A Mosaic analysis of Warwickshire's National Child Measurement Programme (NCMP) data 2013/14 to 2015/16

Background

Each year the National Child Measurement Programme (NCMP) measures the height and weight of children in Reception (aged 4 to 5 years) and Year 6 (aged 10 to 11 years) in primary schools in England. This data helps assess the patterns in underweight, healthy weight, overweight and obesity among the child population both nationally and in Warwickshire.

This analysis focuses on levels of excess weight among children at Warwickshire state primary schools. The current picture is presented in tables 1 and 2. Following this, the report highlights the findings from joining Warwickshire's NCMP data to the Mosaic customer insight tool. In addition, the final section illustrates differences in levels of excess weight by areas of deprivation.

Table 1 highlights levels of excess weight in children of Reception age. Overall, 22.7% of children of this age are recorded as either overweight or obese. Warwickshire's rate is roughly in line with the national figure of 22.6%.

Table 2 illustrates that by Year 6, proportionately more children are either overweight or obese than those in Reception. Levels of excess weight (overweight and obese) in Year 6 in some parts of the county is more than ten percentage points higher than for those in Reception. This is, however, similar to the national picture.

Rates at district and borough level for both age groups do vary. North Warwickshire Borough, Nuneaton and Bedworth Borough and Stratford-on-Avon District record levels of excess weight above the national average for Reception age children. In North Warwickshire Borough around one in four children of Reception age are either overweight or obese. For Year 6 age children, Nuneaton and Bedworth Borough records levels of excess weight above national levels.

Rugby Borough records the lowest levels of excess weight for Reception age children while Warwick District has the lowest rates for Year 6 age children.

Table 1. Levels of Excess Weight - Reception 2016/17

	Overweight & Obese	Obese
North Warwickshire Borough	24.9%	10.9%
Nuneaton and Bedworth Borough	23.7%	9.6%
Rugby Borough	20.7%	8.3%
Stratford-on-Avon District	22.8%	7.7%
Warwick District	22.4%	9.7%
Warwickshire	**22.7%**	**9.2%**
England	22.6%	9.6%

Table 2. Levels of Excess Weight - Year 6 2016/17

	Overweight & Obese	Obese
North Warwickshire Borough	34.2%	18.0%
Nuneaton and Bedworth Borough	35.9%	19.9%
Rugby Borough	30.8%	15.6%
Stratford-on-Avon District	29.6%	16.6%
Warwick District	27.5%	15.4%
Warwickshire	**31.4%**	**17.1%**
England	34.2%	20.0%

Source: NHS Digital, Table 3a, 2017

1,200

Around 1 in 5 Reception age children in Warwickshire are either overweight or obese

Is the typical number of Reception age children in Warwickshire who are either overweight or obese each year

1 in 10

Children of Reception age in North Warwickshire Borough are recorded as obese

Almost one third of children in Year 6 in Warwickshire are either overweight or obese

1 in 5

Children in Year 6 in Nuneaton and Bedworth Borough are recorded as obese

In Warwickshire, the proportion of children who are either over-weight or obese in Year 6 is higher than Reception levels

Mosaic Analysis

Mosaic is a customer insight tool developed by Experian. Using a wide range of data, households are allocated to one of 15 Groups and 66 Types, based on likely common characteristics including demographics, lifestyles and behaviour. A Mosaic profile of an area or customer group can be created which indicates the household groups and types which are more prevalent than others. In turn, information about those household groups and types can be used to better understand and target resources, information and services more efficiently.

For further information on Mosaic see the Experian Mosaic Briefing Note produced by the Insight Service.

The following analysis used Warwickshire NCMP data collected for a three year period between 2013/14 and 2015/16. Just over 33,000 records were matched to the Mosaic database using Experian's Icoder software.

By joining the NCMP data to Mosaic's household database, each household in the NCMP dataset was allocated to a Mosaic group and type. Mosaic profiles were then created for the full NCMP dataset and for those households with overweight and obese children. The two profiles were then compared to assess whether some household groups or types were more likely to contain either overweight or obese children.
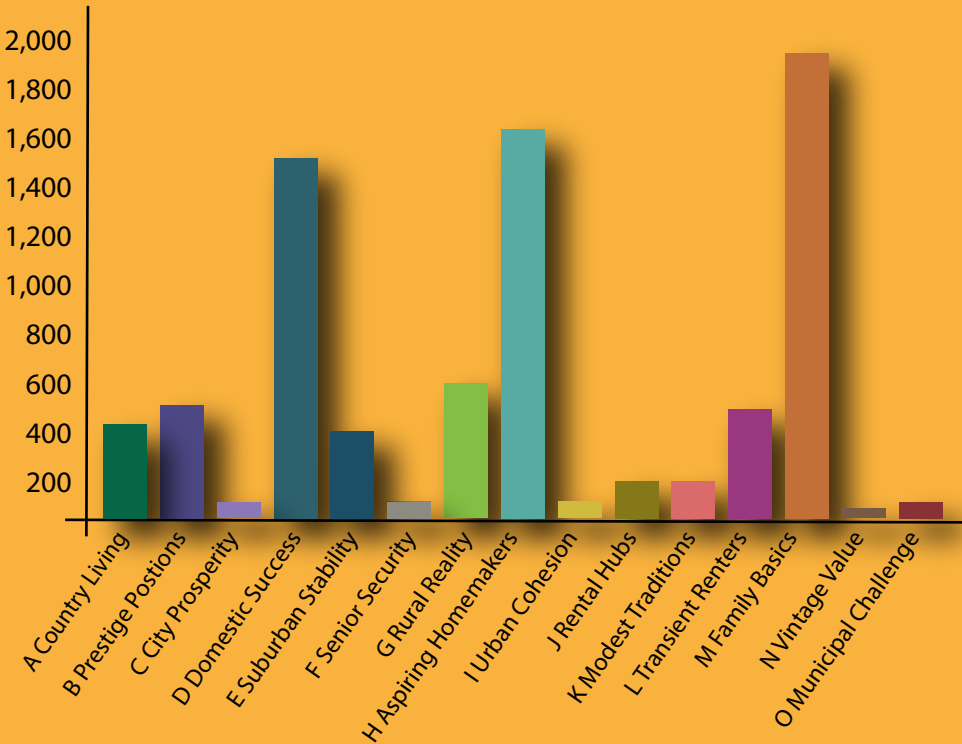
Analysis by volume

Looking at the Mosaic data by volume means we can establish the prevalence of each Mosaic group across the dataset. Figure1 illustrates the most prevalent Mosaic groups for households where children were assessed as being either overweight or obese.

The most prevalent Mosaic groups among those households with overweight or obese children are Group M, Group H and Group D. Between them they account for around three in five households with either overweight or obese children.
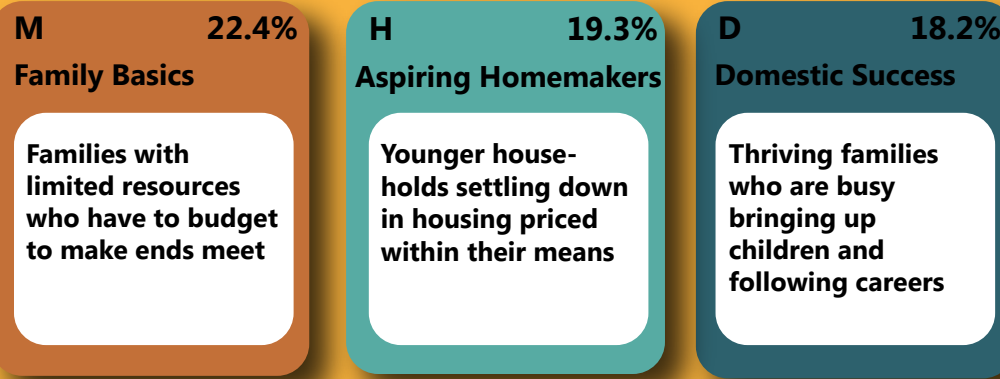
Arguably, reducing the levels of excess weight within these groups is likely to have the most impact on excess weight levels across the county, simply because they make up a large proportion of those households with overweight or obese children.

Analysis by volume

Figure 1. Profile of Warwickshire NCMP records where the assessment is 'overweight' or 'obese', 2013/14 to 2015/16

Most prevalent Mosaic Groups for households with overweight or obese children

M	22.4%
Family Basics	

Families with limited resources who have to budget to make ends meet

H	19.3%
Aspiring Homemakers	

Younger households settling down in housing priced within their means

D	18.2%
Domestic Success	

Thriving families who are busy bringing up children and following careers

Source: Mosaic, Experian Public Sector, 2016

Analysis by risk

As well as looking at prevalence, it is also useful to establish if any particular Mosaic groups have a higher propensity to contain overweight children. For example is it the case that some Mosaic groups are over-represented in the profile of children with excess weight compared to what we might expect given their representation in the general NCMP profile.

Table 3 highlights that Group D 'Domestic Success' is the most prevalent group within the NCMP dataset. It accounts for just over 20% of all records. However, it makes up a lower proportion - around 18% - of households with overweight children. This indicates that Group D households are slightly less likely than average to contain overweight or obese children.
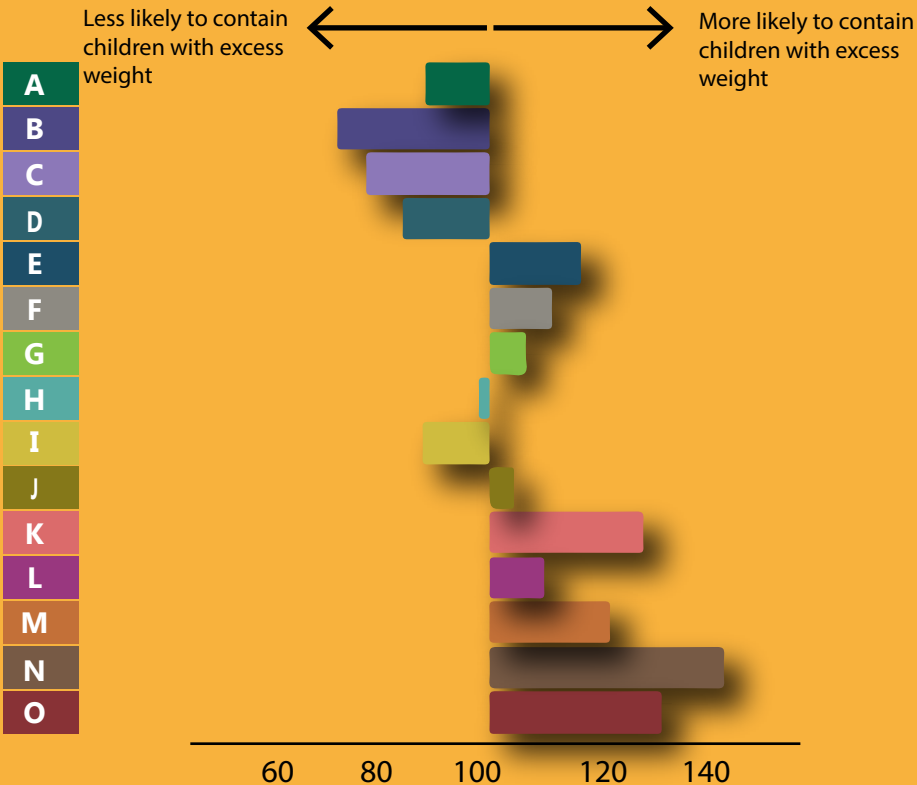
Likewise, Group H is a prevalent group in the NCMP dataset (19.7%). It is similarly represented in the overweight and obese profile (19.3%). This suggests that Group H households, while fairly numerous, are no more or no less likely to be overweight than the average for all households in the NCMP dataset. Figure 2 further illustrates this, showing the degree to which each Mosaic group is over or under represented in the profile of overweight children. Groups towards the bottom of the chart, which tend to have lower income levels and higher deprivation, are generally more likely to contain overweight children i.e their index value is greater than 100.

Table 3. Mosaic profile of NCMP data set and NCMP dataset of children with excess weight

Mosaic Group	Mosaic name	All NCMP Volume	NCMP ALL PROFILE	NCMP 'Overweight' & 'Obese' PROFILE	Index
A	Country Living	2,113	6.4%	5.7%	90
B	Prestige Positions	2,849	8.6%	6.4%	75
C	City Prosperity	185	0.6%	0.4%	79
D	**Domestic Success**	**7,062**	**21.2%**	**18.2%**	**86**
E	Suburban Stability	1,516	4.6%	5.3%	115
F	Senior Security	221	0.7%	0.7%	110
G	Rural Reality	2,346	7.1%	7.5%	106
H	**Aspiring Homemakers**	**6,535**	**19.7%**	**19.3%**	**98**
I	Urban Cohesion	274	0.8%	0.7%	89
J	Rental Hubs	796	2.4%	2.5%	104
K	Modest Traditions	645	1.9%	2.4%	125
L	Transient Renters	1,979	6.0%	6.5%	109
M	**Family Basics**	**6,211**	**18.7%**	**22.4%**	**120**
N	Vintage Value	145	0.4%	0.6%	139
O	Municipal Challenge	359	1.1%	1.4%	128

Analysis by risk

Figure 2. Likelihood of Mosaic Groups to contain overweight or obese children based on Warwickshire's NCMP data, 2013/14 to 2015/16

Less likely to contain children with excess weight ⟵ ⟶ More likely to contain children with excess weight

Index of 100 = likelihood of being overweight or obese is the same as 'all NCMP household profile'. Above 100 indicates the group is more likely to contain overweight or obese children when compared to the average for all children in the NCMP dataset, while scores below 100 indicate they are less likely to be overweight or obese

1 in 5

Overweight and obese children in Warwickshire of Reception age and Year 6 are from Group M 'Family Basics' households

Source: Mosaic, Experian Public Sector, 2016

Balancing volume vs risk

Groups who have the highest risk of containing children with excess weight (Table 3) include Groups N 'Vintage Value', O 'Municipal Challenge', K 'Modest Traditions' and M 'Family Basics'. Group N is almost 40% more likely than average to contain overweight or obese children. Group O and K are around 25% more likely. However, these groups make up only a very small proportion of the NCMP dataset and so the impact of reducing rates in these groups may have very little impact on overall rates of excess weight.
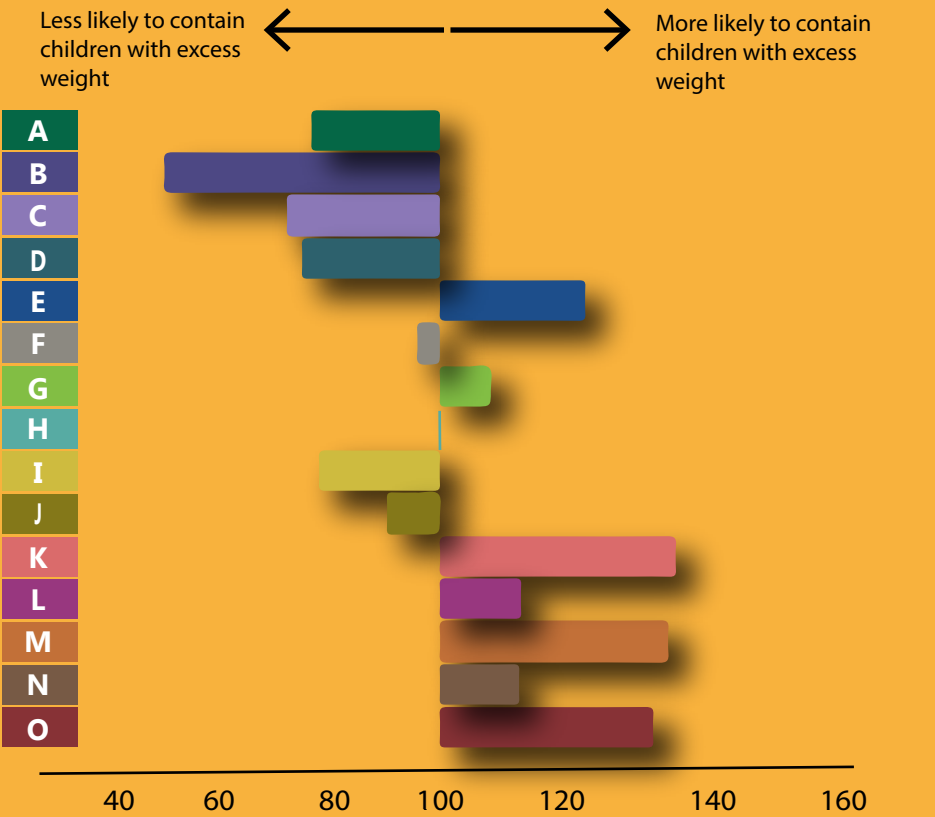
Group M Family Basics is about 20% more likely to contain overweight or obese children and also makes up the largest proportion of children with excess weight in the Warwickshire NCMP dataset. Of all the overweight and obese children in Warwickshire's NCMP dataset, over 20% were from Group M households.

If we look at Mosaic groups who have a higher risk of containing children who are 'obese' only, the pattern is similar but more accentuated. Table 4 highlights that Groups K, M and O are over a third more likely than average to have obese children. Additionally, Group E is almost 25% more likely contain children who are obese. However, Groups E, K and O are few in number in Warwickshire. Group M is more numerous and is overrepresented in the profile of 'obese' children; 25% of children assessed as 'obese' in Warwickshire are from Group M households. Based on volume and risk criteria, households from Group M could be considered a priority for more targeted preventative work for measures relating to excess weight in children.

Table 4. Mosaic profile of NCMP data set and NCMP dataset of children assessed as obese

Mosaic Group	Mosaic name	All NCMP Volume	NCMP ALL PROFILE	NCMP 'Obese' PROFILE	Index
A	Country Living	2,113	6.4%	5.0%	79
B	Prestige Positions	2,849	8.6%	4.7%	55
C	City Prosperity	185	0.6%	0.4%	75
D	Domestic Success	7,062	21.2%	16.5%	78
E	Suburban Stability	1,516	4.6%	6.5%	123
F	Senior Security	221	0.7%	0.6%	96
G	Rural Reality	2,346	7.1%	7.6%	108
H	Aspiring Homemakers	6,535	19.7%	19.5%	100
I	Urban Cohesion	274	0.8%	0.7%	80
J	Rental Hubs	796	2.4%	2.2%	91
K	Modest Traditions	645	1.9%	2.7%	138
L	Transient Renters	1,979	6.0%	6.7%	113
M	Family Basics	6,211	18.7%	25.5%	137
N	Vintage Value	145	0.4%	0.5%	113
O	Municipal Challenge	359	1.1%	1.4%	134

Figure 3. Likelihood of Mosaic groups to contain children assessed as 'obese' based on Warwickshire's NCMP data 2013/14 to 2015/16

Less likely to contain children with excess weight ← → More likely to contain children with excess weight

Index of 100 = likelihood of being obese is the same as all 'NCMP household profile'. Above 100 indicates the group is more likely to contain children assessed as 'obese' when compared to the average for all children in the NCMP dataset while scores below 100 indicate they are less likely to be assessed as 'obese'

1 in 4

Children assessed as 'obese' in Warwickshire of Reception age and Year 6 are from Group M 'Family Basics' households

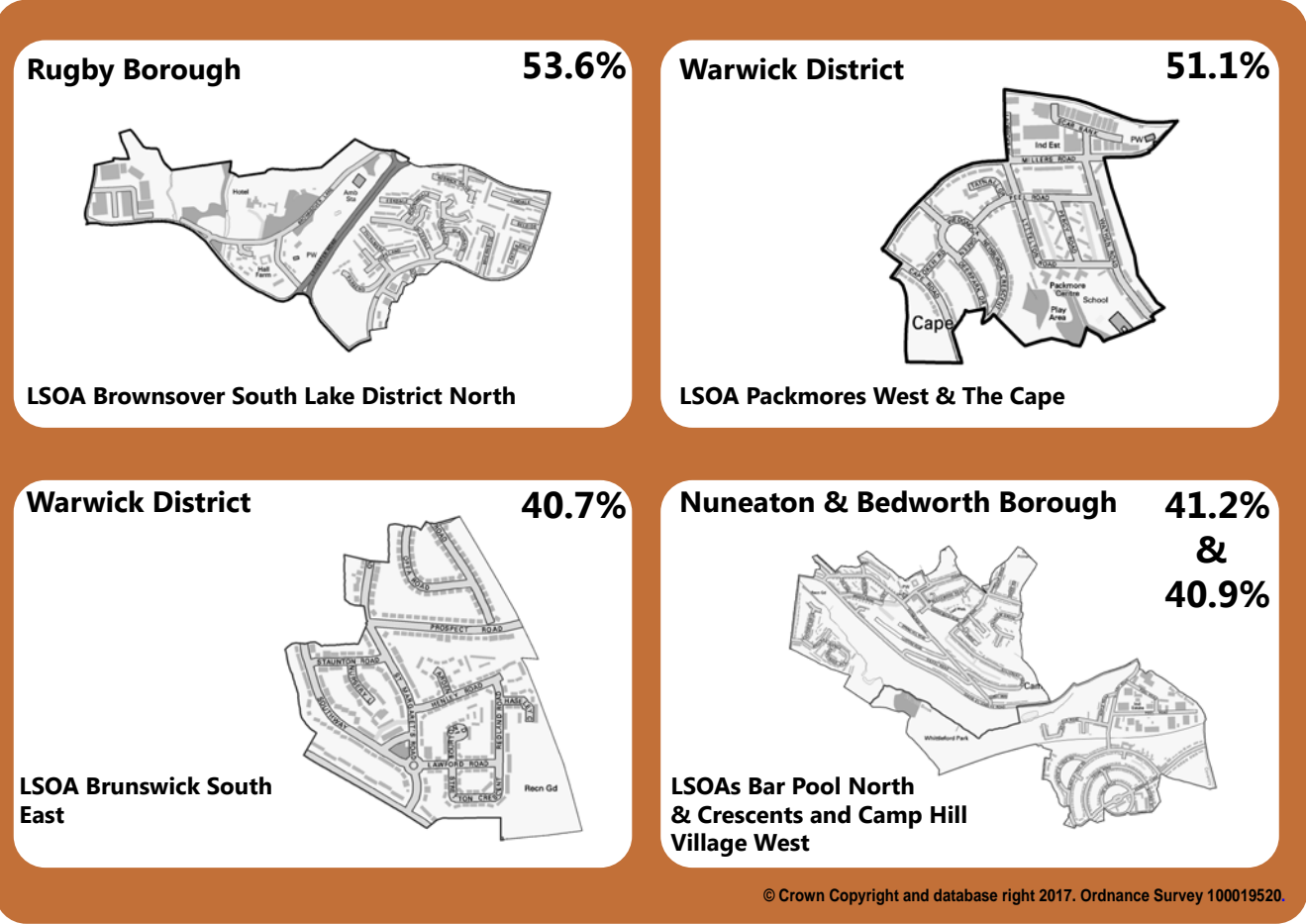*Source: Experian Mosaic Public Sector, 2016*

Characteristics of Group M Family Basics Households

Group M households are described as families with limited resources who have to budget to make ends meet. Additionally, they are more likely to shop in budget end supermarkets and less likely to engage in more healthy lifestyles. However, they are likely to be keen users of new technology. The Warwickshire NCMP data indicated that Group M households were more likely than some other groups to contain overweight children; this does not mean Group M households necessarily do contain overweight children, just that the likelihood is higher and therefore they may be a group to direct more information, advice and interventions.

In Warwickshire there are a number of areas with relatively high numbers of Group M households. Figure 4 highlights Lower Super Output Areas (LSOAs) in the county with the highest concentrations of Group M households.

Figure 4. LSOAs with the highest proportion (%) of Group M households

Rugby Borough   **53.6%**

LSOA Brownsover South Lake District North

Warwick District   **51.1%**

LSOA Packmores West & The Cape

Warwick District   **40.7%**

LSOA Brunswick South East

Nuneaton & Bedworth Borough   **41.2% & 40.9%**

LSOAs Bar Pool North & Crescents and Camp Hill Village West

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Group M Family Basics
Key Features of Group

- **Families with children**
- **Limited resources**
- **Some own low cost homes**
- **Aged 25 to 40**
- **Squeezed budgets**
- **Some rent from social landlords**

Lifestyle characteristics

Less likely to consume 'five a day'

More likely to use budget supermarkets

Are less likely to engage in regular exercise or sport

How households in Group M prefer to be communicated with compared with other groups

Mobile Phone Text or Phone call

Landline Telephone

Face to Face

Use of digital technology

- Are likely to love or like technology and have the latest gadgets
- Are most likely to own a smartphone and or tablet or laptop
- Are likely to be high users of email and use the internet daily
- Are likely to access Facebook daily
- Are likely to access Twitter regularly

Deprivation and levels of excess weight

One of the key features of Group M households is that they are more likely to be experiencing 'squeezed budgets'. It is notable that other Mosaic groups identified as at greater risk of containing overweight children (Groups N, O and K) are also groups likely to find managing on their household budget either difficult or very difficult. Nationally, there is recognition that prevalence of excess weight in children is generally higher in areas experiencing greater levels of deprivation (PHE, 2017).

One approach to looking at the relationship between deprivation and levels of excess weight is to compare the proportion of children who are overweight in each Index of Multiple Deprivation (IMD) decile. Deprivation deciles relate to nationally agreed deprivation scores for each LSOA in the country. Decile one includes all those LSOAs which are in the 10% most deprived nationally, decile two refers to the 20% most deprived nationally and so on. Figures 5 and 6 highlight levels of excess weight by deprivation decile in Warwickshire 2013/14 to 2015/16.

Key points

- For Reception age children, rates of excess weight are more than 50% higher in the most deprived LSOAs (decile 1) compared to those living in the least deprived decile.
- Reception age children living in LSOAs in the most deprived decile are more than twice as likely to be 'obese' compared to those living in the least deprived decile.
- Year 6 children are just over a third more likely to have excess weight if they live in the most deprived decile compared to those living in the least deprived decile.
- Year 6 children living in the most deprived decile are around 50% more likely to be 'obese' than their same age counterparts in the least deprived decile.

The differences in levels of excess weight between deprivation deciles would appear to be driven more strongly by rates of being 'obese' rather than 'overweight'. As noted in the Mosaic analysis, the pattern of difference between groups was more accentuated when households with just 'obese' children were considered. The risk of simply being 'overweight' appears to be more evenly distributed both between Mosaic groups and levels of deprivation.

Recommendations

- Incorporate findings into the services WCC commission linked to children of primary school age and in particular use this analysis to target improvement activity at those household groups identified as being at greatest risk of childhood obesity.
- Insight service to link to Health Needs Assessment (HAPI) data to enrich the picture we have of school age children in Warwickshire.
- Consider, at a future date, joining the 2016/17 NCMP data to the Mosaic database.

Figure 5. Reception levels of excess weight by deprivation decile in Warwickshire 2013/14 to 2015/16
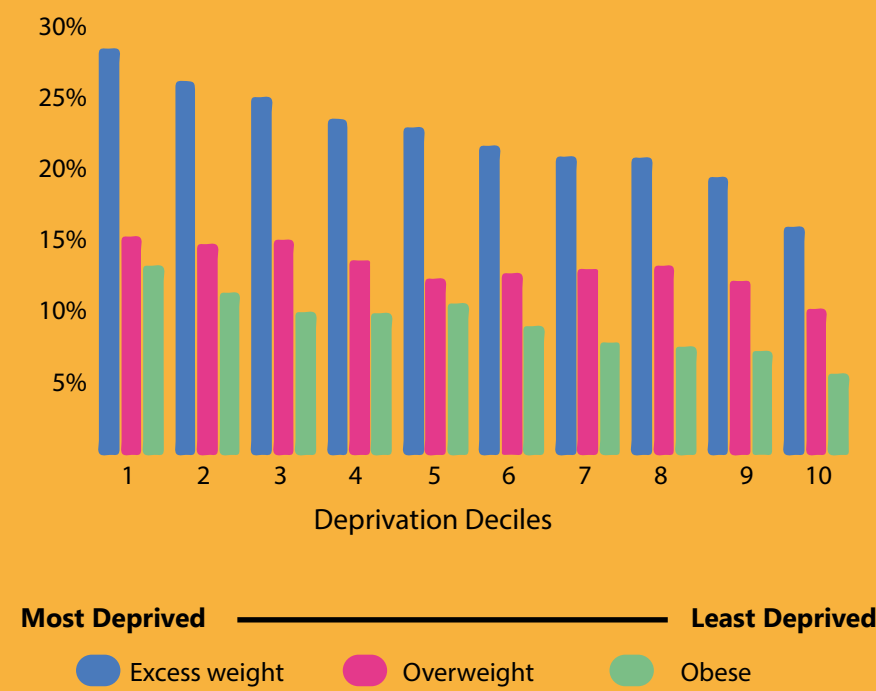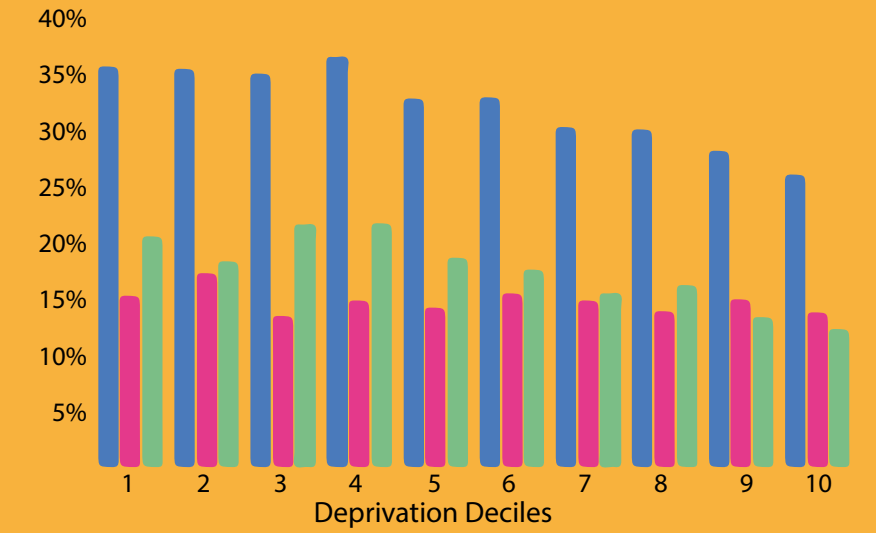
Most Deprived ——————— **Least Deprived**

Legend: Excess weight, Overweight, Obese

Figure 6. Year 6 levels of excess weight by deprivation decile in Warwickshire 2014/14 to 2015/16

Source: Indices of Multiple Deprivation, Dept for Communities and Local Government, 2015