

Obesity and Social Care in Scotland

EVIDENCE OVERVIEW
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Commissioned by Obesity Action Scotland



**Obesity Action
Scotland**

Healthy weight for all

Obesity and its impact on the type and cost of Social Care in Scotland: rapid review

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Introduction

There is good evidence that the level of obesity within Scotland, the UK and other developed countries has been steadily increasing over many years. The impact of this increasing burden on health care delivery has also been well documented. Less is known, however, regarding the impact and costs of obesity on social care delivery within Scotland. This rapid review sought to find any data to help understand the current and future impacts on the provision and cost of social care delivery for community dwelling adults in Scotland

Rapid Review questions:

1. What is the range and nature of the evidence in this area?
 - a. What types of studies have been conducted?
 - b. What is the quality of studies in this area?
2. What is the evidence for the effects of obesity on the
 - a. Type of social care provided in Scotland
 - i. Currently?
 - ii. In the future?
 - b. The costs of social care provision in Scotland
 - i. Currently?
 - ii. In the future?
3. What are the implications of the available evidence for Scottish
 - a. Policy?
 - b. Practice?

Method

We conducted a rapid evidence synthesis over a six day period in March 2019, searching for any reviews or primary studies focussing on understanding the effects of obesity on the provision and/or cost of adult social care* in Scotland.

Relevant published literature were identified by searching 5 key electronic databases: Social Services Abstracts (SSA); Social Care Online (SCO); Sociological abstracts; Applied Social Sciences Index and Abstracts (ASSIA); Google Scholar. We also searched all Scottish Government websites.

Search strings were developed and tested for each database according to the following search architecture:

1. Obesity.....or synonyms (in the title or abstract)
2. Obesity (mapped to MeSH)
3. 1 OR 2
4. Social care.....or synonyms (in the title or abstract)
5. Social care (mapped to MeSH)
6. 4 OR 5
7. Limit to published since 2000 and in English language
8. 3 AND 6 AND 7
9. Deduplicate 8

We de-duplicated the results of the search. Studies were screened according to the following inclusion criteria:

Include if:

- Is a review or study which primarily focuses on the provision of social care and obesity in Scotland
- Is a review which includes empirical studies of the provision of social care and obesity anywhere in the world
- Was published in the English Language in after 1999

Of those studies or reviews that met inclusion criteria, we reported the range and nature of the evidence they contained. We then mapped their findings with regard to each of the rapid review questions. A narrative synthesis of the study findings under each of the review questions was then conducted.

*We defined Adult Social Care to encompass: social work; care home services in the community for adults.

Reviews that included literature from around the world were examined for any Scottish specific studies. We also considered the settings of the primary studies they contained and assessed them for relevance to the Scottish context based upon the following approach to grading: A (directly relevant, Scottish based); B (probably relevant, non-Scottish based but apply to other UK settings); C (possibly relevant, non UK but should be interpreted with caution due to strong cultural or institutional differences); D (not relevant, clearly irrelevant due to cultural, institutional or legislative differences).

We adopted the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre, 2010) approach to assessing quality and relevance of studies: EPPI-Centre Weight of Evidence (WoE) judgments were applied to each of the included reviews or studies. Three components were assessed in order to help derive an overall weighting of evidence score (a. methodological quality; b. methodological relevance; c. topic relevance).

Methodological quality: the trustworthiness of the results judged by the quality of the study within the accepted norms for undertaking the particular type of research design used in the study. This involved asking questions related to a study's reporting, context, sample, design, reliability and validity of data-collection and analysis (including appropriate number and range of explanatory variables in the statistical models), ethics, sample size, risk of bias resulting from selection and maintenance of sample, and generalisability.

b. Methodological relevance: the appropriateness of the study design for addressing their particular research question/s

c. Topic relevance: the appropriateness of focus of the research for answering the review question

The following scoring system was used to make assessments for each of the three components assessed: 1 = excellent, 2 = good, 3 = satisfactory, 4 = inadequate

Judgement of overall weight of evidence (WoE) was made based on the assessments for each of the above criteria and by using the same scoring system. Studies classified as medium overall will still be included in the synthesis as they meet the inclusion criteria for the review, but less reliance will be placed on their results.

Results

The search resulted in 1,673 results being found, of which 1,654 were subsequently excluded (see figure 1 below).

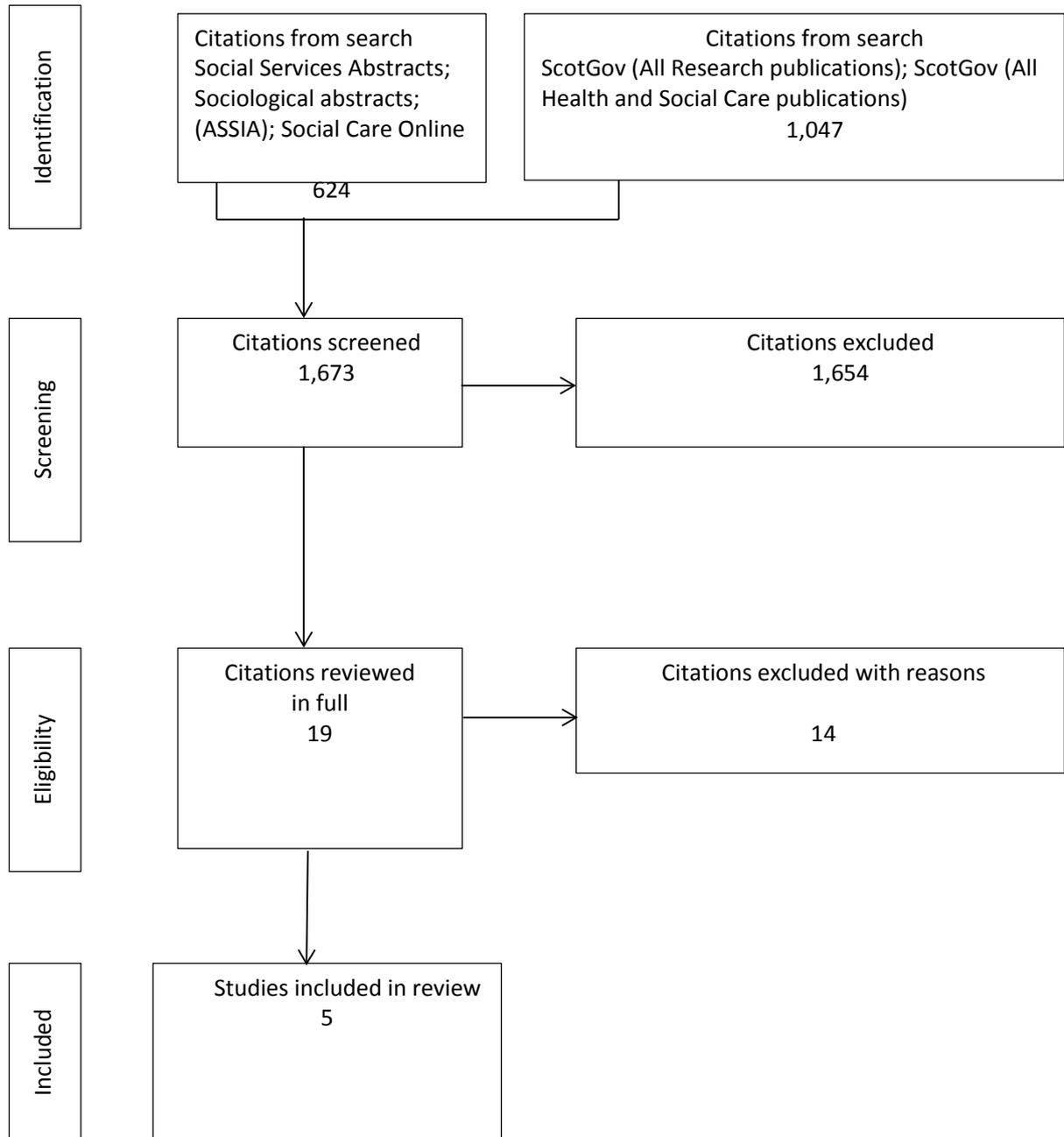


Figure 1: Flow diagram of study selection

Nineteen citations were retrieved in full. Following detailed scrutiny of the full texts, 14 were subsequently excluded (see Table 1 below for reasons for exclusion). One citation (Kings Fund, 2018) was excluded because it did not report any data or information relevant to obesity. The remaining 13 excluded studies were all excluded because they did not report any information or data relevant to social care. Whilst many of these excluded studies were reviews or discussion pieces focusing on the implications and costs of obesity on care delivery, none provide any specific data to help understand the implications for social care delivery. Only 5 studies (Copley et al, 2017; Local Government Association 2013; 2017; Public Health England, 2015; Wang, 2011) were included due to providing some level of useful data or information (see Table 2 below for characteristics of included studies).

Table 1: Citations excluded with reasons for exclusion

Citation	Reason for exclusion
Barth JH. 2015. How should we deliver obesity services? <i>British Journal of Obesity</i> . 1 (4).	No data or information regarding Social Care
Cancer Research UK and UK Health Forum (2016). Tipping the Scales: why preventing obesity makes economic sense.	No data or information regarding Social Care
Grieve et al. 2013. The disproportionate economic burden associated with severe and complicated obesity: a systematic review. <i>Obesity Reviews</i> . 14, 883–894.	No data or information regarding Social Care
Guh, DP. Et al. 2009. The incidence of co-morbidities related to obesity and overweight: A systematic review and meta-analysis. <i>BMC Public Health</i> . 99:88.	No data or information regarding Social Care
Kings Fund. 2018. Key challenges facing the adult social care sector in England.	No data or information regarding obesity
McCormick, B, & Stone, I. 2007. Economic costs of obesity and the case for government intervention. <i>Obesity Reviews</i> . 8(1): 161-164.	No data or information regarding Social Care
McKinsey Global Institute. 2014. Overcoming Obesity: An Initial Economic Analysis.	No data or information regarding Social Care
McNamee, P. et al. 2015. A review of the evidence base for modelling the costs of overweight, obesity and diet-related illness for Scotland, and critical appraisal of the cost-effectiveness evidence base for population wide interventions to reduce overweight, obesity and diet-related illness. <i>Foods Standard Scotland</i> .	No data or information regarding Social Care
Musingarimi, P. 2009. Obesity in the UK: A review and comparative analysis of policies within the devolved administrations. <i>Health Policy</i> . 91: 10–16.	No data or information regarding Social Care
National Institute for Health and Care Excellence. 2014. Costing report: Obesity, Implementing the NICE guideline on obesity (CG189).	No data or information regarding Social Care
Safefood. 2012. The cost of overweight and obesity on the Island of Ireland.	No data or information regarding Social Care
Specchia ML. et al. 2014. Economic impact of adult obesity on health systems: a systematic review. <i>European Journal of Public Health</i> . Vol. 25, No. 2, 255–262.	No data or information regarding Social Care
Tovey, M. 2017. IEA Discussion Paper No.80. Obesity and the public purse: Weighing up the true cost to the taxpayer. Institute of Economic Affairs.	No data or information regarding Social Care
Tremmel, M. et al. 2017. Economic Burden of Obesity: A Systematic Literature Review. <i>Int. J. Environ. Res. Public Health</i> 2017, 14(4), 435.	No data or information regarding Social Care

Table 2: Characteristics of included studies

Citation	Paper/study type	MQ	MR	TR	WoE	Information/data relevant to Social Care
Copley 2014	Reports a study investigating the relation between the self-reported need for social care and potential determinants, including body mass index (BMI), using data from Health Survey for England.	2	2	1	2	<p>BMI is positively associated with self-reported need for social care after adjustment for sociodemographic characteristics and limiting long term illness.</p> <p>A one unit (i.e. 1 kg/m²) increase in BMI is on average associated with a 5% increase in the odds of need for help with social care (odds ratio 1.05, 95% CI 1.04 to 1.07).</p> <p>Adjusting for long term illness and sociodemographic characteristics the annual cost of local authority funded care for an individual is estimated to be £599 per year at a BMI of 23 but £1086 per year at a BMI of 40</p>
Local Government Association 2017	Provides a briefing which focuses on the Whole Systems Obesity programme in England. The programme aims to provide local authorities with a different approach to tackling obesity which involves the whole local system of stakeholders. (The full report is due out early 2019).	3	3	3	3	<p>The financial burden of obesity is also significant. In 2014/15, the cost of obesity and related ill health to the NHS in England was estimated at £6.1 billion per annum. Obesity also impacts local authorities' social care budgets: direct costs attributed to obesity are estimated at around £352 million per annum.* Conditions linked to obesity, such as type 2 diabetes, although not yet systematically quantified, are likely to impose a significant additional social care burden. The costs to the wider economy are even greater, estimated at £27 billion per annum.</p> <p>*Source: Unpublished analysis of Health Survey for England combined data 2011 and 2012. Obesity Knowledge and Intelligence. PHE 2014. Cost of extra formal hours of help for severely obese compared to healthy weight people.</p>
Local Government Association 2013	This discussion paper considers the impact that obesity has on social care and the challenges facing social care now and in the future	4	4	1	3	<p>Adults with severe obesity may have physical difficulties which inhibit activities of daily living. This can have resource implications for social care services including:</p> <ul style="list-style-type: none"> housing adaptations such as specialist mattresses, doors, toilet frames, hoists and stair lifts

						<ul style="list-style-type: none"> specialist carers (trained in manual handling of severely obese people) for people who are house bound and have difficulties caring for themselves provision of appropriate transport and facilities (such as bariatric patient transport and specialist leisure services).
Public Health England 2015	Regarding “making the case for tackling obesity”: Provides background information and evidence behind the facts as well as easy access to key reports and data sets.	4	4	3	4	<p>Around 44% of the incidence of diabetes, 23% of heart disease and between 7% and 41% of certain cancers (for example, breast, colon and endometrial) are attributable to excess body fat.</p> <p>The cost of providing social care services for people who are housebound or have limited mobility as a consequence of these conditions is likely to rise.*</p> <p>*Source National Institute for Health and Care Excellence. Preventing obesity and helping people to manage their weight. NICE local government briefings. 22 May 2013.</p>
Wang 2011	Reports the application of a simulation model to project the probable health and economic consequences in the next two decades from a continued rise in obesity in the UK and the USA.	1	1	3	2	<p>The medical costs of obesity represent the monetary value of health-care resources devoted to managing obesity-related disorders, including the costs incurred by excess use of ambulatory care, hospitalisation, drugs, radiological or laboratory tests, and long term care (including nursing homes).</p> <p>The costs associated with treatment of obesity-related morbidity are high, but a reduction in obesity may not result in net cost savings. Some researchers argue that prevention of obesity could result in lengthened lifespan, which in turn could lead to increased costs in a person’s lifetime for treatment of diseases associated with ageing but not directly related to obesity, such as dementia.</p> <p>For future studies, how the overall health burden of obesity might differently affect the budgets of various segments of health systems, and how these burdens might create disparate incentives for obesity prevention programmes, are important issues.</p>

Copley et al, (2014) conducted a study investigating the relation between the self-reported need for social care and potential determinants, including body mass index (BMI). The study was based upon data from the Health Survey for England (HSE), an annual survey designed to be representative of the population living in private households in England. The study focussed on data from 6462 adults aged 65 or over. They found that Body Mass Index (BMI), after adjustment for sociodemographic characteristics and limiting long term illness, was positively associated with self-reported need for social care. Estimates of the cost implications for social care delivery were also reported. They concluded that an increase in need for care with BMI gives rise to additional costs in social care provision, which should be borne in mind when calculating the cost-effectiveness of interventions aimed at reducing obesity. The study was well conducted and reported, and was directly focussed on the rapid review topic of interest, thus assessed as WoE 2.

Two citations (Local Government Association 2013; 2017) provide discussion/briefing of some issues relating to the impact of obesity on the provision of social care. The latter provides a brief but useful account of the types of social care needs that can be affected (see Table 2 above). The more recent publication by the Local Government Association (2017) is a preliminary report of the cost implications (the full report is due for release early 2019 but at time of writing [March 2019] it is not yet available). The report includes several case studies of English-based local practice examples using a Whole Systems Approach to tackle obesity. The discussion piece makes reference to figures related to the cost of obesity for social care budgets (see Table 2 above).

The report by Public Health England (2015) draws attention to the finding that the cost of providing social care services for people who are housebound or have limited mobility as a consequence of conditions such as diabetes or heart disease is likely to rise. However, no specific forecast of likely cost is provided.

Finally, the well conducted study by Wang et al (2011) provides an analysis of the UK and USA health care costs associated with obesity, making mention of the implications for social care (more specifically long term care). Their analysis indicates that medical costs of obesity represent the monetary value of health-care resources devoted to managing obesity-related disorders, including the costs incurred by excess use of ambulatory care, hospitalisation, drugs, radiological or laboratory tests, and long term care (including nursing homes). The statement regarding the implications for “long-term care (including nursing homes)” has no evidence reported to support it and is the only reference throughout the analysis to social care related issues or costs.

Discussion

The association of obesity with the development of long-term conditions means that obesity is linked to a greater need for social care. In addition, adults with obesity may have physical and social difficulties which inhibit daily living and can also require social care (Local Government association, 2013). The annual cost of treating conditions associated with overweight and obesity is estimated to range from £363 million to £600 million. The total annual cost to the Scottish economy of overweight and obesity, including labour market related costs such as lost productivity, is estimated to be between £0.9 billion and £4.6 billion (Castle, 2015). It is not clear, however, to what extent social care costs contribute to this economic burden.

The results of this rapid review suggest that there is a startling lack of information or data regarding the impact of obesity on social care. Much more evidence exists regarding the burden upon the direct impacts and costs of health care provision more generally or to work absenteeism specifically. Even with regard to studies focusing on health, they vary considerably on core issues of focus (whether on obesity, overweight or overweight and obesity), specific costs estimated (direct costs, indirect costs or both) and methods (“top-down [population]” or “bottom-up [individual]” approaches) (Safefood, 2012). For example, whilst some studies have focused on hospital costs alone, others have focused on drug costs, or on GP/primary care costs alone (Safefood, 2012).

Reviews and studies often mention “health and social care costs” but rarely are social care costs considered separately. Indeed, some authors explicitly state that “social care costs associated with obesity have not been calculated” (McCormick, 2007. P162). More often studies focus on the direct medical costs rather than indirect costs. For example, in a comprehensive systematic review of the economic burden of obesity on health systems, Specchia (2014) concludes that, as many studies have been conducted from the payer perspective, only direct medical costs can be considered exhaustive. A further review of the evidence (Safefood, 2012) focuses only on direct costs (GP; inpatient; outpatient; drugs) and in-direct costs (absenteeism; premature mortality).

Copley (2017) estimated the variation in need for community-based social care by body mass index in England and calculated associated social care costs. Copely (2017: P1) found that “BMI is positively associated with self-reported need for social care. A one unit (i.e. 1 kg/m²) increase in BMI is on average associated with a 5% increase in the odds of need for help with social care (odds ratio 1.05, 95% CI 1.04 to 1.07). Adjusting for long term illness and sociodemographic characteristics the annual cost of local authority funded care for those who receive it is estimated to be £599 at a BMI of 23 but £1086 at a BMI of 40.” The authors provide a caveat to their findings with regard to the nature of the study: it is cross-sectional in design and as such causation cannot be inferred. The findings indicate that BMI is positively associated with social care need but it is possible that social care need precedes raised BMI in time, rather than the other way around.

There is good evidence for the link between obesity and subsequent increased risk of heart disease, stroke, type 2 diabetes, non-alcoholic fatty liver disease and some forms of cancer. Statistically significant associations with obesity have been found with the incidence of type II diabetes, all cancers except oesophageal and prostate cancer, all cardiovascular diseases, asthma, gallbladder disease, osteoarthritis and chronic back pain (Guh, 2009). It is likely that social care delivery will be impacted by the effects of this associated morbidity.

Type II diabetes in particular has been recognised as having a potentially large impact. Currently there are over 70,000 people with diabetes in England incurring local authority direct social care costs of £1.4 billion (Institute of Diabetes for Older People, 2013). By 2030, it is estimated that the number of people in local authority care affected by diabetes will be 130,000 with an associated cost of £2.5 billion (Institute of Diabetes for Older People, 2013). The increased prevalence and cost is, to a large extent, driven by the increased ageing population and perhaps the increased prevalence of obesity. Indirect costs of the number of elderly diabetes patients who require informal care has been recognised to be significant. There were an estimated 1,160,000 people with diabetes (over the age of 70 years) requiring some form of informal care in the UK in 2010/11. This equated to over 336 million hours of social care and cost an estimated £5 billion for people with type 2 diabetes (Hex et al, 2012). Between 2011 and 2030, it is estimated that the incidence of diabetes in social care will increase by 76%. This figure could be higher as the estimates have not been stratified by age. The increase in the number of people with diabetes in social care settings will result in an increase in the cost of caring for people with the condition. The Institute of Diabetes for Older People (2013) estimate that by 2030, it will cost over £2.5 billion a year to care for people with diabetes in social care: a figure which does not take into account the costs of complications associated with diabetes. It is not clear however; to what extent any costs are specifically attributable to obesity.

Strengths and limitations

The usual caveats associated with the conduct of a rapid review should be borne in mind when reading this report. A more lengthy and in-depth search for studies in this area may have resulted in more evidence being found. Even though this was a rapid review, considerable effort was spent in trying to find relevant studies and information. This proved very challenging. It is notable that many publications that were screened, despite being described as focusing on health *and* social care, rarely if at all report any data regarding social care. It is possible that data on social care does exist, particularly with regard to specific conditions or populations. For example, a comprehensive search for the implications of diabetes for the delivery of social care may have resulted in finding relevant data for the effects of obesity. However, there is no guarantee that much relevant data would be found via this route. Furthermore, searches would need

to be constructed for many other obesity related conditions, effectively calling for a systematic review designed for each condition.

Policy and practice

Originally requested by the Labour Party, the Kings Fund (2018) prepared a briefing paper intended to identify and explore key challenges to social care provision in the UK. According to the Kings Fund (2018) In the past 20 years there have been 12 White Papers, Green Papers and other consultations about social care in England (Wenzel et al 2018), as well as five independent reviews and commissions. Yet, it is argued, little has changed. It should be noted that no consideration is given to the issue of overweight or obesity anywhere in the document. Obesity is a global, national and local concern, which impacts the health, productivity and employability of local populations. Without action, the associated costs – individual, social and economic, including social care – will continue to rise as will the disproportionate burden on children and their families from deprived areas (Local Government Association, 2017). A Whole System Obesity (WSO) programme was commissioned by Public Health England in 2015 to develop a practical guide to help councils create a Whole Systems Approach in their local area, building on learning from current national and international practice. Tackling obesity can improve workforce health, contributing to a stronger local economy, and help reduce social care costs (Local Government Association, 2017).

In order to inform Scottish policy in this area, little Scottish-based evidence exists. This paucity of Scottish-based evidence is in regard to health care costs more generally.

Healthcare costs are a minority of the total costs associated with obesity, which underlines the need for co-ordinated action that extends beyond the NHS in tackling obesity. Such is the pressure on adult social care and the NHS, it is not possible to keep pace with demand by just making services more efficient. There is a need to redesign support to make sure that all parts of the system are working towards the same shared outcomes for health and wellbeing (Local Government Association, 2013). It is important that obesity services and strategies address both prevention and treatment in order to reduce this burden on individuals and society. They need to be sensitive to the inequalities in obesity prevalence and social care requirements (Local Government Association, 2013).

Local Government Association, 2013: “There are links between obesity and social care need: both through the association between obesity and the development of long term conditions, and the physical and social difficulties that may result from the development of severe obesity. As the prevalence of obesity, especially severe obesity, along with associated long term conditions such as diabetes, increases in the population, health and social care costs are likely to rise. Effectively preventing and treating obesity

has the potential to significantly improve quality of life and wellbeing, in addition to reducing health and social care costs. Services should address both prevention and treatment of obesity in order to reduce this burden on individuals and society.”

Concluding statement

There is a startling lack of evidence concerning the effects of obesity on social care delivery. More effort and resources should be targeted at the collection, analysis and reporting of the implications of the rising levels of obesity on social care delivery.

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