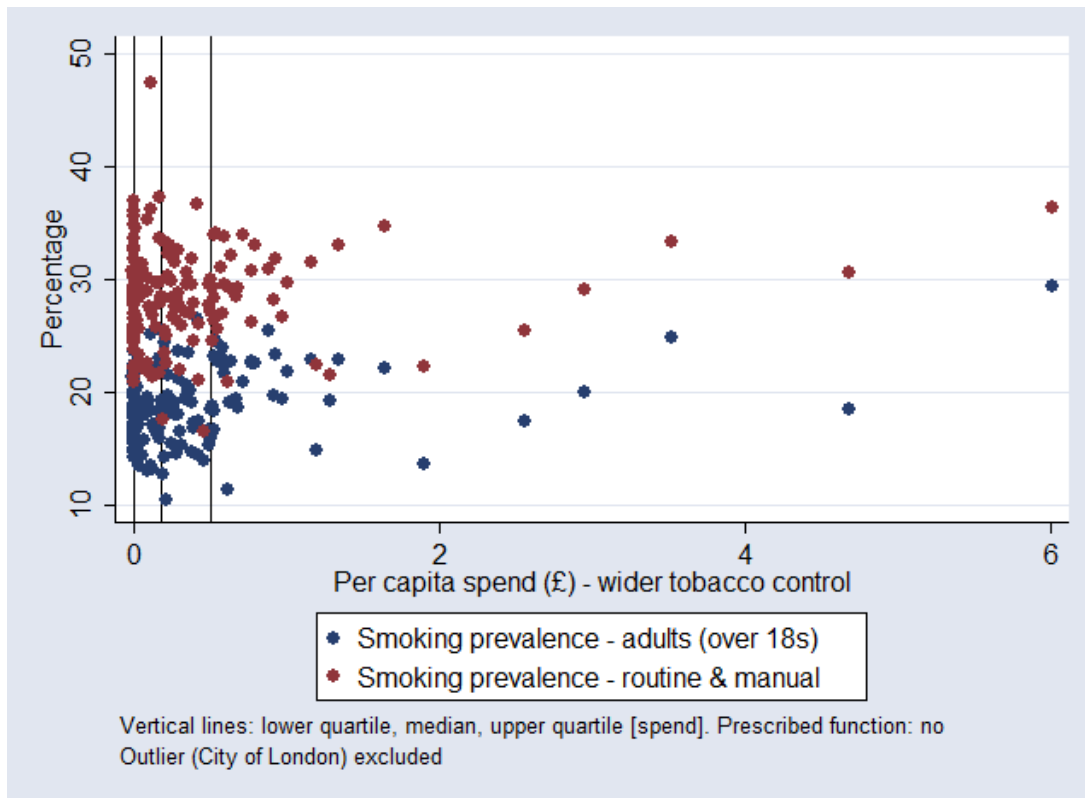
NR: not reported.

Outcomes:

ind_2.14 - Smoking prevalence - adults (over 18s)

ind_2.14 - Smoking prevalence - routine & manual

Figure 30: LA net current expenditure per capita (wider tobacco control): smoking prevalence



Note: smoking prevalence rates not reported for City of London.

383 Children 5–19 public health programmes

The school-aged children’s public health programme includes providing prevention and early intervention services, delivering the Healthy Child Programme and addressing key public health issues such as sexual health, emotional health and wellbeing issues, obesity, drug alcohol and tobacco misuse. Local authority expenditure varied widely across local authorities. Mean per-capita spend was £28.37 and the median was £23.40, with local authorities typically spending around 9.6% of their total public health budgets in this category (range: 0.3% to 24.6%). We compared per-capita spend on the programme with 10 outcome indicators from the PHOF. The correlations with spend are shown below. The largest correlation was between spend and the percentage of children in poverty.

		Per capita spend children 5-19 PH programme (rho)
ind_1.01i	Children in poverty (all dependent children under 20)	0.54
ind_1.02i	School Readiness: The percentage of children achieving a good level of development at the end of reception	-0.24
ind_1.02i	School Readiness: The percentage of children with free school meal status achieving a good level of development at the end of reception	0.05
ind_1.03	Pupil absence	0.06
ind_1.04	First time entrants to the youth justice system	0.27
ind_1.05	16-18 year olds not in education employment or training	0.21
ind_2.06i	Excess weight in 4-5 year olds	0.31
ind_2.06ii	Excess weight in 10-11 year olds	0.42
ind_2.07i	Hospital admissions caused by unintentional and deliberate injuries in children (aged 0-14 years)	0.22
ind_2.08	Emotional well-being of looked after children	-0.22

Local authorities in the bottom and top 5% of spend are shown below. None of those in the top category of spend was a Shire County. We used a range of age-specific indicators to illustrate the variation of spend with outcome.

	Spend per head (£) 383	ind_1 01i	ind_1 02i	ind_1 02i_s m	ind_1 03	ind_1 04	ind_1 05	ind_2 06i	ind_2 06ii	ind_2 07i_1 4	ind_2 08	% non-white	% rural	% living in greatest deprivation	Class
Warrington UA	0.75	13.8	60.0	38.4	5.2	278.1	3.9	20.2	31.3	134.3	14.3	4.1	17.2	17.3	3
Lewisham	1.70	27.3	75.3	68.1	4.7	592.5	3.5	24.6	39.3	101.6	13.7	46.5	0.0	36.6	1
Shropshire UA	1.94	12.1	64.1	47.4	5.1	311.9	5.2	23.5	30.3	95.1	13.6	2.0	74.5	2.7	3
Suffolk CC	3.22	14.3	58.9	42.4	5.6	446.3	6.2	22.1	31.7	80.7	15.9	4.8	63.0	7.4	4
Somerset CC	3.27	13.3	61.4	40.8	5.5	501.0	5	23.5	31.0	114.2	15.2	2.0	72.6	3.7	4
Isles of Scilly	3.44	0.0	NR	NR	4.9	NR	NR	NR	NR	NR	NR	1.2	100.0	NR	3
Derby City UA	7.35	22.8	51.3	36.3	5.5	543.4	7.5	20.4	34.6	79.8	16.3	19.7	0.2	29	3
Windsor & Maidenhead UA	9.31	8.5	66.4	39.7	4.9	281.2	4.1	15.9	31.3	99.7	14.8	13.9	18.1	0	3
Bolton	67.54	21.6	54.2	36.4	5.1	498.2	5.3	21.9	34.6	137.1	13.1	18.1	3.7	41.4	2
Middlesbrough UA	69.19	32.5	50.1	38.4	6.2	736.6	9.7	24.3	36.7	191.3	13.3	11.8	0.3	54.3	3
Westminster	72.39	31.3	57.9	52.3	4.6	388.9	3.8	23.1	40.0	80.4	11.5	38.3	0.0	23.5	1
Tower Hamlets	82.60	39.0	55.0	50.7	4.8	526.6	4.6	23.7	42.3	81.5	12.5	54.8	0.0	70.2	1
Southampton UA	83.57	22.7	61.8	48.2	5.9	826.2	5.6	24.5	37.2	130.0	NR	14.1	0.0	24.9	3
Hammersmith & Fulham	85.85	26.0	60.8	50.7	5.0	555.9	3.2	20.3	37.6	103.2	11.9	31.9	0.0	26.3	1
Greenwich	92.38	26.4	73.2	64.9	4.5	514.7	6.5	28.6	40.4	90.3	13.2	37.5	0.0	43.7	1

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties. NR: not reported

NR: not reported. Outcome definitions: see above.

Figure 31: LA net current expenditure per capita (Children 5–19 public health programmes): variation with educational / deprivation outcomes

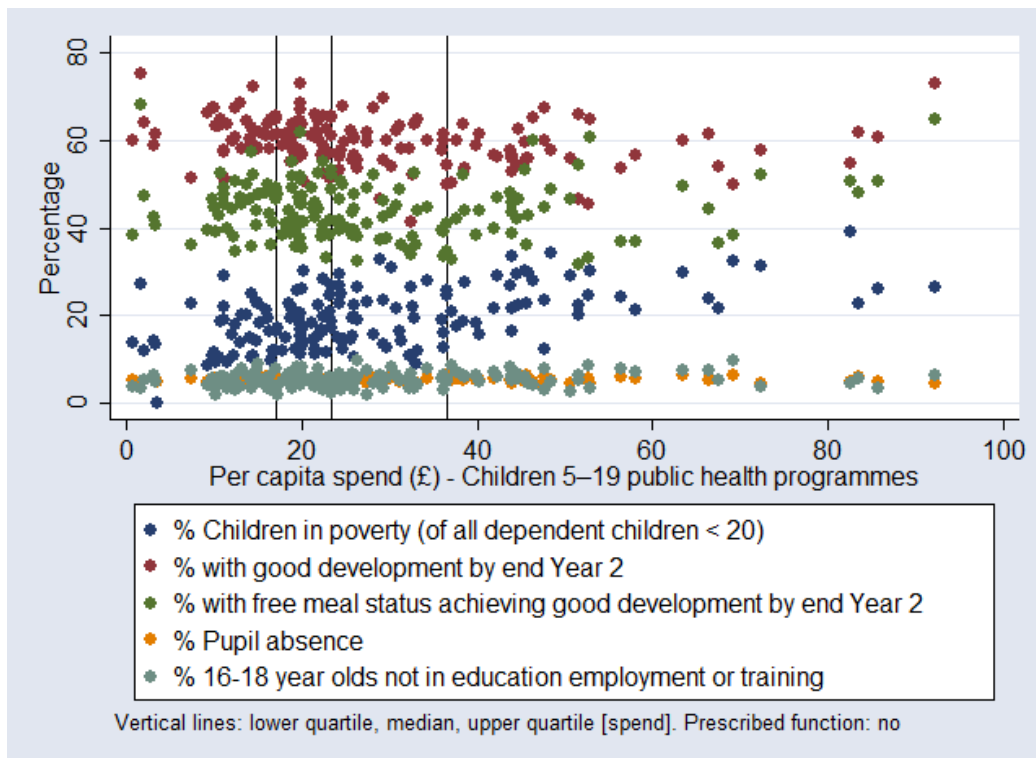


Figure 32: LA net current expenditure per capita (Children 5–19 public health programmes): variation with outcomes for crime / unintentional and deliberate injuries

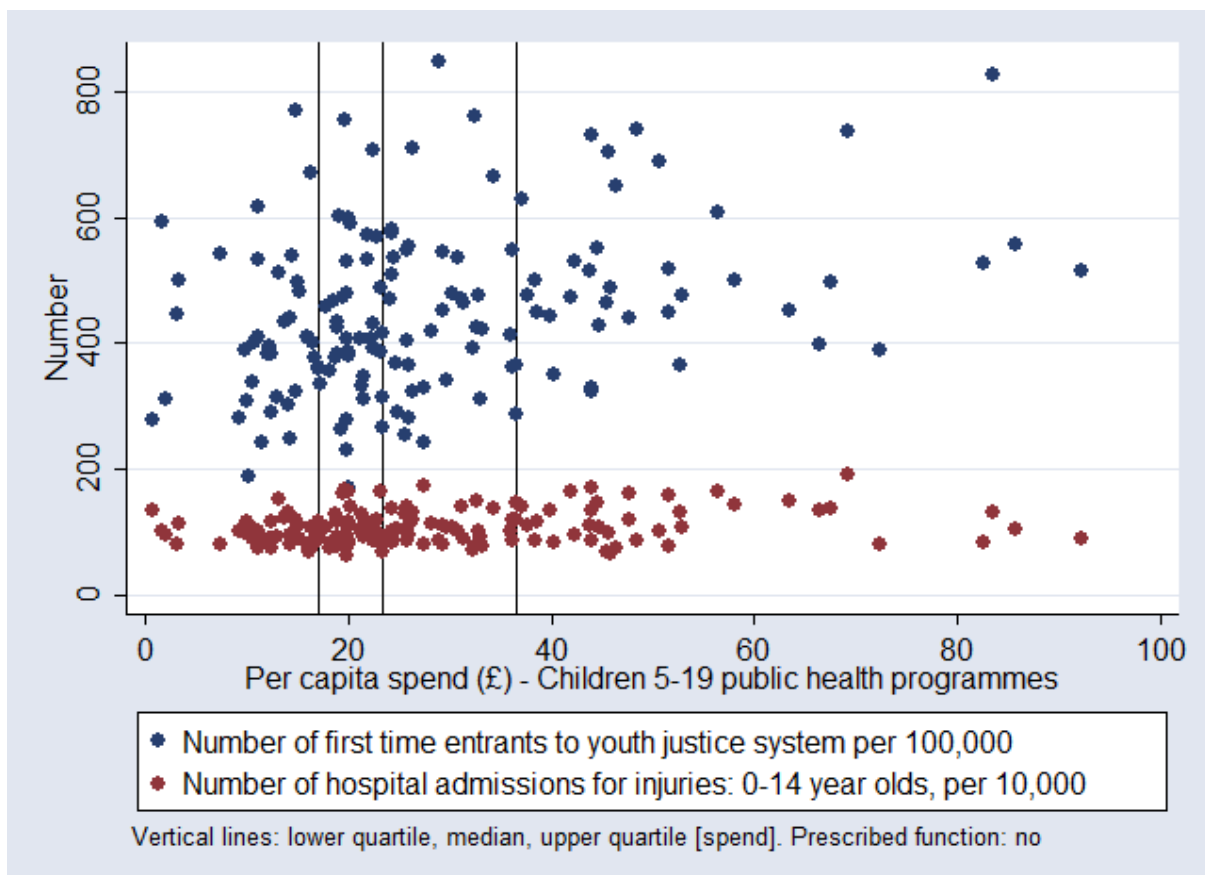


Figure 33: LA net current expenditure per capita (Children 5–19 public health programmes): variation with childhood obesity rates

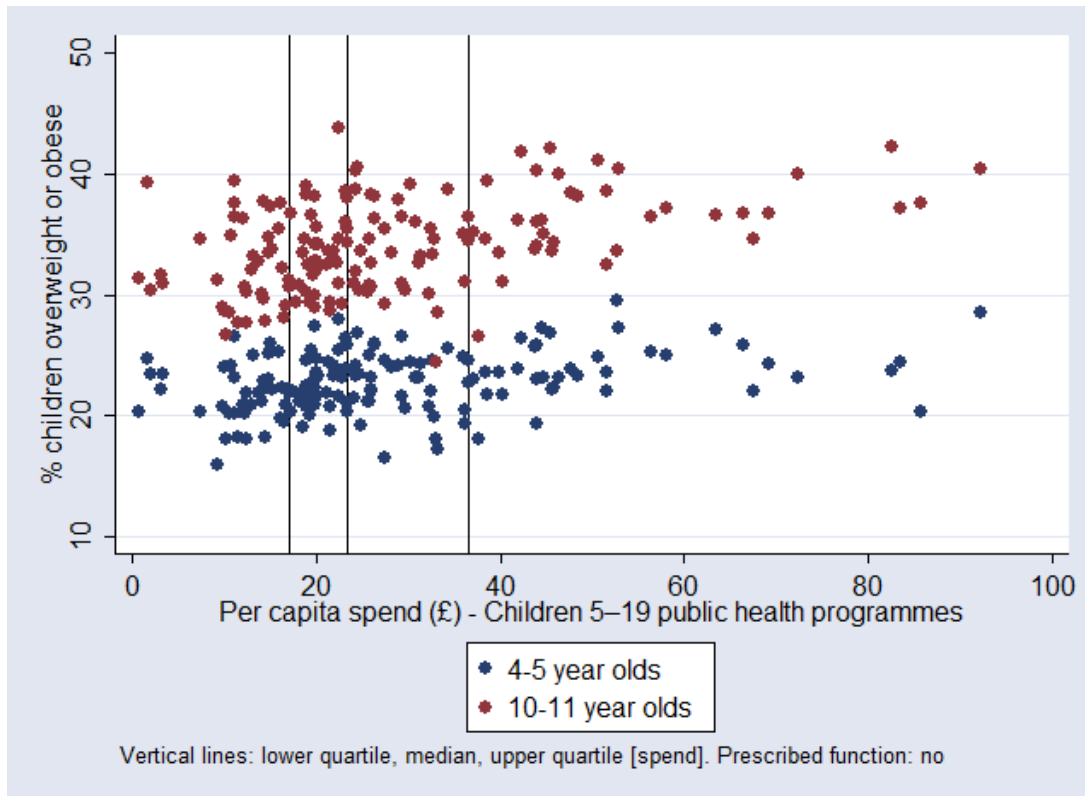
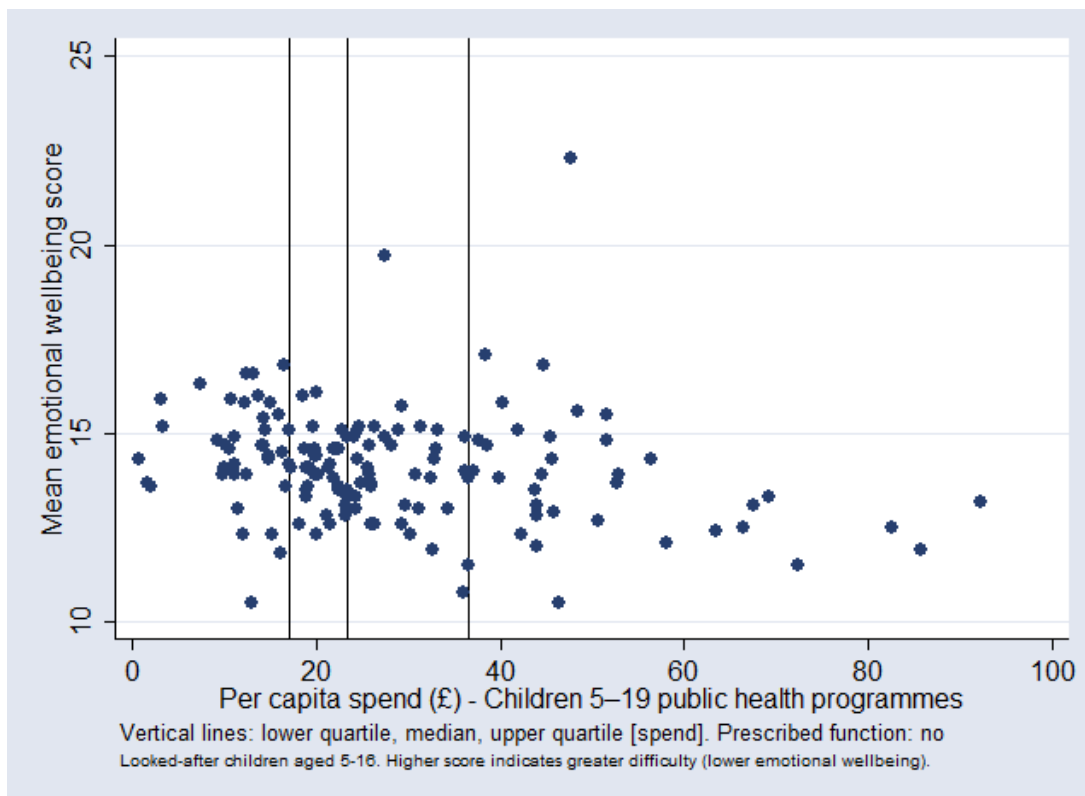


Figure 34: LA net current expenditure per capita (Children 5–19 public health programmes): variation with emotional wellbeing in looked-after children



385 Miscellaneous public health services

We used the 15 sub-categories listed in the local authority circulars to guide our selection of indicators for the miscellaneous category [1, 20, 21]. These include health at work (indicators 1.09ii), community safety and violence prevention (1.12i), public mental health (2.23i and 4.09), dental public health and fluoridation (4.02), surveillance and control of infectious disease (4.08) and non-mandatory elements of the NHS Health Check programme such as intensive lifestyle management (2. 17)).

Mean local authority spend on the miscellaneous category was £7.25 (median: £5.52) and local authorities varied in the proportion of total public health spend they allocated to this category (mean: 12.7%; range: 0% to 34.8%). There was a positive association between hospital admissions for violence and miscellaneous per capita spend, and smaller positive associations between spend and low satisfaction, and spend and under 5s' rate of tooth decay.

		Per capita spend: Miscellaneous (rho)
ind_1.09ii	Sickness absence: percent of working days lost due to sickness absence	0.08
ind_1.12i	Violent crime (including sexual violence) - hospital admissions for violence	0.53
ind_2.17	Recorded diabetes	0.05
ind_2.23i	Self-reported well-being - people with a low satisfaction score	0.38
ind_4.02	Tooth decay in children aged 5	0.38
ind_4.08	Mortality from communicable diseases (provisional)	0.26
ind_4.09	Excess under 75 mortality rate in adults with serious mental illness	0.25

	Spend per head (£) 385	ind_109i	ind_112i	ind_217	ind_223i	ind_402	ind_408	ind_409	% non-white	% rural	% living in greatest deprivation	Class
Luton UA	0.00	1.5	62.9	7.5	5.0	1.6	69.9	320	45.3	0	27.5	3
Surrey CC	0.00	1.4	25.0	4.9	3.8	0.6	69.1	353	9.6	23.9	0.3	4
Southwark	0.27	0.7	81.0	5.5	.	0.8	66.6	304	45.8	0	35.6	1
Rutland UA	0.35	1.5	29.3	6.8	.	1.1	36.0	373	2.9	100	0	3
Reading UA	0.41	1.2	23.3	4.6	.	1.4	91.3	410	25.2	0.3	11.1	3
Calderdale	0.43	2.1	85.3	5.9	5.4	1.9	77.7	337	10.3	29.6	20.9	2
Central Bedfordshire UA	0.55	1.4	34.8	5.9	.	0.5	63.4	296	6.2	53.9	2.1	3
North Somerset UA	0.59	1.8	36.5	5.7	.	0.8	65.2	379	2.7	55.0	9.6	3
Kensington & Chelsea	20.15	1.0	52.4	4.2	4.2	1.3	44.1	231	29.4	0	23.5	1
City of London	20.40	14.8	43.1	2.6	NR	NR	NR	320	21.4	0	.	1
Telford & the Wrekin UA	22.37	1.9	39.3	6.5	5.4	0.8	62.7	439	7.3	16.0	23.6	3
Kingston-upon-Hull UA	22.99	1.4	91.7	6.2	7.4	1.5	78.2	341	5.9	0	51.8	3
Liverpool	23.33	2.0	167.8	5.9	8.1	1.4	79.5	494	11.1	0	64.4	2
Hackney	27.67	1.0	72.9	5.8	7.6	1.2	67.5	304	45.3	0	79.9	1
Middlesbrough UA	27.77	1.9	115.6	6.1	7.5	1.7	80.0	481	11.8	0.3	54.3	3

Key: Class: 1 London Boroughs, 2 Metropolitan Districts, 3 Unitary Authorities, 4 Shire Counties. NR: not reported. Outcome definitions: see above.

Figure 35: LA net current expenditure per capita (Miscellaneous): variation with assorted outcomes

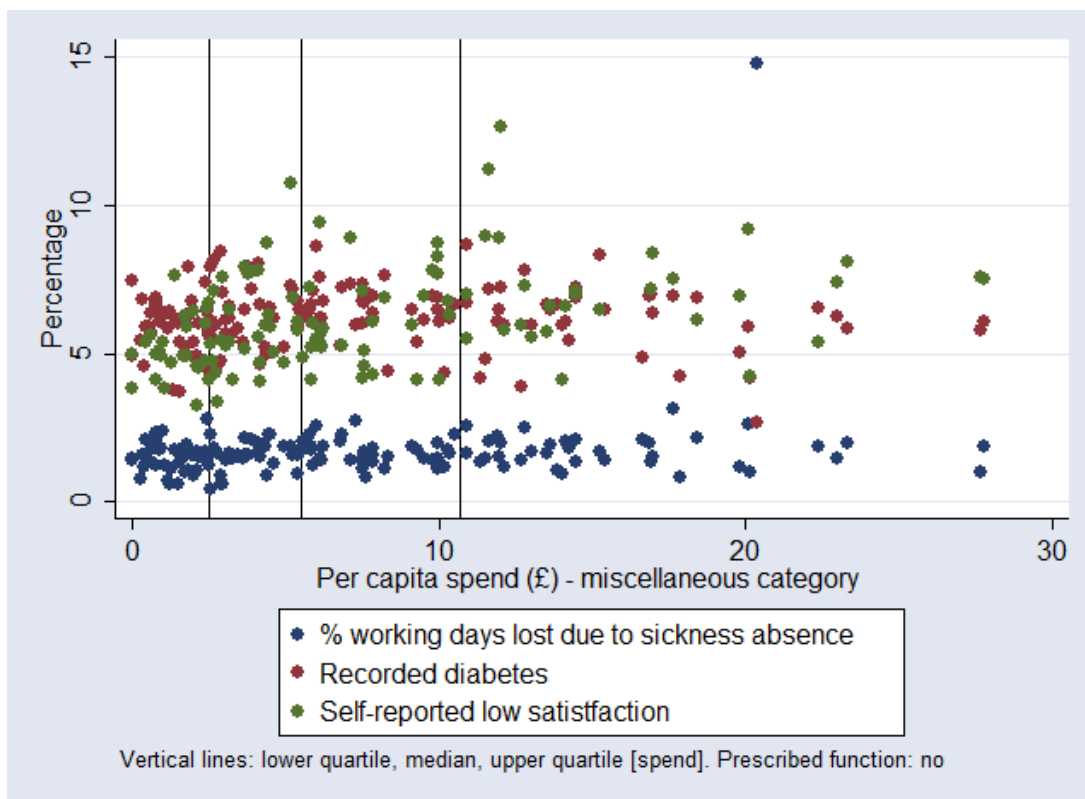


Figure 36: LA net current expenditure per capita (Miscellaneous): variation with dental outcome

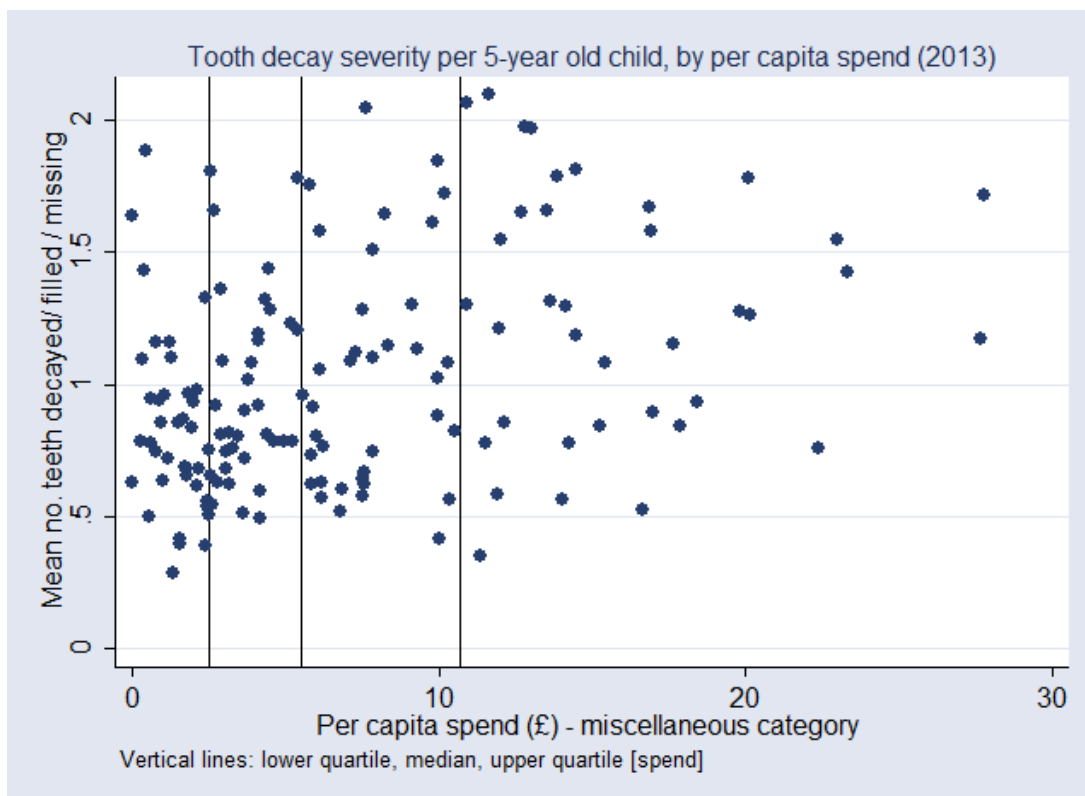
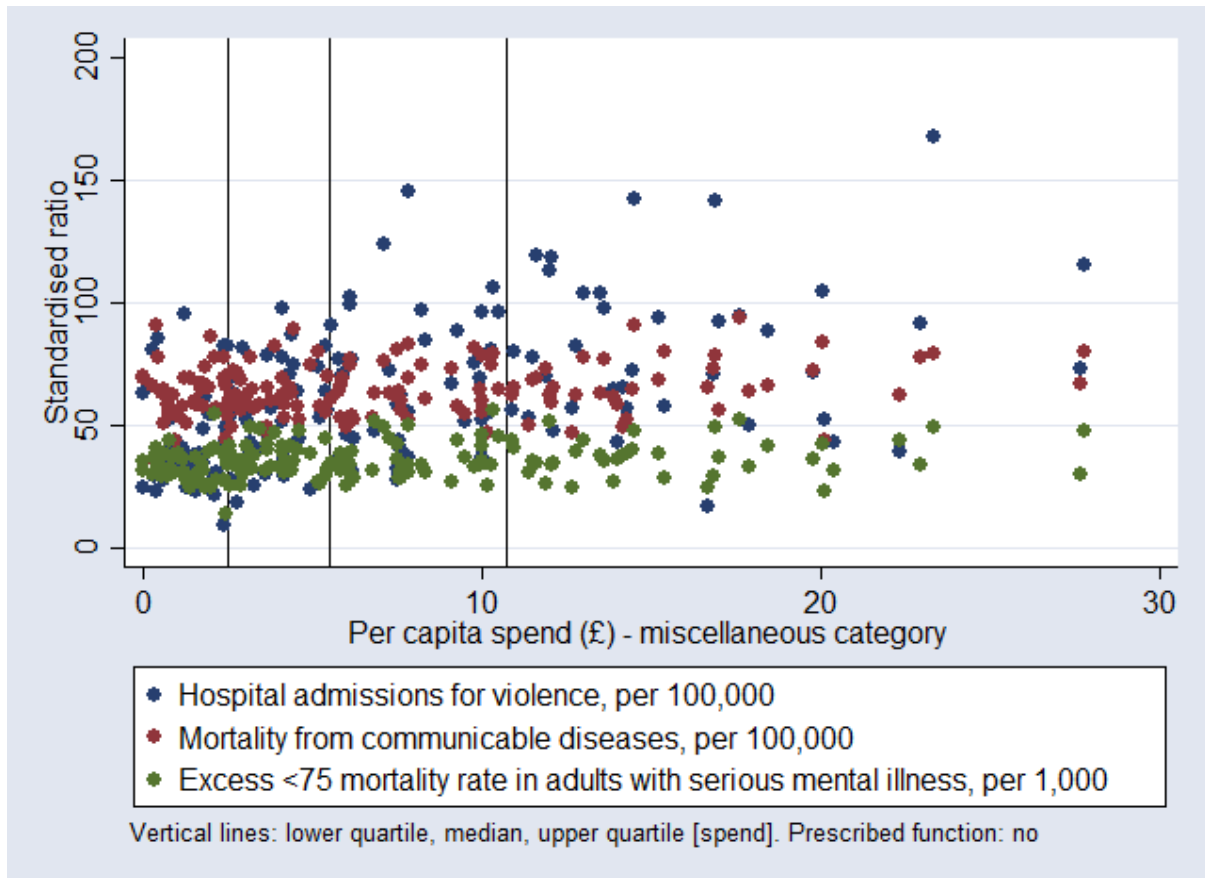


Figure 37: LA net current expenditure per capita (Miscellaneous): variation with mortality rates and hospital admissions for violence



Discussion

Implemented in April 2013, the ring-fenced public health grant to local authorities is intended “to improve significantly” the health and wellbeing of local populations, execute health protection and health improvement functions, provide population healthcare advice, and reduce health inequalities across the life course and for under-served groups.

The ring-fenced public health budgets were developed using a ‘fair shares formula’ to reflect the relative need of each local authority [3]. This report provides an oversight of how local authorities spent these public health budgets in the first year of operation, but does not shed light on whether local authorities have met the objectives underpinning the ring-fenced public health grant.

New reporting guidelines mean that for the first time there is a degree of transparency about how funds have been spent on tackling local public health priorities [6], and how local authorities’ spend on six mandatory and 12 non-mandatory public health functions varied in the first year of operation. The move towards a more explicit reporting system is to be welcomed, notwithstanding some of the data limitations that we discuss below.

Only one year of expenditure data was available, and we were therefore unable to explore trends over time. However, over the duration of the project there should be scope to address this as more data become available. For some categories of spend (e.g. health protection), the selection of relevant outcomes from the PHOF was challenging. In our case study sites, we will be able to explore further how public health spend is categorised, potential ambiguities across categories and relationships with public health related spend across directorates.

Overall, data on allocations tallied well with data on estimated and actual budgets. Total public health spend was forecast to be about £57 per head across the 152 local authorities. Actual spend was lower - £53 per head - but within this overall difference there were ‘winners’ and ‘losers’ across the categories of spend. The largest absolute difference between forecasted and actual spend was for the national child measurement programme (NCMP) where mean actual spend was £8.86 per head higher than forecasted. Although 62 local authorities forecasted zero spend for this category, all reported positive values for actual spend. There was a huge variation in NCMP per capita actual spend, ranging from £0.12 to £325.²³ These ranges are so wide that they appear implausible, and the variation could be due to mis-categorisation or to ambiguities built in to the reporting categories. While local authorities may have struggled to identify spend on the NCMP separately from overall school nursing services, data published by the Health and Social Care Information Centre indicate that the overall participation rates on the NCMP are generally very high. For some categories, where local authorities reported low or even zero per capita expenditure this may underestimate the actual services provided in the local authority and this underlines the risks of drawing conclusions about service provision from data on spend. The factors driving these variations warrant further scrutiny.

²³ City of London is excluded from this range, as its resident population is small and may not reflect the number of individuals ‘treated’ (i.e. school children who travel into London). A similar argument applies to other categories of spend (e.g. sexual health services) where the population treated may not be resident.

One possible reason for unexplained variations in per-capita spend is that local authorities used the miscellaneous category to apportion unidentifiable spend. There are accounting guidelines on what types of spend should be included within this category [10], and we unsuccessfully attempted to access disaggregated data – but the DCLG does not collect them. Local authority expenditure on the miscellaneous category totalled £345m (14% of total spend) in 2013/14. Given the magnitude of public health funds apportioned to this category, the importance of the subcategories, and the need to assure local authority accountability for public funds, the 15 subcategories should ideally be reported to the DCLG using the same RO and RA returns.

In our comparisons of each of the 18 categories of spend with outcomes, we used simple scatter plots to show the associations. We also provided details of correlations, proportions of total public health spend, and provided a brief narrative for each category. As an overview, we undertook a simple quadrant analysis to identify local authorities with levels of expenditure and outcomes consistently above or below average. In contrast, PHE's Spend and Outcome Tool (SPOT) is more sophisticated than our approach. It enables local authorities to compare their outcomes and expenditure interactively in a variety of formats and against a range of peer groups. Nonetheless, we made three improvements to the SPOT approach: first, we used more recent outcomes data and our expenditure data had fewer missing values; second, we used age and gender specific populations to estimate per capita values for each category rather than using total resident population as the base for all categories of spend; and third, we provided specific indicators for each of the 18 categories: SPOT provides a limited range of outcomes for selected programme budget categories, although alternative graphic interfaces allow users to compare their spend with any indicator chosen from a long drop-down list. To refine its approach, SPOT could consider using age/gender specific populations as the basis for its per capita estimates of spend.

The findings reported here are descriptive, rather than analytical. With just one year of expenditure data, there is no scope for longitudinal analysis nor for investigating causal associations. ACRA's fair funding formula adjusts for underlying need, and it was therefore unsurprising that higher levels of expenditure were associated with greater deprivation (Figure 2). In workstream 2, we plan to undertake a series of regression analyses to investigate the relationship between spend and outcome for two of the 18 budget categories. These analyses will seek to control for confounding factors such as age, gender and deprivation and should provide a more robust investigation of the relationship between public health spend and outcomes for local authorities.

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Appendix 1: Local authority spend on the 'miscellaneous' category

Local authority spend on the 'miscellaneous' category averaged almost 14% in 2013/14, though this ranged from zero (by Luton UA and Surrey CC) to almost 35% (for Telford & the Wrekin UA). An overview of the variation in miscellaneous spend is show below. Details of the 15 subcategories covered by the miscellaneous category are reported in Table 2.

Figure 38: Histograms showing the distribution of miscellaneous spend within and across classes of local authorities

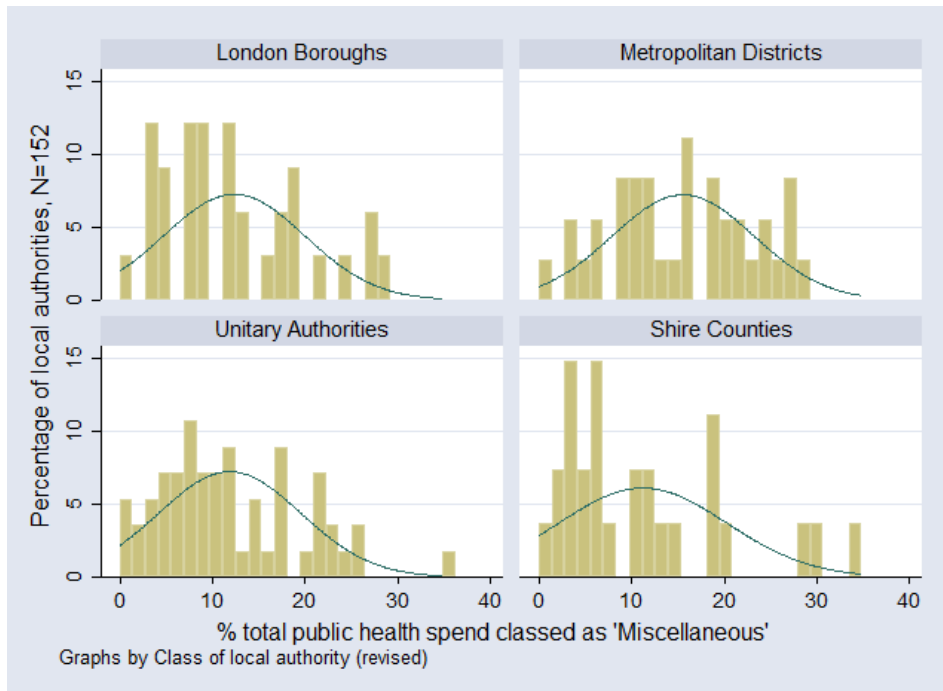
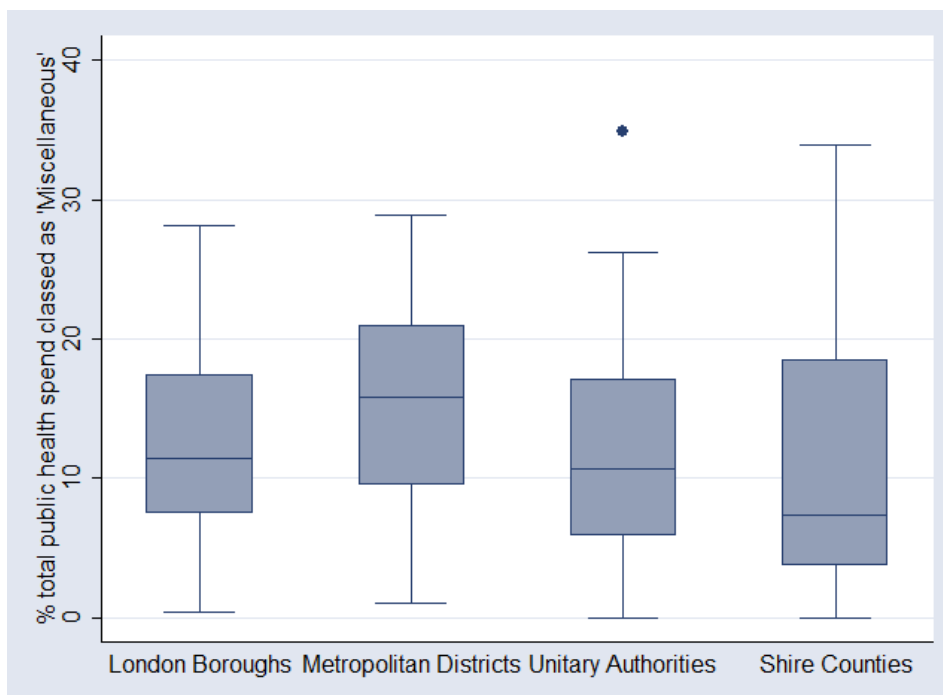


Figure 39: Box plots showing the distribution of miscellaneous spend within and across classes of local authorities



Appendix 2: Project Datasets and Sources

Table 5: Datasets for the project: description and sources

Type of data	Description	Years available	Source
Spend, actual – Revenue Outturn (RO)	18 public health categories	Annual 2013/14	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/381067/Revenue_Outturn_RO3_data_2013-14_by_LA.xls
		Annual 2014/15	Not available from DCLG
		Annual 2015/16	
		As above	
Spend, forecast – Revenue Account (RA)	18 public health categories	Annual 2013/14	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225876/RA_SG_2013-14_data_by_LA_-_Nat_Stats_Release_-_31-Jul-2013.xls
		Annual 2014/15	https://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
		Annual 2015/16	Not available from DCLG
		As above	
General Fund Revenue Account Outturn – Specific and Special Revenue Grants (RG)	Public Health Grant and other grants	Annual 2013/14	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/380769/Revenue_Outturn_RG_data_2013-14_by_LA.xls
		Annual 2014/15	Not available from DCLG
		Annual 2015/16	
Specific and special revenue grants budget (SG)	Public Health Grant and other grants	Annual 2013/14	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225876/RA_SG_2013-14_data_by_LA_-_Nat_Stats_Release_-_31-Jul-2013.xls
		Annual 2014/15	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/335811/RA_SG_2014-15_data_by_LA_-_Nat_Stats_Release_-_23-Jul-2014.xls
		Annual 2015/16	Not available from DCLG
		As above	
Population mid-year estimates	Population Estimates by single year of age and sex for local authorities	Annual 2013/14	http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk--england-and-wales--scotland-and-northern-ireland/2013/index.html
		Annual 2014/15	
		Annual 2015/16	
		As above	
Allocations		Annual 2013/14	https://www.gov.uk/government/public

Type of data	Description	Years available	Source
		Annual 2014/15 Annual 2015/16	ations/ring-fenced-public-health-grants-to-local-authorities-2013-14-and-2014-15
Health Premium Incentive Scheme		Annual 2015/16 Annual 2016/17	(if available)
Outcomes	PHOF and other frameworks NCMP	Annual 2013/14-2015/16	http://www.phoutcomes.info/
	NHS Health Check	Annual 2013/14-2015/16	http://www.healthcheck.nhs.uk/interactive_map/
	Millennium Cohort Study (MCS)	Unclear	
Other LA profile data	Ethnicity Rurality Deprivation	2011 Census 2009 update 2010 IMD	ONS: http://neighbourhood.statistics.gov.uk/dissemination/LeadHome.do

Appendix 3: local authority profiles

Table 6: summary of Local authority characteristics, ranked by total PH spend per capita

Local Authority	Class	% non-white	% rural	% living in greatest deprivation	Total PH spend per capita
Wokingham UA	UA	11.6	17.7	0	£18.95
Surrey CC	SC	9.6	23.9	0.3	£20.29
Windsor & Maidenhead UA	UA	13.9	18.1	0	£21.81
East Riding of Yorkshire UA	UA	1.9	70.9	8.3	£22.57
Bracknell Forest UA	UA	9.4	6.5	0	£23.39
North Yorkshire CC	SC	2.7	73.7	4.4	£24.29
Buckinghamshire CC	SC	13.6	48.0	0	£24.63
Hampshire CC	SC	5.0	32.8	3.7	£24.75
South Gloucestershire UA	UA	5.0	18.9	0.5	£24.80
Rutland UA	UA	2.9	100.0	0	£25.00
Cumbria CC	SC	1.5	73.6	16	£25.07
Northamptonshire CC	SC	8.5	39.2	13.1	£25.39
Dorset CC	SC	2.1	66.9	4.6	£25.92
Devon CC	SC	2.5	73.9	4.9	£25.98
Somerset CC	SC	2.0	72.6	3.7	£26.05
West Berkshire UA	UA	5.2	42.8	1	£26.55
Hertfordshire CC	SC	12.4	22.1	1	£27.18
Shropshire UA	UA	2.0	74.5	2.7	£27.57
Bexley	LB	18.1	0.1	9.2	£27.98
Wiltshire UA	UA	3.4	68.6	2	£27.99
Milton Keynes UA	UA	20.0	10.9	12.9	£28.26
Isles of Scilly	UA	1.2	100.0	NA	£28.88
Norfolk CC	SC	3.5	62.0	10	£30.53
Oxfordshire CC	SC	9.1	55.9	5	£31.54
Kent CC	SC	6.3	37.8	11	£31.89
Gloucestershire CC	SC	4.6	45.2	7.2	£31.95
Cambridgeshire CC	SC	7.4	73.9	2.5	£32.03
Leicestershire CC	SC	8.6	42.0	1.2	£32.29
Essex CC	SC	5.7	36.3	6.1	£32.48
East Sussex CC	SC	4.0	46.0	13	£32.56
Cheshire East UA	UA	3.3	50.9	7.7	£32.69
Havering	LB	12.3	0.8	7.7	£32.85
Redbridge	LB	57.5	0.0	7.2	£33.44
Cornwall UA	UA	1.8	92.0	9.8	£33.46
North Somerset UA	UA	2.7	55.0	9.6	£33.48
Central Bedfordshire UA	UA	6.2	53.9	2.1	£34.07
Cheshire West and Chester UA	UA	2.6	40.4	15.5	£34.51
Slough UA	UA	54.3	0.3	12.8	£34.88
Staffordshire CC	SC	4.3	37.8	9.4	£34.92
Suffolk CC	SC	4.8	63.0	7.4	£35.09
West Sussex CC	SC	6.2	42.2	3.7	£35.19
York UA	UA	5.7	17.2	7.2	£35.62
Merton	LB	35.1	0.0	1.5	£36.03
Swindon UA	UA	10.2	13.8	14.4	£36.13
Lincolnshire CC	SC	2.4	72.2	11.7	£36.55
Southend-on-Sea UA	UA	8.4	0.0	23.1	£36.64
Harrow	LB	57.8	0.1	2.1	£36.93
Bromley	LB	15.7	1.1	7.9	£37.22
Barnet	LB	35.9	0.1	5.7	£37.39

Local Authority	Class	% non-white	% rural	% living in greatest deprivation	Total PH spend per capita
Sutton	LB	21.4	0.2	4.8	£38.29
Poole UA	UA	4.1	4.6	6	£38.86
Waltham Forest	LB	47.8	0.0	53.6	£38.98
Northumberland UA	UA	1.6	79.6	15.4	£39.38
Nottinghamshire CC	SC	4.5	31.5	16.2	£39.39
Derbyshire CC	SC	2.5	45.4	12.2	£39.47
Medway Towns UA	UA	10.4	10.4	15	£39.68
Bath & North East Somerset UA	UA	5.4	45.9	4	£39.89
Stockport MBC	MD	7.9	8.6	12.9	£39.96
Bedford UA	UA	19.5	30.5	10.7	£40.04
Richmond upon Thames	LB	14.0	0.0	0	£40.11
Enfield	LB	39.0	0.1	27.7	£40.11
North Lincolnshire UA	UA	4.0	52.4	19.8	£40.26
Worcestershire CC	SC	4.3	40.8	10	£40.69
Bury MBC	MD	10.8	2.9	19.7	£40.95
Herefordshire UA	UA	1.8	66.5	6.1	£41.08
Warwickshire CC	SC	7.3	43.9	5.9	£41.24
Isle of Wight UA	UA	2.7	85.6	6	£41.31
Calderdale	MD	10.3	29.6	20.9	£42.83
Bournemouth UA	UA	8.0	0.1	16.3	£43.00
Reading UA	UA	25.2	0.3	11.1	£43.05
Plymouth UA	UA	3.9	0.0	26.3	£43.06
Tameside	MD	9.1	1.1	36.7	£43.12
Warrington UA	UA	4.1	17.2	17.3	£43.40
Trafford	MD	14.5	0.4	11.2	£44.19
Peterborough UA	UA	17.5	12.9	34.1	£44.95
Croydon	LB	44.9	0.0	17.3	£45.86
Thurrock UA	UA	14.1	13.9	13.3	£46.55
Lancashire CC	SC	7.7	27.3	22.8	£46.71
Leeds	MD	14.9	12.3	28.7	£47.16
Solihull	MD	10.9	9.5	16	£47.24
Torbay UA	UA	2.5	14.9	18.7	£48.63
Walsall	MD	21.1	1.0	45.9	£48.71
Hillingdon	LB	39.4	2.9	7.1	£49.10
Rotherham	MD	6.4	12.1	33.4	£51.93
North Tyneside	MD	3.4	8.6	24.1	£51.96
Kirklees	MD	20.9	12.8	28.6	£52.11
Sheffield	MD	16.3	1.8	34.9	£52.13
Derby City UA	UA	19.7	0.2	29	£52.37
Dudley	MD	10.0	0.0	24.6	£53.68
Luton UA	UA	45.3	0.0	27.5	£54.43
Brent	LB	63.7	0.0	27.9	£54.72
Sandwell	MD	30.1	0.0	59.5	£56.01
Hounslow	LB	48.6	0.0	8.3	£56.14
Coventry	MD	26.2	0.7	32.8	£56.60
Southampton UA	UA	14.1	0.0	24.9	£57.65
Barnsley	MD	2.1	20.0	32.7	£58.70
Kingston Upon Thames	LB	25.5	0.3	1.1	£59.18
Doncaster	MD	4.7	17.0	37.5	£59.58
Oldham	MD	22.5	8.4	44.6	£60.07
Wakefield	MD	4.6	30.0	28.7	£60.13
Bradford	MD	32.6	12.6	45.2	£60.96

Local Authority	Class	% non-white	% rural	% living in greatest deprivation	Total PH spend per capita
Stockton-on-Tees UA	UA	5.4	14.1	29.7	£60.98
Ealing	LB	51.0	0.0	20.9	£61.30
Halton UA	UA	2.2	3.6	48.8	£61.35
Rochdale	MD	18.3	1.6	45.8	£61.51
Bolton	MD	18.1	3.7	41.4	£61.65
Salford	MD	9.9	0.5	47.2	£61.85
Barking & Dagenham	LB	41.7	0.0	52.1	£62.44
Birmingham	MD	42.1	0.0	56.3	£62.97
Leicester City UA	UA	49.5	0.2	41	£62.99
Wolverhampton	MD	32.0	0.0	53.8	£63.82
Redcar & Cleveland UA	UA	1.5	44.3	35.5	£63.91
Telford & the Wrekin UA	UA	7.3	16.0	23.6	£64.17
Brighton & Hove UA	UA	10.9	1.2	22	£64.36
Darlington UA	UA	3.8	12.1	27	£65.10
Newcastle	MD	14.5	1.8	37.6	£65.99
North East Lincolnshire UA	UA	2.6	12.1	38	£66.19
Portsmouth UA	UA	11.6	0.0	23.8	£66.76
Bristol UA	UA	16.0	0.0	26	£67.10
Haringey	LB	39.5	0.0	57.6	£67.54
Stoke-on-Trent UA	UA	11.4	0.4	52.6	£68.00
Southwark	LB	45.8	0.0	35.6	£68.03
St Helens MBC	MD	2.0	23.8	36.5	£68.14
Lewisham	LB	46.5	0.0	36.6	£68.28
Greenwich	LB	37.5	0.0	43.7	£68.64
Wigan MBC	MD	2.7	14.3	30.3	£70.86
Sefton	MD	2.6	11.7	23.8	£71.04
Wirral	MD	3.0	18.8	31.6	£71.87
Gateshead	MD	3.7	10.2	39	£72.20
Newham	LB	71.0	0.0	83.8	£72.28
Sunderland	MD	4.1	0.6	37	£72.76
Durham UA	UA	1.8	74.6	28.7	£75.58
Manchester	MD	33.4	0.0	65.1	£77.00
Lambeth	LB	42.9	0.0	36.6	£79.25
Blackburn with Darwen UA	UA	30.8	5.0	52.4	£80.59
Liverpool	MD	11.1	0.0	64.4	£80.79
Wandsworth	LB	28.6	0.0	11.7	£81.04
Nottingham City UA	UA	28.5	0.0	51.9	£83.92
South Tyneside	MD	4.1	0.2	40.2	£84.62
Hartlepool UA	UA	2.3	2.9	48.2	£85.51
Kingston-upon-Hull UA	UA	5.9	0.0	51.8	£87.69
Knowsley	MD	2.8	1.4	60	£92.94
Hammersmith & Fulham	LB	31.9	0.0	26.3	£99.34
Tower Hamlets	LB	54.8	0.0	70.2	£106.86
Camden	LB	33.7	0.0	24.9	£106.97
Middlesbrough UA	UA	11.8	0.3	54.3	£109.65
Kensington & Chelsea	LB	29.4	0.0	23.5	£110.56
Hackney	LB	45.3	0.0	79.9	£112.15
Westminster	LB	38.3	0.0	23.5	£116.54
Islington	LB	31.8	0.0	52.9	£117.46
Blackpool UA	UA	3.3	0.0	48	£123.46
City of London	LB	21.4	0.0	NA	£209.73

Notes: LB: London borough; UA: unitary authority; MD: metropolitan district; SC: Shire County. % non-white: population of non-white ethnicity; % rural: % population living in rural areas (incl. Large Market Town populations); % living in greatest deprivation: % of population living in 20% most deprived areas in England (IMD2010)

Key	Indicator	Unit	Expenditure category																		Total spend		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
HI	2.04 - Under 18 conceptions	per 1000		x																			
HI	2.04 - Under 18 conceptions: conceptions in those aged under 16	per 1000		x																			
HI	2.06i - Excess weight in 4-5 year olds	%							x			x		x								x	
HI	2.06ii - Excess weight in 10-11 year olds	%							x			x		x								x	
HI	2.07i - Hospital admissions caused by unintentional and deliberate injuries in children (aged 0-14 years)	per 10,000																				x	
HI	2.07ii - Hospital admissions caused by unintentional and deliberate injuries in young people (aged 15-24)	per 10,000																				x	
HI	2.08 - Emotional well-being of looked after children	0																				x	
HI	2.12 - Excess Weight in Adults	%									x			x									
HI	2.13ii - Percentage of active and inactive adults - inactive adults	%									x			x									
HI	2.14 - Smoking prevalence - adults (over 18s)	%																				x	x
HI	2.14 - Smoking prevalence - routine & manual	%																				x	x
HI	2.15i - Successful completion of drug treatment - opiate users	%																				x	
HI	2.15ii - Successful completion of drug treatment - non-opiate users	%																				x	
HI	2.17 - Recorded diabetes	%																					x
HI	2.18 - Alcohol related admissions to hospital - narrow definition	per 100,000																					x

Key	Indicator	Unit	Expenditure category																		Total spend
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
HC	4.04i - Under 75 mortality rate from all cardiovascular diseases (provisional)	per 100,000																			x
HC	4.04ii - Under 75 mortality rate from cardiovascular diseases considered preventable (provisional)	per 100,000																			x
HC	4.08 - Mortality from communicable diseases (provisional)	per 100,000																			x
HC	4.09 - Excess under 75 mortality rate in adults with serious mental illness	%																			x
No. indicators / spend category (total: 58)			1	2	2	3	5	2	0	3	2	3	2	2	1	2	2	2	10	7	7

PH expenditure category

- 1 361 Sexual health services - STI testing and treatment (prescribed functions)
- 2 362 Sexual health services - Contraception (prescribed functions)
- 3 363 Sexual health services - Advice, prevention and promotion (non-prescribed function)
- 4 365 NHS health check programme (prescribed functions)
- 5 366 Health protection - Local authority role in health protection (prescribed function)
- 6 368 National child measurement programme (prescribed functions)
- 7 370 Public health advice (prescribed functions)
- 8 371 Obesity - adults
- 9 372 Obesity - children
- 10 373 Physical activity - adults
- 11 374 Physical activity - children

- 12 376 Substance misuse - Drug misuse - adults
- 13 377 Substance misuse - Alcohol misuse - adults
- 14 378 Substance misuse - (drugs and alcohol) - youth services
- 15 380 Smoking and tobacco - Stop smoking services and interventions
- 16 381 Smoking and tobacco - Wider tobacco control
- 17 383 Children 5–19 public health programmes
- 18 385 Miscellaneous public health services
- 390 TOTAL PUBLIC HEALTH (total of lines 361 to 385)

Indicator Key

- OA overarching
- WD wider determinants
- HI health improvement
- HP health protection
- HC healthcare / mortality

