ScotPHN report

Scottish Public Health Network (ScotPHN)

Scottish Public Health Obesity Special Interest Group (SPHOSIG) –

Review of the Obesity Route Map (ORM)

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Contents

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Acknowledgements

1 Executive Summary

On obesity in Scotland:

1. The prevalence of overweight and obesity in Scotland is high, and the underlying trend is increasing and shows a strong link with inequalities, particularly for women and children. Measurement and data reporting would benefit from review to improve our understanding and track progress.

2. Overweight and obesity are major contributors to ill health in Scotland. Two areas of particular concern are:
   - type II diabetes where almost 90% of people with the condition have a Body Mass Index (BMI) of over 25 (1); and
   - the impact on the short and long term health of both mothers and babies of obesity in pregnancy.(2)

3. Overweight and obesity result from an obesogenic environment acting on individual biology and psychology to influence individual lifestyles leading to overconsumption of energy dense foods and inactive lifestyles expending less energy. Simply encouraging individual choices that change behaviour is not a sufficient approach to dealing with the complex interplay or factors that create obesity and overweight.

On the Obesity Route Map in Scotland:

4. The Obesity Route Map (ORM)(3) focuses on prevention, and not on the treatment of obesity. Overweight and obesity can be seen as an epidemic, if a slow moving one, and would benefit from the coordination of prevention, risk management and treatment that an epidemic requires.

5. The ORM and its subsequent Action Plan are still relevant and constituted a reasonable response to the evidence at the time. Our review of subsequent evidence supports the continuation of a broad range of actions.

6. A minority of actions in the Action Plan have been successful in reaching their milestones. Most have progressed towards the milestones set. A few did not start or progressed poorly despite considerable effort.

7. Where carried out, evaluations generally show small positive effects. It is not possible to recommend any individual actions to be scaled up and further work is needed to examine the benefits of scaling up such actions.

8. There are distinct characteristics of both the more successful and least successful ORM actions. Successful ones have focused on opt-in interventions with individuals and actions are largely those that were underway or already

planned at the time of launch; new developments require greater support. Structural and environmental changes are slow to progress and require sustained effort.

9. The ORM's 4 'pillars' of energy in, energy out, early years and workplace remain important, however, the way in which they are delivered may not be as effective as it could be. A move is proposed towards community and place-based approaches focused on areas of deprivation, with broad lifestyle, and whole life course interventions, alongside continued work with individuals.

10. There have been challenges in working on food and nutrition. Whilst recognising that significant work has taken place more effort is required to achieve impact, and if progress cannot be made then moves should be made to regulate.

11. The following generic commitments in the ORM did not translate into the Action Plan and progress on them was limited. Further action is required on:
   - increasing public awareness and professional education;
   - improved national leadership and accountability; and
   - an integrated research strategy.

On emerging obesity challenges for Scotland:

12.   In addition this review has highlighted the need for:
   - a stronger infrastructure locally to enable effective coordination of action to achieve impact;
   - the integration of policies across all fields, and strategies for effective implementation without unintended effects to promote obesity. This would include greater coordination of outcomes, indicators, evaluation and reporting;
   - a review of direct and indirect funding for the prevention, management and treatment of overweight and obesity to ensure effective investment in view of the high cost burden of later disease; and
   - the NHS to be an exemplar in many aspects, particularly with supporting those of its staff who are overweight and obese and could benefit from weight management.

2   Recommendations

a)   Recommendation 1

The development of a revised ORM would benefit from being led by a dedicated specialist supported by an expert group and the setting up of a formal review process. The ORM should be revised in light of progress and updated to include:

- recognition of the epidemic nature of the problem in that all population groups are affected and, accepting the principle, as defined by the World Health Organisation (WHO) that an epidemic can only be resolved by government-led action, set goals to stop the increase in overweight and obesity across all population groups in Scotland. This should acknowledge the need to take a full life course approach which prioritises early years, but also addresses young people and later life;

- recognition of the need for coordination of action(s) on prevention, weight management and treatment in establishing a national weight management programme;

- action to increase public and professional awareness and understanding;

- action to tackle inequalities through action at locality level using co-production and assets-based approaches;

- ensuring effort is maintained in both tackling the long term environmental and regulatory actions and action aimed at individual behaviours;

- auditing the range of policies that impact on overweight and obesity with a view to increasing integration, effective implementation and assessment of progress;

- strengthening the national and local infrastructure to address obesity and overweight and clarify accountability;

- reviewing the funding available for direct interventions to address overweight and obesity and that funding is identified to deal with preventive strategies, treatment and health conditions attributable to overweight and obesity;

- formally reviewing the measurements used for overweight and obesity and the way in which existing data can be used more effectively to improve understanding and enable effective monitoring at both local and national levels;

- establishing a comprehensive strategy for research, evaluation, and service development, including, but not exclusively government funded research, to prevent and manage obesity and overweight;

- working across the whole food system on actions that are likely to have direct impact on weight;

- increasing physical activity and reducing sedentary behaviour for all with a focus on the inactive and overweight; and

- encouraging leadership from the NHS, putting a priority on reducing staff overweight and obesity.

b) Recommendation 2

In view of the epidemic nature of the problem, local action should be led by Directors of Public Health and include:

- providing senior leadership to advocate across NHS Boards and Local Authorities, Joint Adult Health and Social Care Boards, and Early Years Collaboratives to develop strong partnerships, for example with town planners and building designers;

- creating and taking the opportunities provided by health and social care integration and Community Planning Partnerships (CPPs) for coordinated action, monitoring and reporting to tackle the epidemic locally; and

- focusing on inequalities by taking a community and place based approach, with an emphasis on the obesogenic environment.

c) Recommendation 3

Key national agencies[*] should increase coordination of action on overweight and obesity including:

- developing and maintaining shared outcome and evaluation frameworks;

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[*] Key agencies would include: Food Standards Scotland, sportscotland, Transport Scotland, NHS Health Scotland, Education Scotland, NHS Healthcare Improvement Scotland, NHS Education Scotland, COSLA and voluntary sector organisations (e.g. Diabetes UK, British Heart Foundation, Scottish Cancer Prevention Network0 and Obesity Action Scotland and others with an interest in reducing overweight and obesity).

- improving data though linkage, trend analysis and filling current gaps using appropriate outcome measures for excess body fat accumulation and its health consequences;

- increasing public and professional awareness; and

- improving practice through networks and major national events.

3   Introduction

3.1   Purpose

The Obesity Route Map (ORM), *Preventing Overweight and Obesity in Scotland: A Route Map Towards Healthy Weight*(3), was launched in 2010 and its accompanying Action Plan a year later.(4) It stated:

"*Scotland has one of the highest levels of obesity in OECD countries with over a million adults and over 150,000 children obese. This is predicted to worsen with adult obesity levels reaching over 40% by 2030. Overweight and obesity brings with it a risk of disease and a cost to society that will directly impact on our ability to achieve sustainable economic growth. This situation is avoidable.*"

The ORM is now 5 years old. This report aims to take stock of the ORM with the intention to assess its effectiveness and make recommendations concerning what changes or further action should be taken in the light of the current trends, the prevalence of overweight and obesity, and any major developments in evidence. This review is not intended to be exhaustive, but should enable a judgement to be formed of whether the ORM should continue as it is, whether it needs updating, or whether a major revision, or indeed a new strategy, is required.

3.2   Background to the ORM

Whilst a number of Scottish policies could be expected to impact on overweight and obesity (see section 6) there was no specific Scottish strategy on obesity until *Healthy Eating Active Living (2008)*(5)*,* which aimed to pull together action on physical activity and healthy eating. Scottish clinical guidance is available in SIGN 115.(6) The ORM followed on from *Healthy Eating Active Living* and was developed following prioritisation workshops(7) and expert consultation. Focused on prevention, the ORM recognises the issues of balance between energy consumed and energy expended and the importance of early years and the workplace in tackling obesity. These 4 'pillars' are dealt with separately and the proposed actions range from individual level action to societal actions. In addition the ORM recognised the need for strategic leadership, raising awareness, professional education and further research. Whilst clearly focusing on prevention, it mentions the need for treatment of overweight and obesity. Along with several generic recommendations for action in the ORM, the Action Plan laid out 60 specific actions. Leadership was provided by the Joint Obesity Group (JOG) under the leadership of the then Cabinet Secretary for Health and Well-being. A soft review of the ORM was originally envisaged by Scottish Government (SG) for 2013-14.

The issue of overweight and obesity has become a significant concern to the Scottish Directors of Public Health (SDsPH), leading to the establishment of a special interest group, the Scottish Public Health Obesity Special Interest Group

(SPHOSIG), in 2013. In 2014 the Scottish Government requested the SPHOSIG oversee a review of the findings from the evaluation of the Health, Efficiency, Access, Treatment (HEAT) target on child healthy weight(8) and subsequently this review of the ORM. Overseen by the SPHOSIG, the Scottish Public Health Network (ScotPHN) has undertaken both reviews on behalf of the SDsPH. Methodology for this review can be found in appendix 1.

3.3 Why do overweight and obesity matter?

Obesity is a major risk factor for a range of diseases and many long term conditions. These can broadly be divided into physical consequences (e.g. arthritis, back pain, sleep disorders, fatigue, dyspepsia), metabolic consequences (e.g. type II diabetes, hypertension, dyslipidaemia, and form of cardiovascular disease) and mental/social consequences (mostly around unhappiness or depression) and certain cancers (including breast and colorectal). These clinical consequences start at different ages, with different levels of excess body fat, for different people. Of people with type II diabetes almost 90% have a BMI of over 25, about 50% have a BMI of over 30 and those who have a lower BMI, have excess fat in vital organs such as the liver, heart and pancreas whose functions are damaged.(1) It is estimated that 1 in 20 cancers are linked to overweight and obesity.(9)

The current burden of obesity and overweight to NHS Scotland is estimated to be £363 million a year. Taking into account loss of productivity attributable to loss of life or impaired life quality, the direct health care costs, and the additional needed to investment to mitigate the impact of obesity, it has been estimated that the total economic cost of obesity to Scotland ranges from £0.9 billion to £4.6 billion a year. (10)

4   What is obesity and how much do we understand?

4.1   Definition and measurement of obesity

Overweight and obesity is defined by the WHO as *"abnormal or excessive fat accumulation that presents a risk to health".*(11) Body fat is difficult to measure as the 'gold-standard' methods are use of magnetic resonance imaging (MRI) or underwater weighing. So 'proxy' methods, calibrated against these gold-standards, are used for surveys and in clinical work:

(1) the best approximation to body fat is estimation of body fat with published equations, using simple anthropometric measurements (height, weight, waist circumference); or

(2) waist measurement alone gives reasonable ranking of total body fat. It is a better proxy for excess body fat or the consequences of metabolic disease in some groups (e.g. the less severely obese or younger people). This is because it measures fat at a specific part of the body in which it is stored as so can measure central fat distribution as well as by total body fat. As such, it is a proxy of risk associated with obesity; or

(3) the Body Mass Index (BMI – weight kg/height m^2), which is better than weight alone, but rather less good than waist or estimated body fat.(12)

Measuring weight in children is also complex in that it needs to take into account the normal development of the child.

Currently population risk of overweight and obesity are most commonly measured by BMI and epidemiological cut offs for BMI are used. Different cut offs are used in clinical practice.(12)

4.2   Understanding of obesity

The cornerstone of our understanding and current policy is the Foresight report, *Tackling Obesity,* published in 2007.(13) The report drew on extensive reviews of the evidence and economic modelling to produce a comprehensive model of the factors influencing overweight and obesity and the likely impact on individuals and society if no action was taken. It elucidated the domains of influencing factors as those which acted on individual behaviour (physiology, psychology and eating and activity behaviours) and those which acted at population level (social psychology, planned environments and food industry, regulation and legislation) and emphasised the existence of an 'obesogenic environment' in which humans will tend to gain weight and become obese. The report recommended action at all levels across the life course, with an emphasis on structural changes that would affect a greater proportion of the population.

A rapid review of literature reviews carried out for this report (see appendix 2) concludes that the findings and recommendations of the Foresight report remain valid. On the whole the evidence base has been strengthened, in particular in

relation to sweetened drinks and sedentary behaviour, where the latter is recognised as an independent risk factor for a range of health conditions. The role of 'free sugars' has recently been highlighted with the recommendations by WHO and the UK Scientific Advisory Committee on Nutrition (SACN)(14),(15) that the goal for consumption should be reduced from 10% of daily energy intake from free sugars to 5%. The need to place greater emphasis on several areas was identified: tackling the obesogenic environment at all levels, improving perceptions of the problem; support in the community (particularly in less affluent areas), around schools, in the workplace and in policies and regulation affecting the consumption of energy dense food and encouraging a more active lifestyle.

5   Current trends overweight and obesity in Scotland

The prevalence of people who are overweight or obese in Scotland is unacceptably high with over 54% of the adult population overweight or obese (27% overweight, 27% obese).(16) In comparison with other Organisation for Economic Co-operation and Development (OECD) member states, Scotland ranks 5th highest for overweight (including obesity) and 6th highest for obesity alone (10). At school entry just under 23% of children are overweight or obese.(17) Prevalence increases with age up to age 75.(18) On the surface, trends appear to be levelling off if BMI is assessed(16); however, the underlying trend in body fat accumulation with age is still upwards. More extreme obesity is linked to socio-economic inequalities, particularly for women and children.(18),(19)

5.1   Obesity Route Map Indicators

16 indicators for the ORM action plan were identified in 2011. The indicators were updated in 2014.(20) A number of indicators were set for both individual behaviours and motivation for change at population level in the short and medium term. These show limited change:

- a significant decrease in sales and consumption of soft drinks with added sugar. However, levels of added sugar consumption, although they have fallen still remain too high;
- a possible decrease in screen time in children;
- no change in levels of physical activity (although some indication that the levels are increasing in girls); and
- the level of consumption of fats and sales of confectionery, biscuits cakes and pastries remain static.

The key health indicator set is the prevalence of type II Diabetes. The prevalence is known to be increasing rapidly in Scotland and developing at earlier ages(1); even accepting that this may be an underestimate because of the rate of undiagnosed type II in the population.

5.2   Key data not included in the ORM indicators

No indicators were set for overweight and obesity for mothers during pregnancy or in a child's early years. However information is recorded through maternity records and the Child Health Surveillance Programme (CHSP).(21)

Overweight and obesity in pregnancy increase risk of medical intervention in labour and of poorer outcomes for both mother and baby. Data of women reported at the national level shows approximately 24% overweight and 18% obese at the time of the first "booking" appointment.(22) This may be associated with socio-economic status(22); however there are significant gaps in the data and ISD are at the early stages of looking at trends.(23) Trends in breastfeeding were last reported in

Scotland in 2015; these have remained static for some years. (24) The UK-wide Infant Nutrition Survey has recently shown a slight decrease in exclusive breastfeeding by more affluent women.(25)

The recent re-introduction of the 27-30 month review as part of routine child health surveillance, mean that height and weight data are again collected for this age group. At school entry the trend is showing a slight decrease in obesity, however when this is analysed by socio-economic status it is clear that the decrease is occurring in the more affluent children, whilst there is a clearly increasing trend in the least affluent.(19)

Recent comparison with data from other developed countries indicates that overweight and obesity are also linked to poor growth and lower stature indicating that not only are their nutrition and activity levels affecting weight but also growth overall.(26) The most reliable predictor of overweight in childhood is parental overweight and recent evidence indicates intergenerational effects.(27)

Progress towards the Scottish Dietary Goals (revised in 2013 they underpin diet and health policy in Scotland and are used for scientific monitoring purposes) is monitored by Food Standards Scotland using a combination of surveys, principally from secondary analysis of the Living Costs and Food Survey (LCF), with the most recent data available from 2001 to 2012.(28) Overall, there were small but significant decreases in the percentage of food energy from saturated fat and added sugars between 2001 and 2012, but intakes of saturated fat, total fat and added sugars remained too high. People living in the most deprived areas continued to consume the least fruit and vegetables, oil rich fish and fibre and the most added sugars. Conversely saturated fat intakes were highest in the most affluent. The results show the very slow rate of progress towards a diet that will improve and support the health of the Scottish population.

5.3   Strengths and weaknesses of current data

The Scottish Health Survey (SHeS) is a longstanding rolling survey, based on a sample of the population. Given how the data is collected, it can take several years' worth of data to be collected before an understanding of a particular topic can be gained. Some of the data in the SHeS is based on self-report. It is known that respondents overestimate the amount of physical activity they undertake; however, the level of over-estimation is consistent, so trends over time should be less affected. The SHeS only reports on children and young people in one broad 2-15 year category. The most recent SHeS uses BMI, waist circumference and the two together.(18) As noted above, there is considerable debate about the value of BMI in estimating population risk. It can be very misleading because it cannot distinguish between variations in body fat and in muscle mass, which have opposing implications on health. The use of BMI is particularly complex in childhood and

Royal College of Paediatrics and Child Health (RCPCH) gives guidance on its use. (29)

Early years' data that are relevant to overweight and obesity are held in both maternal and child surveillance programmes as well as nutrition surveys, but may only be linked in occasional reports or research studies. The Child Health Surveillance Programme is comprehensive and has covered all Scottish children since 2005. However, our data on young people is lacking. There is no routine data collected for children and young people after school entry. Data at age 11 were previously recorded and the collection of this data was dropped following a review of the Child Health Surveillance programme in 2005.

Inequalities information is only sometimes reflected in published reports although for many data sets it can be extracted. This is a significant issue, particularly in situations where the different trends in socio-economic groups can, as here, lead to an overall impression that the situation is improving, when in fact there are major underlying trends which should be a matter of concern and attention.(19)

Only some data is published with trends and none with extrapolations of likely future trends although there may be occasional publication of trend data such as the epidemiological briefing published by ScotPHO.(12)

6   Scottish Policy and Overweight and Obesity

A comprehensive list of Scottish policies with details and weblinks can be found in appendix 3.

On the face of it the policy landscape in Scotland is strong, with national policies and action plans covering many areas that are likely to contribute to preventing overweight and obesity. As well as the ORM itself a number of key policies have noted a possible impact on overweight and obesity as a formal outcome. Examples are:
- *Let's Make Scotland More Active*(30)*;*
- *Maternal and Infant Nutrition Framework*(31)*;*
- *Child Healthy Weight*(19)*;* and
- *Recipe for success; the national food and drink policy*(32)*;*

Additionally, a number of policies in areas where there is clear evidence for potential impact do not have an explicit reference to obesity. Examples would be the current *National Planning Framework 3*; the *Youth Sports Strategy*; the *Play Strategy*, the *Active and Healthy Ageing Action plan* and *Let's Get Scotland Walking.*

Not all polices refer to other related policies, or recognise that they have a shared action that could lead to their separate outcomes. The broad range of policies that can impact on overweight and obesity mean that many different government departments and ministries are involved. It is possible that an action with low priority in one policy may have a greater priority in another. One exception is that there is a great deal of consistency between the ORM section on Early Years and the Maternal and Infant Nutrition Framework. This recognition of overlap and shared outcomes means that language and actions are also shared and more likely to be recognised by those responsible for implementation.

The ways in which progress on policies is monitored and evaluated vary considerably. Only a small number of policies have published evaluation reports or a dedicated evaluation strategy. There is an extent to which this is appropriate due to the nature of the work proposed or its priority locally and nationally. In the case of physical activity, the active strand of the Commonwealth Games legacy evaluation is an exemplar evaluation strategy, whilst making the most of data that are routinely gathered, it also seeks to fill the gaps to ensure a full picture is obtained, and importantly sets time scales for reports.

7   Summary of current progress on Obesity Route Map commitments

The majority of commitments in the ORM were articulated as discrete actions in the ORM Action Plan. The Action Plan focused on 4 'pillars': energy in, energy out, early years and workplace. Detailed information on activity received as part of this review can be found in appendix 4; however, a brief review of each pillar is undertaken here.   There were generic commitments in the ORM which did not translate into numbered action points in the Action Plan. Progress on these commitments is also noted here.

7.1   Summary of progress: Energy In (Food - Pillar 1)

There are 18 Action Points (AP) in this area, most of which are in progress. Some have reached short term milestones, such as introducing the EU food information for consumers' legislation, providing industry with consistent guidance for 'front of pack' labelling and EU legislation on nutrition and health claims. There are several where the direction has changed or been overtaken by events. One has not progressed and another was deemed inappropriate for transfer between sectors. Over and above routine national monitoring, monitoring is in place for AP3 and evaluation has been carried out for AP2 with evaluation of a third in progress. Costs have been provided for 3 of the APs.

Many APs which have progressed include those which were already underway or at an advanced stage of planning at the time of the Action Plan launch. This applies particularly to the work of Community Food and Health Scotland (CFHS) and the Healthy Living Programme (HLP). Whilst the CFHS work aims to support community development through food, the HLP largely depends on organisations and retailers opting in and their staff and customers then purchasing healthy options. It could be said that, with the exception of schools based actions, the work that has gone furthest is that which was the easiest to tackle or relies on individuals to opt in. Work with the food industry, which could have more far reaching impact, requires more sustained effort to achieve the desired outcomes.

Recognition should be given to industry for its contribution to the ORM targets, which is backed by monitoring evidence on the reduction in the consumption of added sugar drinks and saturated fat in savory snacks; work to review and tighten salt targets to 2017; and introducing consistent 'front of pack' labelling. However, work with industry has been slow. A voluntary framework for working with the food and drink industry 'Supporting Healthy Choices' (SHC) (33) was developed from late 2012 and launched in June 2014 after the Food Industry Group (FIG) failed to produce agreed commitments from industry to work towards a healthier food and drink environment. The framework covers children's health, rebalancing promotions, supporting consumers and communities and reformulation (including the HLP above) whist putting an emphasis on the public sector being an exemplar for food and drink provision.

A number of APs, now contained within SHC, such as the Healthy Living Award and the Healthy Living Programme, have developed through the provision of guidance (e.g. food and drink promotions) and the *Beyond the School Gate* initiative.(34) There is an intention to establish baseline data and track development. Progress in schools has been substantial and continues but is focused on monitoring uptake and participation rather than impact.

A Scottish Government consultation on *Becoming a Good Food Nation* (35) to update *Recipe for Success* was concluded in 2015.(32) Actions arising in response so far include the setting up of a food commission and the potential for local food champions. This has the potential to further impact on the food related actions in the ORM.

7.2 Summary of progress: Energy Out (Physical Activity - Pillar 2)

There are 23 APs, of which 14 have reached short term milestones with progress on all but 2 APs. In total, 9 APs have monitoring in place and a major evaluation is underway for the Commonwealth Games active legacy programme. Information on costs has been provided for 3 projects.

There is good collaboration on Active Travel and planning and design, aspects which have the potential for population-wide effect. However, as yet, the national travel surveys report little change. The launch of the National Planning Framework 3 (NPF3) (36) has provided impetus, but it is not always clear how the implementation will be evaluated. Activity in schools through the curriculum is now well established and monitoring is in place, however the impact on overweight and obese children or those at risk is not known. Work within the curriculum affects all children and the uptake of *Active Schools* activities is impressive however only one local authority responded on how it was reaching inactive children. Similar to action on food, it is the school setting where action is best embedded, but it should be noted that this work was underway in advance of the ORM and has been monitored in terms of uptake and participation rather than impact. The *Cashback Initiative* is one of the few APs in the ORM to address inequalities. With the exception of schools-based APs, most of this broad agenda is at an early stage. Increasing levels of physical activity and sport participation have clearly been given significant impetus by the Commonwealth Games.

7.3 Summary of progress: Early Years (Pillar 3)

There are 12 APs. Action has taken place on all 12. The publication of the *Maternal and Infant Nutrition Framework*(31) and the *Getting it Right for Every Child (GIRFEC)* (37) guide and pledge are complete. The HEAT target on breastfeeding did not continue and the rate remains static. The territorial NHS Boards provide annual reports to the Scottish Government on infant feeding in line with the *Maternal and*

Infant Nutrition Framework and progress has been made against these milestones. Resource information has only been provided on breastfeeding.

The national data indicates a lack of effectiveness in improving infant feeding, with the strong possibility of an increasing inequalities gap and increasing prevalence of overweight and obesity both in pregnant women and the early years of life. Maternal overweight in pregnancy is an indicator of later overweight in the child and this should be an area of concern. There have been professional leads on maternal and infant nutrition or breastfeeding intermittently over recent years and the appointment of the professional lead on the UNICEF *Baby Friendly Initiative* to work in Scottish Government is to be welcomed.(38) Active play has received impetus from the national *Play Strategy* and reports indicate progress, but difficulty in reaching those in areas of deprivation.

7.4   Summary of progress: Workplace (Pillar 4)

There are 10 APs, of which 4 have reached early stage milestones. There is one where initial work has not continued and another where action was proposed but not taken up. Monitoring is in place for 5 APs and a progress report available on one. No cost information has been made available. Significant activity has taken place within the NHS as an employer, even though reports note that more remains to be done (39). Whilst the ORM has gone some way to raising awareness generally, the lack of prioritisation of issues relating to overweight and obesity in workplaces outside the NHS remains disappointing and may relate to a continued general lack of awareness of the problem. Programmes may also be limited by cost considerations as they often cease after initial external funding. An exception is the apparent willingness to engage in physical activity programmes (walking, cycling or other activities).

7.5   Summary of progress: Generic (unnumbered) actions

The ORM outlined a number of actions which did not transfer into the Action Plan as numbered APs. These include the management and treatment of obesity, changing public attitudes, professional education, supporting local delivery, tracking progress and filling evidence gaps. A joint national leadership group across Scottish Government directorates was to be established and an event to help shape the action plan was to be held. These areas were:

7.5.1   Weight management and treatment

These actions were explicitly not part of the ORM, and are reported separately to Scottish Government.

7.5.2   Awareness and professional education

Mass media campaigns have been carried out on physical activity, as part of the broader *Take Life On* campaign(40,41), and on food.   Training programmes on

physical activity and on raising the issue of healthy weight have been developed and run for health professionals.

7.5.3 Local support

The healthy weight outcomes framework was completed in 2011.(42) It was used to identify the ORM indicators however the original intention that the healthy weight outcomes framework could be used to identify gaps in monitoring, evaluation and research and enable performance management did not come to fruition because the JOG did not continue to meet. The Child Healthy Weight Expert Group report (8) revealed very varied local infrastructure; additional review work was undertaken for all age groups and is reported in section 9.2.

7.5.4 Research strategy

The proposed integrated research strategy did not progress. The view was taken that a number of existing research strategies relating to the route map pillars were already in place. The research mapping exercise undertaken for this review is considered further in section 9.1.

7.5.5 National leadership and accountability

It was intended that the JOG would draw together the broad range of interests required to take forward the APs. The Scottish Government Public Health Division was to lead this process, obtaining information from colleagues across government responsible for the policy areas relevant to the APs. The Action Plan was to be updated with progress on a 6 monthly basis in advance of the JOG meetings. The group met 3 times and 2 updates to the Action Plan took place (in 2011and 2012) (20). The aims of the JOG to ensure ministerial level discussion across portfolios remains relevant, however, the mechanism was not successful. This may be as a result of changing ministerial roles and priorities, or because the format of the group reviewed action rather than drove it. Other leadership mechanisms are in place for some of the component areas of the ORM; however, without co-ordination they may not compensate for the JOG. These include:

- The National Strategy Group for Sport and Physical Activity;
- A Food Commission to advise government as the updated National Food and Drink policy has been developed;
- The Scottish Centre for Healthy Working Lives, which provides the infrastructure and monitoring for health at work in Scotland; and
- A national Health Promoting Health Service (HPHS) steering group, which has been set up under the chairmanship of a public health minister to provide oversight of a number of areas including physical activity and the attainment of the HLA by NHS catering services.

The National Performance Framework (NPF)(43) is the mechanism for overall accountability for action across all policy areas. There have been separate accountability mechanisms for individual aspects of the ORM. These include the Implementation Group for *Maternal and Infant Nutrition Framework* (launched in 2011), and *The Early Years Framework* which established a set of indicators for broader early years work. The clearest accountability mechanisms have been where there are national targets e.g. a Single Outcome Agreement (SOA) for community safety and a HEAT target for Child Healthy Weight. A basic set of indicators for adult healthy weight reporting were also developed.

A £3.5million "*Challenging Obesity*" budget was established, which includes the allocation of £2million funding per year to territorial NHS Boards for child healthy weight interventions following the ending of the HEAT target. It also included £1.5million funding per year (2012-15) for healthy weight management, previously contracted to Robert Gordon University (RGU) for the delivery of Counterweight, and central funding for the programme of Healthy Weight Communities. However, now individual NHS Boards will decide how to support healthy weight management. While the majority have continued with Counterweight a number are exploring other options.

7.5.6 Prioritisation event and updated exercise

At the time of the launch of the ORM the Scottish Public Health Network (ScotPHN) undertook a series of consultation events to prioritise ORM actions and their potential impact on reducing overweight and obesity. The findings were reported in 2010.(7) The exercise was repeated with the SPHOSIG and members of the Child Healthy Weight Expert Group. The session aimed to assess if priorities had shifted and whether emerging priorities could be identified. In broad terms the exercise re-affirmed the likely impact of the areas covered within Supporting Healthy Choices (33) and the importance of walking and cycling. The need for current programmes such as the Health Promoting Health Service and the Healthy Working Lives Award to embed actions on overweight and obesity were seen as having high impact. Public sector exemplars, active travel and addressing health in planning were seen as having medium impact

Areas within the ORM highlighted for strengthening were:
* focus on community development and community cohesion;
* effective social marketing and simple messaging (e.g. waistline measurement); and
* research to focus on the language used in public discourse and risk of stigma.

The last point on use of language became a discussion point as common understanding between participants was lacking.

7.6   Summary of progress: What was left out of the ORM

ORM APs that were seen as low impact tended to focus on initiatives that very much depended on action by individuals, and on actions which whilst they had value in raising public awareness, were unlikely to impact on overweight and obesity in the short or medium term. Actions such as opening up public sector estate and encouraging parents to make up healthy lunch boxes came into this category.

The original prioritisation exercise which underpinned the ORM placed a strong emphasis on integrated action across sectors at all levels. Whilst this was included in the ORM, there are no specific actions in the Action Plan or a mechanism for doing so put in place.

In looking back at the 2010 prioritisation exercise, there were a few items had not been included in the ORM originally, but which came up again as requiring attention:
- a focus on health inequalities;
- setting a (realistic) time scale; and
- alcohol as a factor in overweight and obesity.

In undertaking this review, a number of areas were highlighted for inclusion in a revised / update ORM. These were to include:
- approaches to risk management and treatment;
- a renewed focus on weight management programmes;
- a focus on areas of co-morbidity with overweight and obesity such as type II diabetes and cancers; and
- a clear statement on the necessary balance between food intake and physical activity in intervention, and not just each of these in isolation from each other;
- taking a full life course approach, not just focusing on early years and adults at work.

Details of the 2010 prioritisation exercise can be found at ScotPHN.

8 How comprehensive was the Action Plan?

When compared to the WHO policies(44) and recommended actions in recent reports such as those from the McKinsey Institute(45), the Academy of the Royal Colleges of Medicine (AORCM)(46) and the Royal College of Physicians of Ireland (RCPI)(47), the ORM fares well in terms of its breadth and in specific content. In general the ORM represents a reasonable attempt to implement the Foresight Report recommendations.(13)

8.1 The Action Points: did they form an appropriate mix and balance of actions?

The ANGELO (the **AN**alysis **G**rid for **E**lements **L**inked to **O**besity) framework(48) is a tool that enables analysis and prioritisation of interventions designed to impact on overweight and obesity and on the obesogenic environment. An assessment of the action points in the ORM against this framework indicates that the actions in the ORM are strong on the micro, more individual actions relating to availability (of interventions and healthy options) and in some of the 'macro' areas such as policy and regulation for schools(49). However there are fewer actions in the macro and micro economic and cultural domains. As it is these domains that are likely to have population effect, it will be important to address this imbalance in any future policy and action plans.

8.2 The Action Points: strengths, weaknesses and gaps

The ORM includes a broad range of actions and is comparable with the approaches taken in other countries. The most successful actions in terms of progress towards milestones were those that were already underway or in development when the Action Plan was launched. These tend to be those which focus on individual behaviour and 'opt in'. Conversely those which have not progressed were those that had not been scoped and had no milestones identified at the time of launch.

8.2.1 Strengths

Areas that are strong in Scotland include the policy framework, which covers all areas of action that can impact on overweight and obesity, however, the degree of coordination, evaluation and performance monitoring is variable, as is leadership. Leadership has been strongest where there are significant national drivers such as the child healthy weight HEAT target and Single Outcome Agreements (SOA) on community safety.

Significant action has taken place in schools, notably the regulatory environment for physical education and nutritional standards. There are also major initiatives such as Active Schools and Community Sports Hubs based on school premises. However, the reach of these activities to those who would benefit most is not clear and can be undermined, (e.g. by fast food outlets around secondary schools).

The NHS has also undertaken a range of actions for patients and staff through the Child Healthy Weight HEAT target, procurement, estates management and the HPHS programmes. However, local intelligence suggests that much remains to be done.

With regards to weight management and treatment a reasonable start has been made, boosted significantly, by the HEAT target and dedicated funding for child and adult weight management, although the programmes vary in type, personnel and target groups across Scotland.

8.2.2 Weaknesses

Without central drive from the JOG, monitoring and evaluation has been left to the lead agencies, many of whom have mechanisms for tracking activity and assessing its reach and impact. However, the amount and quality of both monitoring and evaluation is variable. That there are only a few completed actions and limited evaluation means that it is not possible at this point in time to say which actions merit scaling up. However, actions can be clustered by the different degrees of progress against milestones and some key issues identified.

The Action Plan lists key stakeholders but the extent to which these stakeholders have been assigned specific actions is limited, rather it is their responsibility to identify actions to progress. As the actions were only monitored for a short time, the need to progress from responsible stakeholders to lead agencies or partnerships, with clear actions and accountability built into their respective plans, has not been identified.

System wide and regulatory change that aims to act on the obesogenic environment and achieve population impact has been slower to develop and work has tended to produce guidance rather than action.

It is notable that the strength of support from professionals varies across sectors.

The two major lifestyle issues of diet and physical activity are addressed in the ORM with substantial action proposed, however the potential contribution of other lifestyle issues is not included (e.g. alcohol). The work on diet and physical activity does not always appear to be coordinated for key target groups and tends to operate in separate silos. As a result of this lack of coordination the chances of any one individual or community receiving all the interventions from which they could benefit are low.

Lack of progress, despite action on early years, requires further attention and exploration as does the difficulty in sustaining initiatives in the workplace. This may

reflect wider cultural influences and the need for greater public and professional support for interventions to start and be maintained.

8.2.3 Gaps

The life course approach recommended by the Foresight report (13) is addressed through early years, and for adults through the workplace. This leaves significant gaps in young people and later life.

The inequalities dimension in overweight and obesity shown so starkly in the trends is not addressed by the ORM or the Action Plan, and only in a small number of the reports on the actions themselves. This gap is compounded by the limited focus on the role of communities.

Two areas for action originally envisaged, but not included in the generic actions, on public and professional awareness and an integrated research strategy are significant gaps. These would support and improve other actions.

9 Action, research, reports and policy beyond the ORM – What can we can we learn from elsewhere?

9.1 Current research

There is still a great deal unknown about some mechanisms that contribute to overweight and obesity, such as the role of specific foods, hormones and sleep. However, given the scale of the problem, and the very clear understanding that all underlying mechanisms have led to individual's calorie consumption which exceeds need, existing knowledge is sufficient for effective action. In the absence of an expanded integrated research strategy as originally proposed in the ORM a research mapping exercise was carried out by the Scottish Collaboration for Public Health Research and Policy (SCPHRP). (The full report and appendices can be found on the ScotPHN website.) It aimed for a comprehensive account of recent and current research on obesity in or covering Scotland which would enable an assessment of gaps, potential collaboration and ensure easy access to research information for both researchers and practitioners. The mapping focused on the last 10 years and covered research which looked at and measured weight. 180 studies and 217 publications were assessed. The majority were descriptive or observational and only 47 were intervention studies. Of these the great majority were about weight management. It is significant that most focused on a single lifestyle intervention, whereas the lived experience of individuals and communities is one of multiple interacting factors.

There were very few publications focused on prevention, or on socio-economic deprivation, or on the workplace and the focus was on individual action, rather than regulation or environmental changes. Whilst there is much research on physical activity or diet, it rarely measures weight as an outcome, often assuming that this will happen, this assumption may well be flawed. The mapping exercise also noted that there is also a great deal of local activity which is not linked to formal research or evaluation.

The exercise concluded that there is a buoyant research community with high calibre researchers. However, the lack of collaboration or alignment with policy and practice militates against productive links between research and policy and practice

9.2 Local infrastructure

The Child Healthy Weight report(8) found that the supporting infrastructure for action on child healthy weight is varied across Scotland. A rapid assessment of the situation for healthy weight overall was undertaken with NHS healthy weight leads as part of this review.

All areas have a great deal of activity that could impact on overweight and obesity and several have undertaken detailed mapping exercises. The first NHS Board to have a dedicated strategy for healthy weight is soon to undertake a review, and a

further 4 now have a strategy, action plan or strategic framework. 2 have strategies in development, one has a strategy embedded in a wider public heath strategy and 5 have several strategies or plans that cover the areas relevant to weight. The majority of those who described their overall approach, include areas similar to those within the ORM and may have used it or the healthy weight outcomes framework in developing their own plans.

The degree of coordination across the broad range of actions varies greatly. All areas have some degree of joint oversight of food, physical activity and healthy weight work. This is extended in some to cover maternal and infant nutrition and early years. The area that is most likely to be managed and reported separately is workplace health. 4 NHS Boards have a dedicated lead officer (although this is unlikely to be their only role), several have a lead officer who covers most of the areas of work, however, 6 have a number of lead officers for the different strands of work.

Partnership with other agencies is again different across Scotland. A few areas have an overall partnership group which oversees healthy weight, some as part of broader programmes of health improvement or public health. In other areas, there are separate partnership groups for the different strands and mainly occurs in areas where there are several lead officers. Those with an overall strategy sought to engage with local partners outside the NHS, routinely involving leisure services, education, and children's services. It was notable that only one NHS Board links specifically to community planning and one to transport. No NHS Board indicated it had links to physical planning, urban or rural. Only one Board had included patient representation. Action on health inequalities is not well articulated in local plans and a key gap is the lack of involvement of local communities. Those with the longest running strategies noted that although they started out with a broad partnership, this tended to drop off over time, possibly as a result of the focus on NHS-led services.

Given the differences in the approach to strategies and their management it is unsurprising that the way in which work is reported varies greatly between NHS Boards. Where there is a named lead for what is generally called healthy weight, this officer receives reports on all the relevant actions. Such officers have different levels of seniority and their reporting may go to their Director of Public Health or NHS Board Chief Executive Officer (CEO). Three NHS Board areas have mechanisms for joint reporting to both NHS Board and Local Authority; this is more marked in areas of co-terminosity or where integration is more advanced. In others there are lead officers for specific strands which report through individual directorates within a NHS Board. In 4 areas there is no single reporting stream and others note that overall reporting is unclear. Accountability is largely seen as being through the NHS, apart from the 3 areas that have joint reporting mechanisms.

The area within healthy weight with the clearest management and governance is Child Healthy Weight as a result of there being a HEAT target, where accountability is to the CEO of the NHS Board. A number of NHS Boards noted that the balance of work had been skewed by the HEAT target, to the disadvantage of either broader prevention work or treatment of overweight or both.

9.3 Non-ORM Action in Scotland

The initial stock take of the ORM and the research mapping exercise have serendipitously indicated a significant number of both national and local initiatives which have taken place alongside the ORM actions. Those that have been the subject of research were captured by the research mapping exercise (section 9.1) and the associated report will have captured interventions based in or researched in Scotland. Many projects focus on healthy eating or physical activity separately and may not mention energy consumption or expenditure or have weight maintenance or reduction as an outcome. There is much going on that is not routinely captured at a national level. However, there is clearly considerable commitment to improving healthy eating and increasing physical activity. Some elements of activity may be communicated through professional networks, but not necessarily between networks. The use of improvement methodology where there is already good evidence for action is encouraging. However, the extent of impact on weight or cost effectiveness of interventions is not clear and the implementation of the research strategy originally proposed in the ORM could help in bridging this research and policy and practice gap.

9.4 International policy

WHO Europe declared obesity as an epidemic in 2014(50) which called for action on prevention, risk management and developing evidence as is reflected in the ORM.

WHO International has developed a global action plan for Prevention and Control of Non Communicable Diseases 2013-20(44) which includes reduction of obesity as one of its 9 action areas. Again this Action Plan covers many areas within the ORM (see appendix 4). Alongside reductions in blood glucose levels and the prevalence of diabetes, the global framework sets measures of overweight and obesity in adolescents as a key indicator. It sets targets of a zero increase reinforcing an earlier commitment to a zero increase in children. These apparently modest targets may well be realistic in a situation where no whole country has achieved such stabilisation, let alone a decrease in prevalence. A broad range of countries are adopting similar measures to those in the ORM.

WHO has long adopted a **'health in all policies'** approach and highlighted recent work in a Finnish city(51) which has been successful in reducing prevalence of overweight in children with child healthy weight using this approach. The *Ensemble, Prevenons l'Obesite des Enfants* (Epode) programme has taken a community approach and a Scottish programme based on it showed marginal impact.(52) Other

countries using a health in all policies approach are South Australia and South Africa.(53) In view of the national outcomes approach in Scotland it may be helpful to look at not only the relevance of health in all policies, but also how policies can interact and support each other.

In 2014 WHO international set up a Commission on Ending Childhood Obesity and in 2015 published a nutrient profile model to assist in tackling food advertising to children. (54), (55), (56)

9.5   UK policy

All other home nations have, and are currently reviewing, programmes of action that are broadly similar to Scotland's ORM. The trend across all 4 countries is similar although Scotland has a higher prevalence of overweight and obesity. Recent statistics from Public Health England (PHE)(57) show a similar pattern to Scotland of a strong relationship between childhood weight and socio-economic status, with greater prevalence of obesity in deprived groups, and a wider issue of poor growth overall.

The broad English strategy Healthy Lives Healthy People(58) dates from 2011. In 2014 PHE and NHS England set out their intentions and a programme of action to support early and preventative approaches to tackle the lifestyle risk factors associated with non-communicable diseases, including type II diabetes.(59),(60) Since then, the Health Select Committee has conducted an inquiry into the impact of diet and physical activity on health and more recently an inquiry into childhood obesity.(61),(62) Obesity services in England are commissioned locally, mainly through local authorities and clinical commissioning groups, based on local need and priorities as agreed by Health and Wellbeing Boards. The Government response to the Health Select Committee Inquiry into the impact of diet and physical activity on health provides an overview of the current and planned programmes of work to support national and local action to tackle obesity.(63)

Wales has an obesity pathway from prevention through to treatment and has set a target of no increase in overweight and obesity in children at school entry age. A key initiative in Wales, as yet unevaluated, has a focus on obesity, and is not found elsewhere:
- the Active Travel Act (Wales) (2013)(64)which places duties on central and local government to develop and report on active travel plans.

Northern Ireland's obesity prevention framework, *A Fitter Future for All 2012-2022* (65)*,* was recently reviewed and updated for the period 2015-2019. Key actions include a broad public information campaign, *Choose to Live Better* (2013)(66), and 2 distinct initiatives:
- a public campaign to encourage people to measure their waist circumference and take action; and

- a workplace weight loss challenge scheme raising funds for charity (£ *for* Lb).(67)

In summary, the breadth of action in the ORM is replicated elsewhere. No country has achieved a decrease in prevalence. Some city or community based actions look promising. In taking forward the next steps in Scotland, it will be important to learn from evidence and practice elsewhere and to consider broadening the strategy to include weight management and treatment. Of particular note are the **'health in all polices'** approach and the current WHO working group on childhood obesity.

10 What more is now needed?

It is clear from the previous sections that significant work has been undertaken to address overweight and obesity, in response and in addition to the ORM. However, despite the apparent levelling off of the prevalence of overweight and obesity in some age groups, the underlying trend remains upwards. Recent analysis(68) indicates that obesity may be rising in more affluent men. It may be that without the ORM Action Plan, the situation would have been worse.

The current situation has major implications for individual health, for the burden on the NHS and the wider economy, including some key areas for concern:

- the continuing rise in type II diabetes with onset occurring at increasingly young ages;
- the contribution of overweight and obesity to cardio-vascular disease and some cancers;
- the rise in overweight and obesity in children from Scottish Index of Multiple Deprivation (SIMD) 1 & 2;
- the probable increase in maternal overweight and obesity linked to socio-economic status; and
- the early indications of an intergenerational effect.

The actions in the ORM reflect the research of the time. The review of current research that was undertaken for this report indicates that the ORM remains consistent with current research, albeit with the need to respond to some areas of strengthened evidence. Therefore, how should the ORM now be developed and progressed? Do we need more of the same or should the gaps and least successful actions in the ORM be addressed? What would make existing work more effective?

There have been a number of key reports and guidance published which fell outside the remit or time frame for the literature review for this appraisal and these will be considered in this discussion. These include reports from the Royal College of Physicians (RCP) (69), the Academy of the Royal Colleges of Medicine (AORCM) (46) and the Royal College of Physicians of Ireland (RCPI)(47) and the McKinsey Institute.(45) A recent Lancet series on obesity with a focus on food was published early in 2015(26),(53),(70),(71),(72),(73) and reference is also made to a further two sets of guidance from NICE.(74),(75) In addition, the opportunity was taken to interview members of the SPHOSIG and experts in the field they recommended, to gain some insight into current thinking, as part of this review.

10.1 The evolving nature of the problem

The prevalence and increasing rate of overweight and obesity in the Scottish population, has led the it being commonly described as an 'epidemic', this is in line with the WHO statement on the obesity epidemic in Europe.(50) The response to an epidemic is 3 fold: to work to prevent further development; to manage those at risk;

and to treat those affected. At present coordination of work across prevention, weight management and treatment only exists in Scotland in a small number of areas where there are shared health and well-being aims between NHS Boards and Local Authorities. Further work is required nationally and locally so that effort in all 3 areas can be balanced for effective control.

10.2 Is the current ORM able to deliver change?

In seeking an answer to this question, we must consider the pillars and generic actions in the ORM within the wider framework: lifestyle; life course; sectors and settings; environment, community and inequality; awareness and understanding; infrastructure; and research and development.

10.2.1 Lifestyle

10.2.1.1   Lifestyle: food – energy consumption

Despite robust policy in the *Diet Action Plan* (76) for over 20 years, progress towards the Scottish dietary goals has been minimal and requires greater action. Working with the food system is very challenging. Many of the areas identified for action on food and drink in the research and guidance are addressed within *Supporting Healthy Choices (SHC).* However, considerable effort and investment will be required if this voluntary framework is to have effect or indeed point the way forward towards regulatory controls. Formal review of SHC is essential to enable effective action on areas such as:

- limiting marketing of energy dense foods and drink;(26),(53)
- reducing intake of sweetened drinks;(73),(75)
- tackling large portion sizes of energy dense foods and drinks; (45),(53)
- ensuring that reformulation efforts make a significant contribution to reduced energy intake;(70) calorie information, particularly in out of home settings;(45) and
- nutritional food labelling. Although food labelling appears only to impact on those who already have healthy preferences, or higher levels of education and affluence, the requirement for labelling does appear to impact more widely on the food industry and lead to reformulation.(45),(53),(70)

There is considerable support in the literature for more comprehensive regulation e.g. taxation of and/or removing subsidies on less healthy foods and subsidising healthier ones (see also 10.2.6.5: regulation). The Lancet series identifies 4 actions: the learning of healthy preferences; the removal of barriers to following through on healthy preferences; influencing the 'choice architecture' at point of purchase; and looking at the whole food system.(53) Mapping food systems using a locality approach is seen as a helpful way forward and 2 useful frameworks are identified, the *NOURISHING* framework developed by the World Cancer Research Fund International and the Access to Nutrition framework which rates food manufacturers on their commitments and performance. (77),(78) McKinsey notes the complexity of

working with the food industry. For example, the risk to the first company to make a change and suggests using the marketing expertise of the food industry to promote healthier foods. In summary, significant action is required across the whole food system.

10.2.1.2   Lifestyle: physical activity – energy expenditure

It is positive that the latest SHeS indicates small increases in physical activity. This may be the result of many factors including the recent Commonwealth Games. However, the gain is small, and whilst it may be an initial momentum on which actions can build, the gain in physical activity has not led to sufficient increases among the pre-obese and obese. Walking, which is easy to maintain throughout the life course, is the activity that most people can be encouraged to do alongside domestic and workplace activity. The recent walking strategy *Let's Get Scotland Walking* should be included in future action on obesity. There are many health benefits from greater support for walking, cycling and active travel, but new initiatives are needed, targeted specifically for prevention of weight gain (and regain). These initiatives will require environmental changes in transport and planning, including easy access to community facilities, and open and green space.(79) Given the current level of investment in sport, and that which may be required to get inactive people active, consideration needs to be given to how cultural and behavioural change initiatives are resourced.

10.2.1.3   Lifestyle: other issues

The evidence for television viewing as an independent risk factor for weight gain has been documented.(75) The evidence of impact of sedentary behaviour on its own on metabolic risk is growing but there is little evidence as yet to support this as a risk factor (independent to physical activity) for weight gain. Increasing physical activity remains a key message in achieving energy balance. In addition (but not in place of), efforts should be made to decrease sedentary time.

The Lancet series and RCPI both note the links and interaction between mental health and obesity. The McKinsey report draws attention to the links between overweight and obesity and self-esteem and educational attainment.(26),(45),(47)

The RCPI is of the view that alcohol labelling should include information on calories and the National Institute for Health and Care Excellence (NICE) guidance includes taking action on alcohol consumption.(44),(45),(75)

The importance of sleep in preventing overweight and obesity in children is noted by NICE(75) and is an emerging area of research.

10.2.1.4 Lifestyle: key points

The two key areas of physical activity and diet are ORM 'pillars', however, actions would be more effective through better coordination for communities and individuals.

Interventions that lead to an increase in physical activity are at an early stage. Work across the food system has been slow and challenging to progress. Both require continued investment and consideration of regulation.

There seems to be an underlying assumption within the ORM that tackling diet and physical activity separately will lead to healthier weight across the population. However, as the research mapping exercise suggests, this assumption is flawed. If both are to have an effective role to play in managing weight and preventing overweight and obesity, this must be done in concert with the intent of achieving these outcomes and not presuming they will be a by-product of interventions for general health gain.

Other lifestyle factors which may be associated with the development of overweight and obesity (e.g. social and economic factors) should also be considered in the ORM.

10.2.2 Life course

10.2.2.1 Life course: early years

The prevalence of maternal obesity is critical and there are early indications of an intergenerational effect (27). Maternal obesity it is a better predictor of being overweight or obese in later life, than weight at birth or in infancy. The risks attached to overweight in pregnancy are not generally known and there needs to be a greater public understanding of the importance of antenatal and pre-conception periods. Amongst other benefits to health, breastfeeding appears protective against obesity. (80)

The Lancet series (26),(53),(70),(71),(72),(73) focuses on obesity in childhood and notes the rapid increase worldwide. It also notes that in developed countries, where the rate of increase appears to be levelling, the prevalence is high. It further identifies the need for healthy growth and explores the relationship between obesity and growth retardation of children through poor diet, noting the existence of this in disadvantaged children in England. The series notes the impact of the WHO code on breast milk substitutes and suggests something similar is needed for food in childhood.(26)

The way in which food is marketed is of concern across the reports; the Lancet series prioritises action to prevent marketing unhealthy foods to children. Attention is drawn to the marketing of *High Fat Salt and Sugar* (HFSS) foods to children, in particular of soft drinks, for which there are strong links with weight gain. This

concern is shared by the public (RCPCH).(81) A new profiling tool from WHO is available to enable assessment of marketing activity(55) and the RCPI recommends the use of the Sydney Principles in tackling marketing to children.(47)

The Lancet series further proposes that multiple strategies are needed to establish nutritional security in childhood. Other recommended approaches are to support new parents (including cooking skills); a whole family approach (eating as a family); increasing breast feeding; improving weaning practice; and active play.(26)

Going forwards the ORM should promote links between the maternal health, the Early Years collaborative and the recently set up WHO working group on obesity in childhood and its associated tools.

10.2.2.2   Life course: young people

The lack of a focus on young people is a major gap in the ORM, as the most rapid weight gain, converting people from overweight into obesity, occurs among young people (between ages 15-25).(82) This is has been a hard-to-reach group, but recent evidence in Scotland (77),(83),(84), highlights the potential for working with young people, particularly as they make the transition to adulthood. The Lancet series suggests there is evidence to suggest that taxation and subsidy have most effect on young people, and that youth advocacy is potentially important in leading to community action.(71),(73) Experts saw attitudes and motivation as key *(why bovver?)* noting that overweight and obesity are strongly linked to self-esteem and academic achievement.(45),(47)

10.2.2.3   Life course: adults

The ORM addresses overweight and obesity in adults through workplace activity, thus missing certain population groups e.g. those not in employment. The *Football Fans in Training* project is of note.(85) This Scottish trial has been shown to achieve and maintain significant weight loss in men over a 12 month period. The intervention uses the offer of training with football clubs to their overweight and obese male fans and was successful in increasing activity, improving healthy eating and reducing weight. Appealing to the key interests of the target group may have been critical to its success. The Lancet series also refers to framing overweight to make it pertinent to a target group.(71) The programme could be expanded to fulfill its potential and to other sports where appropriate.

10.2.2.4   Life course: later life

Given the implications of overweight and obesity for a range of health conditions in later life, this gap in the ORM should be addressed. There is a need for design of

housing and public buildings and spaces to consider the needs of older people and how to support activity in later life.

10.2.2.5 Life course: key points:

- The Foresight Report stressed a whole life course perspective. The ORM focused on early years and adults at work. It remains relevant to prioritise early years particularly as the formation of food preferences, eating and activity habits and weight throughout life is heavily influenced in the earliest years of life and by parental weight. However, young people and later life are critical gaps in the ORM.
- Football Fans in Training has shown what can be achieved by framing weight loss in ways relevant to the target group.

10.2.3 Sectors and settings

10.2.3.1 Sectors and settings: the NHS

The NHS has key roles across all of prevention, risk management and treatment. Overweight and obesity are long term, relapsing conditions, with many associated co-morbidities. Although risk management and treatment are out with the scope of this review, if the epidemic is to be addressed then consideration should be given to setting up a national programme of weight management and treatment over and above the current local programmes. Several reports draw comparisons with work on tobacco, in terms of need to build weight management programmes into health services like smoking cessation.(46),(69),(71) Weight management within services where overweight and obesity are significant risk factors such as type II diabetes and pregnancy is a key area for development. The RCP specifically recommends integration of weight management services with diabetic services.(69) The current Diabetes Improvement Plan only recommends that clinicians make onward referral to weight management.(86)

There is scope to improve prevention and referrals to weight management through primary care.(69) Primary care in England can directly refer to commercial weight loss programmes, this is supported by NICE (74). Supported by the Royal College reports(47),(69) better use could be made of routine contacts and the teachable moment to raise the issue and give brief advice, and interventions and refer on. There is a role for other services beside primary care such as screening services as has been demonstrated by the BeWEL and ActWell research projects and family planning.(87),(88) NICE supports the existing guidance for primary care on PA and healthy eating and encouraging the use of self-monitoring.(75) Experts also suggest testing out ways of raising the issue - tape measures for waist circumference, shaded BMI charts to indicate risk, the provision of pedometers to encourage walking and use of self-monitoring.(89)

Obesity prevalence is notable amongst NHS staff. This has an impact on sick-leave and productivity within the NHS, but also sends a message to the public that obesity cannot matter much. However well trained such staff are, their credibility as advisors to patients or the general public on obesity prevention is undermined if they are overweight or obese. Further action to support staff to manage their weight is required. This may be best stimulated through 'bottom-up' local initiatives and any weight management schemes for staff should be in line with NICE guidance CG 43. (90)

The NHS therefore has the potential to lead by example. Areas for action include the development of Health Promoting Health Service to include overweight and obesity alongside the continued work on the selling of healthy food in franchises and reception areas, and encouraging staff initiated action on overweight and obesity such as encouraging weight awareness, using the teachable moment, through procurement, the provision of healthy options, food standards in hospital, and food labelling.

10.2.3.2   Sectors and settings: education sector

Children and young people in Scotland have benefited from a range of major initiatives in schools: the Schools (Health Promotion and Nutrition) (Scotland) Act 2007; the time requirement for PE; the *Active Schools* programme; and Community Sports Hubs. These are in addition to the health and well-being part of the *Curriculum for Excellence*. Formal evaluation of the impact of such initiatives, in addition to current monitoring, is essential to ensure that all who can benefit do so. This is especially so for those in areas of deprivation or otherwise disadvantaged. This is a key strength in Scotland which should be built on, to ensure that the gains are not undermined- for example by the easy availability of energy dense, high fat, salt and sugar food in the area around a school.

Half of the young people in Scotland attend further and higher education and developing work in this sector could reach them at a time when adult lifestyle patterns are developing.

Successive reports (26),(45),(46),(47),(70) are supportive of actions that link education through the curriculum, including the impact of obesity on fertility and pregnancy, with the use of the wider school environment. The Child Healthy Weight (CHW) HEAT target work in schools had a small positive effect(8) which could be amplified by the work on media literacy and the food industry in the curriculum and the use of improvement methodology in schools by pupils themselves.

10.2.3.3   Sectors and settings: workplaces

Initiatives in the workplace have not taken root although they are significant in other countries and a broad range of actions are recommended in the McKinsey report. (45) They may be significant if obesity is indeed increasing in more affluent men. (68) Programmes tackling weight directly have failed to take off, those on physical activity have been welcomed, but not survived short term funding. This may reflect a lack of value within workplaces, which may in turn reflect the wider culture. Workplace challenges such as Paths for All's workplace step count and Ireland's '£ for Lb' do however seem to be popular and growing.

10.2.3.4   Sectors and settings: public sector exemplars

Many of the recommendations for the NHS in the medical college reports could be extended to the wider public sector. The role that the public sector can play as exemplar employers is important, not just for the employees concerned and their families, but for the impact on wider understanding and awareness. Examples would be recognising prevalence of obesity in employees and using opportunities for social marketing and exploring the options available for food and activity, including subsidies

10.2.3.5   Sectors and settings: key points:

- Although the ORM has a number of actions for the NHS and education sectors, only workplaces are addressed as a major 'pillar'.
- The area where action has been most embedded is within schools, this would however benefit from evaluation of impact.
- A broad range of action is taking place within the NHS, however, more remains to be done, and there are aspects which could be expanded across the public sector.
- Action in workplaces has failed to take root.

10.2.4 Environment, communities and inequalities

The Foresight and subsequent reports support the concept of the obesogenic environment as developed by Swinburn (48) in which overweight and obesity will increase to reach a plateau for any given environment. It is further noted that an environment that is less obesogenic is also good for climate change.(73),(74) Whilst maintaining individually based action remains important, the balance of action on prevention needs to wholeheartedly embrace action on the obesogenic environment to make it more 'leptogenic' and have wider population impact. This has been slow to develop and may reflect its difficulty and the investment of time and resources required. In moving forward it will therefore be important to develop and maintain such work recognising its long term nature. The absence of links between public health and planning is striking and as can be seen in *Good Places, Better Health*

(GPBH) and the development of the Place Standard, will be essential if environmental issues are to be addressed.

The Lancet sees the external environment as a key mediator of lifestyle and draws on the limited evidence to suggest that community based interventions for childhood obesity are likely to produce health gain and savings to health services and society.(53) This is further supported by NICE (54) which focuses on the importance of community engagement and the need for the involvement of the public and local business and enterprises using community development approaches.

The complex obesogenic environmental issues may simply take longer to address than individual behaviour related programmes, however this can have an effect which may partly explain the current patterns, as it is those with more resources (education, time, money) who are most likely to respond to behaviour related programmes and so create or increase an inequalities gap in health outcomes. Environmental changes impact on all, but are critical for those with less freedom to act as a result of inequalities. Individual responsibility and behaviour change remains important, however it is critical that any initiatives with this focus are managed to minimise the risk of increasing the inequalities gap.

The links to inequalities have emerged more strongly since the Foresight report and the indications are that they may be increasing, particularly in children. The need for community and social cohesion was identified in the prioritisation exercise. Such city and community (e.g. action in Finland and the Epode study) based approaches suggest that looking at the whole system in defined localities may be productive. The work of GPBH and the subsequent Place Standard are relevant here and the recent emphasis in Scotland on assets based approaches and co-production with communities and individuals offers a way forward in the medium term.

Whilst the 4 'pillars' of food, physical activity, early years and workplace remain important, unless environmental issues and the underlying inequalities are addressed, targeting of programmes to ensure they reach those most likely to be affected would need to be sustained indefinitely.

As in all epidemics it is the poor and vulnerable who most are at risk and suffer most. This gap in the ORM needs to be rectified whilst recognising that overweight and obesity are not alone as health issues in areas of disadvantage and should form part of wider inequalities work such as that recommended in the Report of the Ministerial Task Force on Health Inequalities(91) and the outcome of the Community Empowerment and Renewal Bill.(92) Shifting to a more inequalities focused approach where the lifestyle factors, all life stages and sectors within a locality may enable those most at risk to receive more of the interventions from which they could benefit.

10.2.4.1 Environment, communities and inequalities: key points:

- Inequalities and community action are critical gaps in the ORM, future action on overweight and obesity is likely to benefit from broader inequalities work and community and place based approaches
- Action on the obesogenic environment is also critical but has been slow to develop and will require sustained work

10.2.5 Awareness and understanding

Our concept of what is normal has shifted and the need for cultural change is apparent.(93) The analysis using the ANGELO framework(46) suggests that there are significant gaps in action on the cultural domain. Although some mass media work has taken place it has focused on food or physical activity and not specifically on weight. On its own this mass media work may be ineffective and could increase inequalities, however it is an important ingredient in shifting cultural awareness. (71),(94)

The Lancet series(73) notes the current ineffectiveness of civil society action, partly because consumer power is constrained by the way in which industry shapes food preferences. For policies to be successful they need public engagement in stimulating their development and their implementation. Public health is seen as having an advocacy role and in creating coalitions of a broad range of organisations that have a shared goal. Several reports(46),(69),(71) draw comparisons with work on tobacco, and the value of advocacy groups like ASH, and of international agreements like the Framework Convention on Tobacco Control.(95) The SCOT (Scottish Coalition on Tobacco) is a relevant example here, hosted by ASH Scotland it draws together key third sector organisation and medical royal colleges. The new Obesity Action Scotland based at the Royal College of Physicians and Surgeons of Glasgow may have a role to play here. Greater public engagement and awareness should increase support for change- critical for change in the food industry.

How healthy eating, physical activity and healthy weight are understood is very variable, although recent work on physical activity in Scotland (96),(97) and on waist measurement in Northern Ireland has some useful indications (98). The Lancet series(71) proposes research to understand social norms and attitudes, so that obesity can be framed in a more meaningful way to key groups. The prioritisation exercise raised the question of the language used and general lack of understanding. Prior to any public messaging a stock take of our current knowledge would be helpful. What do different people and groups of people understand by weight, overweight, obesity, eating better, eating for health, free sugars and energy balance? The language used can be too victim blaming, too medical and disease orientated. BMI is a complex concept; in working with individuals and in public communication clarity is needed on the use of BMI, weight, and waist circumference. Much simpler information is needed and RCPI suggest the use of celebrities e.g. sports personalities to increase awareness. (47)

School based education remains essential in provision of basic information. Healthy eating and physical activity are both covered in the Curriculum for Excellence, however it is not clear that the balance between them and their role in overweight and obesity is addressed. Whilst antenatal education is important in addressing healthy weight in pregnancy, this is too late. Such education may be best placed in late adolescence along with the importance of other health behaviours prior to and during pregnancy and there is a role for Education Scotland to explore this.

The need for professional education to enable more staff to raise the issues and refer on comes across strongly and RCP give 10 facts that all health professionals should know.(69) The Lancet series(72) goes further and notes studies have shown health professionals to demonstrate bias with respect to obese patients and be less likely to intervene. This is compounded by obese patients who, expecting stigma, delay seeking help. The evaluation of the CHW programme revealed instances of children referred as overweight but actually being seriously obese.(8) Achieving a common understanding across sectors and professionals (NHS, education catering and hospitality) is something which could be built into training programmes using a common core of skills and knowledge. Sharing of evidence and practice could benefit from exploring the potential for future collaboration of existing networks which are often based around single issues. Major conferences have been shown to be effective in increasing both awareness and accountability.(73) This should be undertaken, for example by planning a series of ministerially led events across the time span of the strategy to report progress and respond to continuing challenges to effective action.

10.2.5.1   Awareness and understanding: key points
- These areas have had limited progress.
- There is a need for greater advocacy of the issues around overweight and obesity. Professional knowledge is vital, not just for work with individuals but for wider public awareness, which is essential if future action is to be supported.
- Schools based education remains important and should be reviewed.

10.2.6 Infrastructure

10.2.6.1   Infrastructure: coordination
The 4 pillars of the ORM remain important however in practice the actions are often delivered in isolation by agencies and sectors responsible for one or the other. The extent to which actions are coordinated in order to achieve impact for individuals, communities or whole populations is variable. It is entirely possible that the extent of the interventions is such that with the exception of schoolchildren, any one person or

community is unlikely to receive all the interventions from which they could benefit. Coordination needs to be improved and, in view of the trends, working with areas of deprivation should be a key focus.

10.2.6.2 Infrastructure: leadership

The ORM identified 'key stakeholders' but does not identify lead bodies or individuals or specific responsibilities for action. A few years on there is a need to raise the question of *how* a range of agencies can progress a number of actions and the support required to enable them do so. The current situation could be described as having a general drift toward the actions and aims in the ORM, but requiring greater strategic focus locally and nationally if it is to be more effective.

The RCP, NICE, Lancet series and McKinsey all stress the need for leadership at local and national levels, particularly for public health in developing advocacy and a "sustained and coordinated infrastructure with resources to build collaborations across diverse sectors".(45),(69),(71), (73),(74) According to NICE such leadership requires support through champions and networks with senior staff acting as local coordinators.(74)

Given the epidemic nature of the problem, the Directors of Public Health have critical role in working across NHS Boards, Community Planning Partnerships and Integrated Joint Boards. In assessing the local systems the leadership and infrastructure for delivery is varied across the country and would benefit from further consideration. There is a great deal local areas could learn from each other in terms of coordination, partnership and accountability.

Regrettably despite clear intentions the national infrastructure did not continue after 2010 and leaves a critical gap. The aim of increasing coordination between Ministries and across Scottish Government departments remains valid, however the mechanism itself may not have been appropriate The large number of government departments and agencies involved is noted by McKinsey and RCP, the latter proposing that there should be a specialist role for obesity and one person in government identified to work across all relevant departments.(45),(69)

10.2.6.3 Infrastructure: accountability

The Lancet series (70),(71) stresses on the need to go beyond existing actions on responsibility and focus on accountability, proposing a 4 step framework and noting that current voluntary agreements do not demonstrate the quality of true partnerships, where there is a clear understanding of who is accountable for what. Examples from Mexico and Brazil are used to illustrate the potential ways in which accountability can be increased through transparent processes, national action plans, high profile conferences and regulatory measures.

Currently national accountability on complex issues can be unclear, due to the range of policies involved and their differing evaluation, monitoring and reporting. Despite initial attempts at establishing broad partnerships locally, accountability remains with the NHS, and within the NHS the different strands of action often report separately, reducing the likelihood of coordination and effectiveness.

Whilst many of the action points have well-articulated milestones and identified stakeholders, they would benefit from a stronger outcome focus, and clearer identification of responsibility to increase accountability and effective reporting.

10.2.6.4   Infrastructure: policy

The policy framework in Scotland is strong, In general, those polices which could be expected to have an impact in a short time frame, do recognise their potential impact on weight however others which may affect underlying factors or upstream determinants of health do not always do so. Non health policies do not always articulate or recognise their health impact whether positive or negative.   The implication of this is that those in the many different government departments responsible for their development and implementation may not see the links, value them or seek to address them. When seeking to progress action on a complex problem like overweight and obesity, this lack of recognition is likely to get in the way of coordination of effort and undermine the need for the partnership action required. Policy development could benefit from early identification of shared outcomes and indicators such that the effect of actions can be maximised, duplication and potential conflicts reduced and a stronger sense of working together on complex issues developed. Although different types of policy will require different reporting the variability is such that assessing effective action on a complex problem like overweight and obesity is difficult. Without consistent reporting it remains likely that there will be:
- inadequate translation of the existing policies into sustainable strategies and effective implementation; and
- a continuation of policies whose outcomes have unintended outcomes that result in continued or increased calorie consumption or continued or increased inactivity.

This review undertook a brief assessment of policy in Scotland. An audit of all current EU, UK, Scottish and local government policies would be valuable in establishing effective implementation and review.

10.2.6.5   Infrastructure: regulation and legislation

Using the ANGELO framework suggests that system wide interventions should receive greater emphasis and that there are significant gaps in action on the

economic domain. The Lancet (53) notes the inadequacy of industry regulation: "a major concern with industry regulation is the failure of these efforts to be sufficiently comprehensive in scope, rigorous in the nutritional criteria, or adequate in their enforcement and sanctions". The introduction of a sugar tax is well supported by the Royal College and McKinsey reports(45),(46) with RCPI suggesting that this is best balanced with subsidy of healthy food.(47) An overview of taxation of key foods has recently been taken by WHO(56), which indicates that whilst there have yet to be conclusive evaluations, the indicators for such changes are good in several countries. New York City is cited as having the most comprehensive regulatory approach.(53),(70),(73)

In addition to action that can be undertaken in Scotland, UK and EU policy impact on overweight and obesity in Scotland and continued joint work is required to influence their future development.

10.2.6.6   Infrastructure: funding

The current and future burden of disease that results from this epidemic is significant, to the individuals concerned and their families, but also in the costs to society in health care and lost productivity. In comparison to the cost of treatment of obesity related conditions to the NHS the current dedicated funding is small and often short term. Budgetary responsibility is a key impetus for focused action, along with central drivers. As a number of both ORM actions that have not progressed and new actions are likely to require additional funding (for example an integrated research strategy or implementation of the Place Standard). Review is also needed of the significant funding that is currently attached to areas such as diabetes and sport and the contribution made to prevention and weight management.

10.2.6.7   Infrastructure: key points

- Overweight and obesity are complex problems influenced by many factors. In this situation effectiveness of action will be undermined without strong leadership to drive action through accountability (including financial accountability) and coordination of effort to reach those who stand to benefit.
- Whilst the policy environment is strong, lack of shared development and indicators mitigate against effective action on complex problems. An audit of policy and its associated funding would be beneficial. There is considerable support for regulation.

10.2.7 Knowledge for action

10.2.7.1   Knowledge for action: research

Whilst our understanding of the natural history of obesity through the life course and the role of specific nutrients, hormones and sleep is limited, waiting for greater understanding is not an option, given the current prevalence of overweight and obesity. The research mapping exercise revealed a vibrant research community, but with little research on prevention, environment, regulation or key target groups and inequalities. There is very little on cost effectiveness, limited research that has a focus on weight as an outcome or indeed the long term impact on obesity related conditions. Research in Scotland would therefore benefit from the more strategic approach intended in the ORM. Critically this could encourage research collaboration on environmental interventions which can reach large segments of the population as well as lifestyle ones. 'Realistic research' which closes the gap between evidence gathering and practice is particularly needed to enable the swifter translation of evidence into practice and scaling up of effective action. A greater emphasis on key groups such pregnant women and the most economically disadvantaged communities is essential. Such a research strategy is necessary to move forwards from the current situation in which we have limited evidence for effective prevention and are unable to recommend what should be scaled up.

10.2.7.2   Knowledge for action: development

The slow development of new work indicates the need for greater support. It could be suggested that barring major unexpected changes, work that is in progress can be expected to continue, but that which is newly proposed needs a supporting infrastructure to engage the stakeholders, identify lead agencies and partnerships and ensure actions are developed and built into future plans. Identifying barriers to progress at an early stage could minimise wasted effort and links to existing initiatives, for example the early years and maternity collaboratives with their use of improvement methodology should be made.

10.2.7.3   Knowledge for action: monitoring

Are we measuring the right things? BMI on its own has been tracked, not just in Scotland, but in many other countries and therefore is likely to retain value as a comparator over time. However the limitations in its inability to distinguish variation in fat and in muscle mass means that at population level it can be misleading in assessing prevalence of risk and also in communication with the public. A review of the use of measurements and their fitness for purpose including communication would be useful.

A considerable amount of relevant data is collected and reported in Scotland, however its use could be improved, by filling gaps, linking data sets and illustrating trends. For instance the ScotPHO epidemiological briefing on obesity could be regularly updated and local information could be made available to support local action. There is a gap in data on young people and children after school entry.

The measurement of height and weight at P7/SI could be re-introduced and the sampling for the SHeS reviewed to enable a greater breakdown of prevalence and trends in children and young people. Data on inequalities is more often collected than reported, given the trends in overweight and obesity this should be addressed.

10.2.7.4 Knowledge for action: evaluation

The variety of approaches used to report the broad range of work on complex problems like obesity make evaluation difficult. A shared framework, linked to the National Performance Framework(43) and its indicators has the potential to support cross sector collaboration and effective use of resources. The current healthy weight outcomes framework(42) would benefit from regular updates and negotiation across the sectors to encourage coordinated action. The strength of current evaluations such as that for the Active legacy for the Commonwealth Games should be built on.

10.2.7.5 Knowledge for action: key points
- The strong, but disparate research community would benefit from an integrated strategy with a clear focus on research into practice and policy.
- New initiatives aimed at complex problems like overweight and obesity would benefit from support, especially at the outset.
- The National Performance Framework and the Healthy Weight Outcomes framework are key strengths to build on to ensure effective monitoring and evaluation of action on overweight and obesity.

10.3 What more is now needed: summary

The actions in the ORM which have been most successful in achieving their milestones have tended to have 2 key characteristics:
- they were already in place or under development: and
- they were focused on individual behaviours and opting in.

Those that have failed or taken longer to progress have been those which were either new ideas or were looking at structural or environmental issues. This raises the question of whether such structural changes inevitably take longer, or whether it is easier to take forward the 'opt in' interventions and effort is put into these at the expense of the harder, but possibly more wide reaching actions.

Where to focus? There is an extent to which it all matters. For example, providing healthy choices is unlikely to impact on weight in the short term, but an award scheme that raises the profile of healthy options contributes to the increase in general awareness. Future strategy may be more likely to be effective if there is an increased emphasis on actions that could be expected to impact directly on weight in the shorter term.

In looking at cost effectiveness the McKinsey report(45) suggests that all interventions looked at so far are likely to be cost effective - late stage intervention is costly. If it all matters, and a lot is happening, but making little difference, then strengthened leadership taking a coordinated and strategic approach locally and nationally is critical.

The aims of the ORM are general and non-specific and would benefit from greater focus. In view of the time it takes for important structural, environmental and regulatory changes any future strategy in Scotland should take a long term view. This is recognised in the ORM, but a time span was not set. A 10-20 year time frame with aims similar to those proposed by WHO of achieving no further increase in overweight and obesity by 2025, may be relevant to Scotland, especially if the aim is to achieve this across all ages, genders and socioeconomic groups.

There is value in focusing on actions that have a degree of 'traction' with the public, professionals *and* politicians, as they are more likely to be taken up and supported. It is suggested that the broad range of action should continue, but with a better balance between the types of action; an increased emphasis on areas which are likely to have a direct and sustained impact on weight; and those actions which could gain political and public support in the shorter term.

11 Conclusions and recommendations

Substantial work has taken place both in response to the ORM and alongside it, however 5 years on the prevalence of overweight and obesity remains high with the underlying trends heading upwards, particularly in disadvantaged groups. This is a long term, serious issue and is in need of further action. Without the considerable effort to date the situation might have been worse, however it is clear that current work is not sufficient to reduce the prevalence across all population groups. Maternal overweight and obesity and the increase in type II diabetes are major concerns.

As the evidence base underpinning the ORM remains valid with some areas strengthened, the conclusion must be that the next step is to build on the ORM by addressing the gaps and barriers to effective implementation, especially where progress has been more challenging.

a) Recommendation 1

The development of a revised ORM would benefit from being led by a dedicated specialist supported by an expert group and the setting up of a formal review process. The ORM should be revised in light of progress and updated to include:

- recognition of the epidemic nature of the problem in that all population groups are affected and, accepting the principle, as defined by WHO that an epidemic can only be resolved by government-led action, set goals to stop the increase in overweight and obesity across all population groups in Scotland. This should acknowledge the need to take i.e. full life course approach which prioritises early years, but also addresses young people and later life;

- recognition of the need for coordination of action(s) on prevention, weight management and treatment in establishing a national weight management programme;

- action to increase public and professional awareness and understanding;

- action to tackle inequalities through action at locality level using co-production and assets-based approaches;

- ensuring effort is maintained in both tackling the long term environmental and regulatory actions and action aimed at individual behaviours;

- auditing the range of policies that impact on overweight and obesity with a view to increasing integration, effective implementation and assessment of progress;

- strengthening the national and local infrastructure to address obesity and overweight and clarify accountability;

- reviewing the funding available for direct interventions to address overweight and obesity and that funding is identified to deal with preventive strategies, treatment and health conditions attributable to overweight and obesity;

- formally reviewing the measurements used for overweight and obesity and the way in which existing data can be used more effectively to improve understanding and enable effective monitoring at both local and national levels;

- establishing a comprehensive strategy for research, evaluation, and service development, including, but not exclusively government funded research, to prevent and manage obesity and overweight;

- working across the whole food system on actions that are likely to have direct impact on weight;

- increasing physical activity and reducing sedentary behaviour for all with a focus on the inactive and overweight; and

- encouraging leadership from the NHS, putting a priority on reducing staff overweight and obesity.

b) Recommendation 2

In view of the epidemic nature of the problem, local action should be led by Directors of Public Health and include:

- providing senior leadership to advocate across NHS Boards and Local Authorities, Joint Adult Health and Social Care Boards, and Early Years Collaboratives to develop strong partnerships, for example with town planners and building designers;

- creating and taking the opportunities provided by health and social care integration and CPPs for coordinated action, monitoring and reporting to tackle the epidemic locally; and

- focusing on inequalities by taking a community and place based approach, with an emphasis on the obesogenic environment.

c) Recommendation 3

Key national agencies[†] should increase coordination of action on overweight and obesity including:

- developing and maintaining shared outcome and evaluation frameworks;

- improving data though linkage, trend analysis and filling current gaps using appropriate outcome measures for excess body fat accumulation and its health consequences;

- increasing public and professional awareness; and

- improving practice through networks and major national events.

[†] Key agencies would include: Food Standards Scotland, sportscotland, Transport Scotland, NHS Health Scotland, Education Scotland, NHS Healthcare Improvement Scotland, NHS Education Scotland, COSLA and voluntary sector organisations (e.g. Diabetes UK, British Heart Foundation, Scottish Cancer Prevention Network0 and Obesity Action Scotland and others with an interest in reducing overweight and obesity).

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13 Appendices

Appendix 1 – Methodology

Appendix 2 – Literature Review

Appendix 3 – Scottish Policy Links

Appendix 4 – ORM Activity Updates