Health Impact Assessment of the duration and timing of school lunch-breaks in Cardiff and Vale maintained schools

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Purpose and Summary of Document:

This document reports the findings of a Health Impact Assessment (HIA) of the duration and timing of school lunch-breaks across Cardiff and Vale of Glamorgan maintained schools. It provides an overview of background literature relevant to the topic and reports the outcomes of a stakeholder workshop where a health and well-being impact appraisal took place. Following a discussion of the main issues, a set of recommendations are proposed for Local Authorities, Schools, the local public health team and policy makers.

Contents

1.   Introduction

The UK is in the grip of an obesity epidemic with one of the highest levels of childhood obesity in Europe (National Obesity Forum, 2015). Obesity has consequences for children's physical and mental health as well as the future of the NHS (RSPH, 2016). In Cardiff and the Vale of Glamorgan University Health Board (CVUHB) area, 15% of secondary-aged girls and 15% of boys self-report being overweight or obese compared to a Welsh average of 18% (HBSC, 2013/14). Data from the most recent child measurement programme show that 20.9% of reception aged children in CVUHB are overweight or obese (PHW/NWIS, 2016).

Improving children and young people's diets, increasing levels of physical activity and reducing sedentary behaviour are key components of obesity prevention (Department of Health, 2004).   These factors have become even more pertinent due to increasing access to television, tablets, computers and other sedentary alternatives that are attractive to children and young people.

Increasing levels of physical activity as a means to prevent childhood obesity has been an important feature of Welsh Government policy and support to schools for many years. The current Physical Activity Action Plan for Wales "Creating an Active Wales" states that the provision of high quality physical education and the effective delivery of physical literacy is essential for children and young people to have the skills and confidence for lifelong participation in sport and physical recreation (Welsh Assembly Government, 2010). A key priority is to ensure access to opportunities for high quality play that is physically active.

School food policy has also been a key feature of Welsh Government policy over the past decade since the food provided in schools makes an important contribution to the diets of children and young people. The food and drink provided in schools can make a positive contribution towards giving children and young people a healthy balanced diet as well as encouraging them to develop good eating habits. The Healthy Eating in Schools (Wales) Measure was passed by the National Assembly in 2009. This places a legal duty on local authorities and governing bodies to promote healthy eating and drinking by pupils in maintained schools. The biggest driver for change on school lunch provision in Wales was the Appetite for Life guidance and subsequent legislation which ensures the food offered in school canteens at lunchtime meet the required food and nutritional standards. The Healthy Eating in Schools (Nutritional Standards & Requirements) (Wales) Regulations (2013) place a duty on local authorities and school governing bodies to promote healthy eating in schools. This legislation replaces the Appetite for Life guidelines and imposes requirements and standards for breakfast and lunch in maintained primary and secondary schools.

As the majority of children and young people attend a maintained school setting, it is imperative that schools promote the health of pupils and staff through encouraging healthy lifestyles, building healthy, sustainable environments and addressing health inequalities. Researchers have examined the role and impact of various school practices and policies on children's health. However, one factor that has received less attention is the length and timing of school lunch-breaks within the school day and the impact of shortening the school lunch-break on pupil and staff health and well-being. This report explores this issue across Cardiff and Vale of Glamorgan maintained schools. It documents the outcomes of a Health Impact Assessment undertaken between February and April 2016. The focus of the report is on secondary schools as this is where the greatest challenge lies locally in terms of short and late lunch-breaks, although consideration is also given to the health and well-being impacts on primary school pupils and staff.

2.   Health Impact Assessment

Health Impact Assessment (HIA) is a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of these effects within the population (European Centre for Health Policy, 1999). It uses the wider determinants of health model as its basis and uses a broad definition of health. Three of the key features of HIA identified by Wismar et al (2007) are:

- It attempts to predict the health consequences of different options
- It is intended to influence and assist decision-makers
- Stakeholder involvement

HIA is a participatory process where organisations and community members share their views and concerns about a proposal or service development and identify solutions to allay issues causing conflict. Inherent in the approach is an asset based approach to health; that is, people centered and a focus on the positive capability to identify problems and activate solutions which promote the self-esteem of individuals and communities, leading to less reliance on professional services (Bartley, 2006). The Welsh Government is committed to developing the use of health impact assessment. It is mentioned as a tool for Public Service Boards to utilise in their assessments of well-being as part of their duty under the Well-being of Future Generations (Wales) Act 2015.

The HIA of school lunch-breaks was conducted in line with Wales Health Impact Assessment Unit Guidance (WHIASU, 2014) and comprised three main components: a scoping stage, a brief review of the literature and thirdly a stakeholder participatory workshop.

The scoping stage for the HIA was undertaken by a group comprising representation from the Cardiff and Vale Public Health Team and the Public Health Wales Policy, Research and International Development Directorate. The meeting of this small group identified:

- Literature review search questions
- Stakeholders to be invited to the event, and venue options
- The key areas that the workshop should address (i.e. physical activity) and population groups (i.e. pupils and staff)

The aim of this HIA is to provide an overview of the health and well-being impacts of shortened and later lunch-breaks on pupils and staff within Cardiff and Vale primary and secondary schools. The objectives are:

- To gather current data on the length and time of school lunch-breaks in Cardiff and Vale schools (where this data is available) and compare with 2013 data
- Link current data on school lunch-breaks with deprivation data
- To examine and provide an overview of published, peer-reviewed evidence and/or grey literature in relation to the health and well-being impacts
- To gather the views of local stakeholders on health and well-being impacts
- To make recommendations for schools, directors of education and wider partners.
- To identify mitigating activities to reduce any negative impacts of shortened / later lunch-times.

3   Duration of school lunch-breaks

3.1 National (Wales) data

There is a limited amount of recent, systematic data on the nature and length of break times in schools available nationally. Previous data has shown huge variation between schools in the length of time they allow for lunch (Nelson et al, 2004; Estyn, 2008). In 2008, Estyn found that, of their schools surveyed, the average length of lunch-time was:

- 65 minutes for up to Year 2
- 59 minutes for pupils Year 2 to 6
- 51 minutes for pupils in Year 7 and above.

Nelson et al (2004) found that time available for lunch in English secondary schools ranged from 25 minutes to 2 hours, with a mean of 50 minutes (SD=15 minutes). In Wales, Townsend (2013) found the mean lunch-break length for schools was 48 minutes, with a maximum of 63 min and a minimum of 25 min.

A national UK wide survey carried out in 2006 shows evidence of substantial reductions over time in the length of lunch-times and the virtual elimination of afternoon breaks for Key Stage (KS) 2[1] (Blatchford and Baines, 2006). The number of schools with lunch-breaks over 65 minutes had substantially reduced at KS1 from 60% to 44%, at KS2 from 31% to 12% and at KS 3/4 from 23% to 5%. Conversely the number of short lunch-breaks increased across all Key Stages with 95% of KS 3/4 pupils having a lunch-break of 45 minutes or less in 2006 compared to 76% in 1995. Over half of the lunch-times at secondary school are now 54 minutes or less, compared to 29% in 1995.

More recently, the Local Authority Catering Association (LACA, 2011) found that on average, pupils have just 32 minutes for their lunch-break (28 minutes in primary schools and 33 minutes in secondary). LACA state that children and young people might have access to healthy and nutritious meals at school but they need sufficient time to allow them to queue, select, pay for and eat their food.

3.2   Local primary school data

Current data on duration and timing of break and lunch-times in Cardiff primary schools is provided in Table 1. The full dataset is provided in Appendix 1. Please note, data for Vale primary schools was not available at the time of writing.

Table 1: Cardiff Primary School lunch-time data (2015/16)

Number of schools	97
Range of school lunch-break length (mins)	30 - 90
Mean school lunch-break length (mins)	67
% with 30 lunch-break	2%
% with 40 or 45 minutes lunch-break	6%
% with 50 or 55 minutes lunch-break	5%
% with 60 minutes+ lunch-break	86%

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[1]   Key Stage 1 = Years 1 and 2
Key Stage 2 = Years 3-6
Key Stage 3 = Years 7-9
Key Stage 4 = Years 10 and 11

The latest start time for a lunch- break is 12:45pm (in one school). The majority of primary schools in Cardiff commence at 12pm or 12:15pm.

3.3   Local secondary school data

Data for secondary schools in Cardiff and the Vale of Glamorgan was gathered from Education Catering services (Cardiff) and individual schools (Vale). The data is summarized in Table 2.

For secondary schools across Cardiff and the Vale of Glamorgan, the majority have a lunch-break of between 45 minutes or longer in line with the recommendation set out by a local public health team report in 2013 (CVLPHT, 2013). However, the mean length of school lunch-breaks across the CVUHB area is 43 minutes. One fifth of schools have lunch-breaks of 30 minutes or less. In Vale secondary schools, half of schools have lunch-breaks less than 45 minutes.

In terms of positioning of the lunch-break within the school day, the vast majority of Vale secondary schools commence their school lunch-break after 1pm, whereas the majority in Cardiff starts their lunch prior to 1pm. The trend for Vale of Glamorgan schools to start their lunch-break later is in part due to the higher proportion of schools which have a staggered approach, which means a later lunch start time for a proportion of the school. Only 1 out of 17 schools in Cardiff implement a staggered lunch-time.

Table 2: Summary school lunch-break information for Cardiff and Vale secondary schools

	Cardiff % (n)	Vale % (n)	Total % (n)
Number of secondary schools	**17**	**8**	**25**
Range school lunch-break length (mins)	30 - 60	25 – 60	25 – 60
Mean school lunch-break length (mins)	44	42	43
% with 30 or less minutes lunch - break	23.5% (4)	12.5% (1)	20% (5)
% with 31-44 minutes lunch-break	5.9% (1)	37.5% (3)	16% (4)
% with 45-54 minutes lunch-break	47.1% (8)	37.5% (3)	44% (11)
% with 55+ minutes	23.5% (4)	12.5% (1)	20% (5)
Data on duration unknown	-	-	-
Lunch-break 1pm or later	35.3% (6)	75% (6)	48% (12)
% staggered lunch-times	5.9 % (1)	50% (4)	20% (5)

*Two schools included in the 2013/14 analysis have now closed (Llanedeyrn and Glyn Derw).

3.4   Links with areas of deprivation

Corresponding to the findings of Food and Physical Activity survey carried out in 2007, lunch-times are shorter in schools across the Vale of Glamorgan and Cardiff in areas of socio-economic deprivation (Appendix 2). Similarly, schools in these areas have a later lunch-break commencing after 1pm in the majority of cases. The exception to this is in the Vale of Glamorgan Eastern Vale GP Cluster area where both schools in this least deprived area provide short lunch-times (i.e. 30 minutes).

3.5   Comparisons in lunch-break duration data over time

Data from the 2013/14 survey of school lunch-breaks in Cardiff secondary schools has been used to make comparisons between lunch-times in 2013/14 and 2015/16. A full list of the changes made at individual school level is in Appendix 2. The key changes are summarised below and in Table 3:

- 11 schools have made no changes to their lunch-time arrangements

- A higher % of schools have a lunch-break of 30 minutes or less in 2015/16
- A greater % of schools have a lunch-break equal to or over the recommendation of 45 minutes in 2015/16
- The % of schools providing a lunch-break of 55 minutes or more has reduced in 2015/16 since 2013.
- Fewer schools in 2015/16 start their lunch-time at 1pm or later
- One school in 2015/16 offers staggered lunch-times to students

Table 3: Comparison of data for Cardiff school: 2013/4 v. 2015/16

	2013/14 data for Cardiff secondary schools* % (n)	2015/16 data for Cardiff Secondary schools % (n)
Number of secondary schools	19	17
% with 30 or less minutes lunch-break	21.1% (4)	23.5% (4)
% with 31-44 minutes lunch-break	21.1% (4)	5.9% (1)
% with 45-54 minutes lunch break	26.3% (5)	47.1% (8)
% with 55+ minutes	26.3% (5)	23.5% (4)
Data on duration unknown	5.2% (1)	-
Lunch-break 1pm or later	47.3% (9)	35.3% (6)
% staggered lunch-times	10.5% (2)	5.9 % (1)

4   Survey data on school lunch-breaks

A UK wide survey of school lunch-times carried out in 2006 revealed that pupils were overwhelmingly positive about break times, particularly lunch-breaks (Blatchford and Baines, 2006). Schools themselves saw the value of lunch-breaks in functional terms such as providing time for eating and drinking and giving teachers a break. The reasons for shortening lunch-breaks are varied.

Many schools in Wales and across the UK have introduced shorter lunch-breaks (i.e. less than 45 minutes) to address concerns over the challenges of controlling pupil behaviour, the need to attend to bullying, and the worry over teenage children leaving the school site and hanging around in local neighbourhoods (WAG, 2008). In addition, the plethora of curriculum reforms and increased emphasis on the core curriculum subjects as well as testing has shifted the focus of schools more towards performance management (Blatchford and Baines, 2006).

Pupils at primary age have noted various problems at break times including pupils behaving badly, ball games getting in the way, not having enough to do and not having enough space (Blatchford and Baines, 2006). At secondary level problems identified were similarly lack of things to do, pupils behaving badly, fun activities not being allowed and ball games getting in the way (Blatchford and Baines, 2006). However, rather than wanting to cut break times due to such problems, the survey found no evidence that pupils wished to cut school break-times further: indeed nearly 64% of Year 10 students stated that the lunch-time was not long enough (Blatchford and Baines, 2006). The authors suggest that rather than cutting lunch-time length, secondary schools could do more to provide formal training and preparation of supervisors, provide better and more quality facilities and attend to the quality of the school grounds. Instead it is concluded by the authors that schools have responded by shortening lunch breaks rather than attempting to solve the root causes of the problems identified.

Local discussions with schools in Cardiff and Vale reveal that that the logistics of lunch-breaks and providing school meals during a relatively short period of time (usually under an hour) is a challenge for catering staff, teachers and students alike. Often dining rooms cannot sit all students and there are 2 or 3 'sittings' or an agreed queuing order where certain year groups go first or last. Also dining rooms are dual purpose facilities used for lessons and PE which puts added pressure on the time allowed for lunch.

The Food and Physical Activity Survey conducted in 2007 revealed several unintended consequences of reducing school lunch-breaks. Based on the responses of 83% of maintained primary and secondary schools in Cardiff, the survey revealed:

- School lunch-times were significantly shorter in areas of higher deprivation.
- Shorter lunch-times led to a lower uptake of free school meals (FSM) with a considerable impact on areas of deprivation.
- Schools in deprived areas were less likely to stagger or rotate their lunch-times.

- Schools that staggered their lunch-time had a significantly higher uptake of FSM.
- Pupils were more likely to have access to games and equipment at lunch-time if the lunch-break was longer than 1 hour.
- The longer the lunch-time the more likely the school was to operate a physical activity or healthy eating club at lunch-time

In a report on how well schools in Wales are supporting children and young people to be healthy and active, Estyn (2008) describe some of the issues in relation to school lunch-breaks:

- The length of the queue for food and drink at break and lunch-times affects a pupil's decision about what to eat and drink. Pre-ordering helped to reduce queues in some schools.
- In secondary schools with a lunch-time of 45 minutes or less, pupils were noticeably less likely to eat a meal as they felt it took up too much time and they wanted to be able to take part in leisure or social activities.
- Pupils from Yrs 7-11 are not allowed off site during lunch-times in two-thirds of secondary schools surveyed. The majority of pupils who are allowed off site usually do go off site. Some of these pupils receive free FSM and instead of taking the FSM they are paying for food off-site. They do not want to stay in school for their free meal because they want to be with their friends, who go off-site during lunch-time.

An example in the report states that one school with a short lunch-time offers no lunch-time activities but has a comprehensive after-school programme of activities instead. Although this may cover organised activity (of which not all children will participate) the shorter break times prevent active play and informal activity which is vital to all children's development, both socially and physically.

A survey conducted in 2013 by Cardiff and Vale Public Health Team compared previously collected data from the 2007 Food and Activity Survey (CVPHT, 2013). No schools had increased their lunch-time in this time. The 2013 survey identified a trend for short lunch-times in Cardiff schools with seven schools having lunch-times of less than 35 minutes. Just two schools had introduced staggered lunch-time arrangements since 2007/8 (which has been shown to decrease queuing time and therefore offer pupils more seated time to eat their lunch) and 50 per cent of secondary schools in Cardiff had a lunch-time which started after 1pm.

The impacts identified at the time of the 2013 survey were:

- Pupils did not have sufficient time to eat their meals, resulting in buying snacks (e.g. pizza slices) instead of the Meal of the Day or bringing a packed lunch to save time and avoid queuing.

- Education Catering had reduced their income in two of the schools that reduced their lunch-time
- Less time/opportunity for physical activity and other lunch-time clubs.
- Schools with staggered lunch-times had a higher uptake of FSM

Anecdotally, Catering managers reported that pupils spent less in schools who had a lunch-time later in the day (after 1pm) as they were more likely to choose hand held snack items at break time in preference to Meal of the Day options because it was too long to wait until lunch and there is not enough time or space to eat at lunch-time.

A range of recommendations were developed in the report following the results of the 2013 survey:

    i)   A minimum lunch-break of 45 minutes and an optimal time of 75 minutes,

    ii)   Lunch-breaks to commence at 1pm at the latest, ideally no later than 12:30pm

    iii)   To re-introduce staggered lunch-times.

Due to a range of factors, implementation of the recommendations and activity to mitigate against the negative impacts of the short lunch-breaks identified has not taken place. Concerns have been raised locally since then about the increasing trend for schools across the Cardiff and Vale to reduce the length of their lunch-time and the perceived impacts this might have on food selection, consumption and time available for physical activity and other lunch-time activities.

A more detailed analysis of the literature relevant to the potential health and well-being impacts of shortened lunch-times is provided in Appendix 3. This includes peer-reviewed literature highlighting the negative impacts of shortened school lunch-breaks on children and young people's participation in physical activity and levels of physical literacy, impacts on food choices and reduction in fruit and vegetable consumption and time available for participation in play opportunities.

5   Results of Stakeholder Workshop

5.1 Aims and methodology

In view of the trend for schools to reduce the length of their lunch-break and the impacts identified from surveys and other literature, a participatory workshop was undertaken to identify, from stakeholder's perspectives:

- The health and well-being impacts of the duration and timing of school lunch-breaks on pupil and staff health and well-being
- Actions to maximize the positive impacts and mitigate the negative impacts

The workshop was held at a central venue in Cardiff on a date and time that was convenient to stakeholders to maximise access and involvement in the event.

Invitations were sent to a range of stakeholders identified during the scoping stage of the HIA by e-mail. The workshop was held on Thursday 4th February 2016 at Sport Wales in Cardiff from 2pm-5pm. Nineteen individuals attended, representing 10 organisations (Table 4).

Table 4: Attendees at Stakeholder Workshop

Organisation	Number of representatives
Vale of Glamorgan Council	5
Cardiff Council	3
Public Health Wales	3
Cardiff and Vale University Health Board	2
Welsh Local Government Association	1
Sport Wales	1
Cowbridge Comprehensive School	1
Cardiff University	1
Keep Wales Tidy	1
Wales Health Impact Assessment Unit	1
Total	**19**

The HIA workshop followed a standard structure, with the inclusion of presentations providing background information at the start. This was followed by group work to complete the HIA appraisal tool which considers various aspects of health and well-being according to the wider determinants of health as well as vulnerable groups (Appendix 4). Groups were facilitated by a Specialty Registrar and a Senior Public Health Practitioner (Health Impact Assessment).

In addition to the Stakeholder Workshop, the views of Personal and Social Education (PSE) leads and Healthy Schools Co-ordinators from the Vale of Glamorgan were sought. Issues raised in this forum have been incorporated into the assessment overview in the following section.

Group discussions largely focused on impacts on the lifestyles, although other elements were discussed as appropriate. Participants were requested to think about the health and well-being impacts on staff and pupils separately in order to ensure both population groups were considered fully. Participants expressed disappointment that representation from school staff and pupils to generate further insight into the health and well-being impacts of shorter lunch-times was absent. Participants were informed that efforts had been made to encourage teachers to attend but none were available (with the exception of one secondary school).

5.2 Assessment overview

For the purposes of the report, the issues raised according to the HIA assessment tool have been collated into key themes (Tables 5-7). The health and well-being impacts of short lunch-breaks on staff/teachers and pupils are provided in Tables 5 and 6. The health and well-being impacts of staggered lunch-breaks are provided in Table 7. Other issues raised during the workshop discussion are provided in Appendix 5.

Table 5: Health and well-being impacts of shortened and/or later lunch-breaks (SCHOOL STAFF)

Negative Impacts	Positive Impacts
• Poorer pupil behaviour after lunch as pupils have not have enough time to 'let off steam', relax etc. • Lack of time for staff to eat, relax and socialise • Lack of time to discuss issues with school staff or external professionals • Lack of time to participate in physical activity • Health and well-being is undervalued • Lack of time for staff training	• Less need to respond to episodes of poor pupil behaviour(e.g. bullying, truancy, excitable after a long break) • Less disruption to lessons • Shorter breaks require fewer facilities for staff in school (e.g. staff rooms) • Less financial cost of employing staff to cover/supervise lunch-breaks • Earlier school finish time

Table 6: Health and well-being impacts of shortened and/or later lunch-breaks (PUPILS)

Negative Impacts	Positive Impacts
Lifestyles	
• Less opportunity for physical activity • Reduced participation in lunch-time clubs / activities • Less healthy food choices made / snack items purchased rather than main meal of the day • Increased length of time between meals • Reduced FSM uptake • Lack of time for appointments during the lunch-break (e.g. school health nurse) • Pupils are less likely to eat hot plated foods served during lunch times, as they are purchasing snack/grab and go type foods at break time (due to short length / late timing of lunch-break). Food serviced outside of lunch-times meets the food standards for schools but not the strict nutritional values required for food served during lunch-times.	• More opportunities for physical activity after school • Pupil behaviour is better during the lunch-break (opportunity for bullying, truancy etc) and better in the afternoon sessions. • Pupils are less likely to go off site (therefore they are safer and more likely to eat food provided on site which is more healthy. • Earlier finish to the school day (therefore can participate in physical activity) • Fewer pupils are socially isolated.

Negative Impacts	Positive Impacts
Social and community influences on health	
• School fixtures are more difficult to arrange as schools have early finish times due to shorter lunches • Pupils do not experience the social element of eating at a table with their friends • Less opportunity for social interaction and potential impacts on mental health • Transition from primary to secondary school is more challenging (as younger pupils are used to a longer lunch break in their primary school) • The social value of lunch-time is diminished	• Earlier school finish time means pupils can collect siblings from nearby schools
Living and environmental conditions affecting health	
• Safety of pupils going off site is compromised if they have less time • Lack of space in school dining rooms to accommodate a surge in capacity • Reduced access to green space	• Easier to manage wet weather conditions with limited indoor facilities

Negative Impacts	Positive Impacts
Economic conditions affecting health	
• Financial implications (i.e. Appetite for Life and the Deprivation Grant moved into core money. The impact of this is exacerbated by short lunch-breaks).	
Access and quality of services	
• Quality of catering potentially compromised due to short timescales to prepare and serve food • Difficulties in recruiting midday supervisors	

Table 7: Health and Well-being impacts of staggered lunch-breaks

Negative Impacts	Positive Impacts
• Disruption to lessons (lunch-times can straddle lessons) • More cooking and preparation for catering staff • Disruption and noise over a longer period of time	• Less queuing and therefore more time to participate in activities • Less disruption and noise due to steady flow of pupils • Easier to manage weather conditions • Beneficial for children with ASD (due to structure and less chaotic nature of staggered lunch-breaks)

In terms of vulnerable groups who might be adversely affected by shorter and/or staggered lunch-breaks, the following points were raised during the group discussions:

- **Pupils who use school bus transport** can be disadvantaged by activities that take place after school instead of at lunch-time.
- Lunch-time activities are free and therefore more accessible to **families on a low income**

- Lunch time activities can encourage **children who would not otherwise participate in physical activity**.
- **Families on lower incomes** are disadvantaged by shorter lunch-times due to the effects on uptake of FSM.
- For some children, lunch-times are the only opportunity for them to become involved in physical activity outside of physical education lessons
- The noise and disruption caused by staggered lunch-times could particularly affect **children on the autistic spectrum.**

6   Discussion

The findings from this health impact assessment demonstrate the range of views both for and against shortening lunch-breaks in the school setting. In line with the limited evidence base in this area highlighted in Appendix 3 the stakeholder workshop revealed the main concerns relate to impacts on lifestyles, in particular on opportunities for physical activity, reducing sedentary behaviour and consumption of healthy, nutritious food. These two modifiable factors are key aspects of the whole school approach to health and are crucial in terms of obesity prevention (Foresight, 2007).

In secondary schools across Cardiff and the Vale of Glamorgan, current data on school lunch duration reveals differences in the length of school lunch-breaks and positioning in the school day. In line with available data nationally, there are some concerning trends in secondary schools in Cardiff and the Vale of Glamorgan. Schools are generally opting for shorter lunch-times and very few have implemented a staggered approach to reduce the time needed for queuing and to potentially increase uptake of FSM. This goes against the policy imperatives of increasing levels of physical activity, improving dietary choices and overcoming sedentary lifestyles. The shortest lunch-break identified was 25 minutes for one year group. Consideration should be given to whether in some instances lunch-breaks have become too short to allow for even the most basic of activities of eating, let alone time for recreational activity. In the Vale of Glamorgan, a large proportion of schools commence their lunch-time after 1pm, however this is potentially offset by the number of schools who offer a staggered approach to their lunch arrangements which has been shown by Estyn to have advantages for pupils in terms of uptake of FSM and time for recreational activity. The data gathered from primary schools in Cardiff highlighted that schools have, in the vast majority of cases, adopted a length of time which is suitable for children to eat and have some recreational time including structured or unstructured activity. Going forward it is vital for primary schools to maintain this time allocation and positioning of the school lunch-break and to recommend for schools with less time to increase their school lunch-time period for the reasons stated.

School stakeholder views correspond with the findings of the most extensive survey on school break times carried out in 2006 which identified poor behaviour and curriculum pressures as the principal reasons for reducing lunch-time length (Blatchford and Baines, 2006). However, rather than looking at the root causes of problematic behaviour identified in the 2006 survey (i.e. overcrowding, supervision and the school grounds) schools have tended to adopt a 'quick fix' approach of shortening lunch-breaks as a form of prevention. If schools were more pro-active in terms of the provision of adequate facilities and equipment and supervision during the lunch-time, behaviour might be improved. Empirical evidence investigating the association between longer lunch-breaks and problematic behaviour, such as levels of truancy, would provide insight into this issue. Many of the views and opinions are anecdotal and not based on research findings.

Literature surrounding lunch break duration in schools and associations with pupil and staff health and well-being, specifically physical activity levels and sedentary behaviour is limited. One study which has identified an association between shortened lunch breaks and increased sedentary time concludes that if schools maintain or extend the duration of lunch breaks, this may have a positive impact on sedentary behaviour through the provision of more time for physical activity (Morgan et al, 2016).

Evidence identifies the beneficial aspects of play, physical activity and a healthy diet and some examples of studies highlighting that a longer break can positively influence the quality and quantity of foods consumed as well as influence factors such as the uptake of FSM. As health is a key driver for children's ability to learn, as articulated through the whole school approach to health and wellbeing, it seems that providing a lunch-break long enough to have both time to eat and to participate in some kind of recreational activity can only enhance children and young people's health.

A key limitation of this HIA is the representation of schools and pupils at the stakeholder workshop event. Participants were largely health professionals which might have impacted on the outcome of the workshop, for example in terms of identifying negative impacts on health as opposed to focusing on the potential positives of shorter lunch-breaks. Consultation with the education sector including primary and secondary schools (teaching and non-teaching staff) as well as professional groups such as education welfare officers and educational psychologists would improve the generalisability of the findings. Furthermore, it is essential to consult with children and young people to provide greater insight into this area and help to identify a range of mitigating activities.

Based on the themes generated in the stakeholder workshop and the relevant literature, a longer amount of time available within a lunch period is likely to have a positive impact on levels of physical activity and types of food consumed.

Arguably, this is particularly important for schools to implement due to pressures on curriculum time and evidence which shows that children and young people are not receiving their recommended 120 minutes of physical education per week (Sport Wales, 2016). Lack of participation at an early age could lead to sedentary lifestyles later in life and be a contributory factor to health related problems such as heart disease, obesity and diabetes. Break times should be a sociable and enjoyable experience and should allow time for participation in physical activity, such as play time or sporting clubs.

Despite the limitations of this report, it has provided some evidence of the adverse impacts on child and staff health of shortened lunch-breaks. Policymakers should work with schools as part of their commitment to a whole school approach to health to maintain lunch-breaks of a sufficient length to allow pupils to make healthy choices, support the nutritional guidelines schools follow and allow pupils to maximize their participation in physical activity.

7 Recommendations

1.   In relation to lunch-break policies in schools:

   i)   A minimum school lunch-break of 45 minutes to allow adequate time for pupils to eat and participate in structured or unstructured recreational activity to increase physical activity levels and reduce sedentary time.

   ii)   The school lunch-break to begin at 1pm at the latest. The ideal lunch-break to commence at 12:30pm to minimise the length of time between breakfast and lunch and discourage pupils from snacking on energy dense 'grab and go' type food items (e.g. pizza slices) at break time.

   iii)   Introduction of staggered lunch-times where these do not exist to reduce time spent queuing.

   iv)   Maintain time allocated to lunch-breaks in primary schools (i.e. 1 hour)

2.   Encourage schools to provide adequate facilities, equipment and supervision during the lunch-time to promote positive behaviour.

3.   Schools to discourage pupils going off-site during the lunch-break to reduce purchase and consumption of unhealthy, fast-food.

4.   Advocate for action on the quality of the food environment near to schools (e.g. restrict planning permission for takeaways and other food retail outlets within walking distance of schools).

3.   Consult with children and young people and school staff in relation to the impacts of shortened and later lunch-breaks and mitigating factors to counter the negative impacts of shortened lunch-breaks.

4.   Undertake research to explore the association between behavioural problems (e.g. truancy, bullying incidents) at lunch-times and duration of lunch-breaks.

5.   Include questions about school lunch-breaks in the School Health Research Network Questionnaire.

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Appendix 1 Primary school lunch-break data (Cardiff)

Primary Schools	School Day	Morning Break		Lunch Break		School Day	Length of Lunch
	Start	Start	Finish	Start	Finish	Finish	Minutes
Adamsdown	8.55	10.35	10.50	12.00	1.05	3.00	65
Albany	8.55	10.40	11.00	12.00	1.30	3.30	90
All Saints	8.55	10.30	10.45	12.00	13.35	3.30	95
Allensbank	8.55	10.45	11.00	11.45	1.00	3.15	75
Baden Powell	8.55	10.45	11.00	12.15	12.45	3.05	30
Birchgrove	8.50	10.30	11.00	12.00	1.15	3.35	75
Bishop Childs	8.50	10.20	10.35	12.00	1.30	3.30	90
Bryn Celyn	8.55	10.30	10.45	12.00	1.00	3.15	60
Bryn Hafod	8.45			12.15	1.00	2.45	60
Christ the King	8.55	10.30	10.45	12.15	1.30	3.30	75
Coed Glas	8.55	10.40	10.55	12.00	1.25	3.30	85
Coryton	8.55	10.30	10.50	12.00	1.15	3.30	75
Court	9.20	10.45	11.05	12.45	1.15	3.20	60
Creigiau	9.00	10.15	10.50	12.00	1.15	3.30	75
Danescourt Primary	8.55	10.30	10.45	12.00	1.00	3.20	60
Ely & Caerau Childrens Centre	9.00			11.30	12.00	3.00	30
Fairwater	8.55	10.30	10.45	11.45	1.00	3.30	75
Gabalfa	8.55	10.30	11.00	12.15	1.00	3.20	45
Gladstone Primary	8.55	10.40	10.55	12.00	1.15	3.30	75
Glan Yr Afon Primary	9.00	10.40	11.00	12.00	1.20	3.15	80
Glyncoed	8.55	10.40	10.55	12.00	1.15	3.20	75
Grangetown	8.55	10.35	10.50	12.00	1.00	3.00	60
Greenway	8.55	10.45	11.00	12.00	1.00	3.00	60
Gwaelod Y Garth	9.00	10.25	10.40	12.00	1.10	3.30	70
Hawthorn	8.50	10.20	10.45	12.00	1.00	3.20	60
Herbert Thompson Primary	8.55	10.20	10.40	12.00	1.00	3.10	60
Holy Family	8.55	10.30	10.45	12.00	1.00	3.30	60
Hywel Dda Primary	8.55	10.25	10.45	12.10	1.05	3.10	50
Kitchener Road	8.55	10.40	11.00	12.10	1.10	3.00	60
Lakeside	8.55	10.40	11.00	12.00	1.00	3.30	60
Lansdowne	8.55	10.40	11.00	12.00	1.30	3.30	55
Llandaff Primary	8.55	10.45	11.00	12.00	1.20	3.35	80
Llanedeyrn Primary	8.55	10.30	10.45	11.45	12.45	3.30	60
Llanishen Fach	8.55	10.30	10.45	12.00	1.25	3.30	85
Llysfaen	8.55	10.30	10.45	12.00	1.00	3.30	60
Marlborough	8.55	10.35	10.50	12.00	1.00	3.30	60
Meadowbank	9.10	10.45	11.00	12.00	1.00	3.30	60
Meadowlane	8.15	10.30	10.50	12.00	1.20	3.15	80

Millbank	8.55	10..30	10.45	12.00	1.25	3.30	85
Moorland	9.00	10.30	10.55	12.15	1.15	3.00	60
Oakfield	8.55	10.30	11.00	12.00	1.30	3.15	75
Pen Y Bryn	9.00	10.30	11.00	12.00	1.30	3.15	75
Pencaerau	8.55			11.45	12.40	3.00	40
Pentrebane	8.55	10.35	10.50	12.00	1.25	3.30	85
Pentyrch	9.00	10.30	10.45	12.00	1.15	3.40	75
Peter Lea	8.55	10.25	10.45	12.00	1.00	3.15	60
Radnor	8.55	10.20	10.35	12.00	1.15	3.15	75
Radyr Primary	9.00	10.30	11.00	11.45	1.00	3.00	75
Rhiwbina	8.55	10.30	10.45	12.00	1.00	3.35	60
Rhydypenau	8.55	10.40	11.00	12.00	1.00	3.35	60
Riverbank	9.05	10.40	11.00	12.00	1.00	3.20	60
Roath Park	8.55	10.45	10.55	12.00	1.00	3.30	60
Rumney Infant	8.55	10.30	10.45	12.00	1.10	3.15	70
Rumney Junior	8.55	10.30	10.45	12.00	1.00	3.15	60
Severn Primary	9.00	10.30	10.45	12.05	1.00	3.15	55
Springwood	8.55	10.40	10.55	11.55	12.50	3.20	65
St Alban's	8.55	10.45	11.00	12.10	1.20	3.00	70
St Bernadette's	8.50	10.30	10.45	12.00	1.00	3.15	60
St Cadoc's	9.00	10.30	11.45	12.00	1.15	3.15	75
St Cuthbert's	8.55	10.40	11.00	12.00	1.00	3.30	60
St David's	8.55	10.40	10.55	12.00	1.10	3.20	70
St Fagan's	8.55	10.30	10.45	11.45	1.00	3.30	75
St Francis	8.55	10.45	11.00	12.00	1.10	3.00	65
St John Lloyd	8.50	11.00	11.15	11.45	1.00	3.00	75
St Joseph's	8.55	10.30	10.45	12.00	1.25	3.30	85
St Mary's	8.50	10.30	11.15	12.00	1.15	3.30	75
St Mary the Virgin	8.55	10.30	10.45	11.50	12.45	3.30	65
St Monica's	8.55	10.25	11.00	12.00	1.00	3.20	60
St Patrick's	8.55	10.20	11.15	12.00	1.10	3.15	70
St Paul's				12.15	1.00		45
St Peter's	8.55	11.00	11.15	12.00	1.15	3.30	60
St Philip Evans	8.55	11.00	11.20	12.10	1.30	3.30	80
Stacey Road	8.55	10.30	10.45	12.10	1.10	3.00	60
The Hollies	9.00	10.30	10.45	12.00	1.00	3.00	60
Thornhill	9.00	10.20	10.35	12.20	1.20	3.30	60
Ton Yr Ywen	8.55	10.30	11.00	12.00	1.30	3.30	90
Tongwynlais	8.55	10.30	10.45	11.45	12.45	3.30	60
Tredegarville	9.00	10.35	11.00	12.15	1.10	3.00	55
Trelai	8.45	10.15	11.30	11.45	12.45	3.00	60
Trowbridge	9.00	10.30	10.45	12.00	1.00	3.30	60
Ty Gwyn	9.15	10.30	11.00	11.15	12.30	3.15	75
Whitchurch Primary				11.45	1.00		75
Willowbrook	8.55	10.30	10.45	12.00	1.00	3.00	60
Windsor Clive Primary	8.45	10.15	11.30	11.50	1.10	3.00	80

Woodlands	8.45	10.10	10.25	12.05	1.05	3.25	60
Ysgol Bro Eirwg	9.00	10.30	11.00	12.00	1.25	3.15	85
Ysgol Glan Ceubal				12.30	1.00		30
Ysgol Glan Morfa				12.00	12.40		40
Ysgol Melin Gruffydd				11.30	1.00		90
Ysgol Mynydd Bychan				12.00	12.45		45
Ysgol Nant Caerau				12.00	12.30		30
Ysgol Pen y Pil				12.00	1.00		60
Ysgol Pencae	9.00	10.15	10.30	12.15	1.15	3.30	60
Ysgol Pwll Coch	9.00	10.15	10.45	12.05	1.00	3.15	55
Ysgol Treganna	8.55	10.30	10.45	11.45	1.15	3.25	90
Ysgol y Berllan Deg	9.05	10.30	10.45	11.45	1.30	3.30	105
Ysgol y Wern	8.50	1.30	10.50	12.00	1.30	3.20	90
Oakfield	8.55	10.30	11.00	12.00	1.30	3.15	75
Pen Y Bryn	9.00	10.30	11.00	12.00	1.30	3.15	75
Pencaerau	8.55			11.45	12.40	3.00	40
Pentrebane	8.55	10.35	10.50	12.00	1.25	3.30	85
Pentyrch	9.00	10.30	10.45	12.00	1.15	3.40	75
Peter Lea	8.55	10.25	10.45	12.00	1.00	3.15	60
Radnor	8.55	10.20	10.35	12.00	1.15	3.15	75
Radyr Primary	9.00	10.30	11.00	11.45	1.00	3.00	75
Rhiwbina	8.55	10.30	10.45	12.00	1.00	3.35	60
Rhydypenau	8.55	10.40	11.00	12.00	1.00	3.35	60

Appendix 2:

Secondary School lunch-break data by GP cluster with changes over time (Cardiff and Vale of Glamorgan)

1.   Cardiff (Secondary)

Secondary Schools	Morning Break		Lunch Break		Length of Lunch	Changes since 2013 (Report by C&V PH team)
	Start	Finish	Start	Finish	Minutes	
City & Cardiff South						
Cathays	10.55	11.1	12	13	60	**No change in lunch break. Morning break brought forward by 15 mins.**
Cardiff South East						
*Willows High	11	11.15	1.15	1.45	30	**No change**
Cardiff East						
St Illtyd's	10.5	11.1	13.1	13.55	45	**Lunch increased by 10 mins**
St Teilo's Yr 7 & 6th form	11.1	11.4	12.45	13.15	30	**Break and lunch now staggered. Yr 7 have half an hour for break. Lunch reduced to 30 mins for all year groups. Lunch starts later for all year groups.**
St. Teilo's Yr 8, 9, 10, 11	11	11.2	13.15	14.2	30	
Eastern	10.4	11	12.35	13.15	40	**Break time brought forward by 5 minutes. Lunch brought forward by 30 mins and reduced by 20 minutes from 1 hour.**
Cardiff North						
Llanishen	10.55	11.15	12.15	13	45	**Lunch increaed by 5 minutes**
Corpus Christi	11.15	11.3	13.25	14.1	45	**No change**
Ysgol Bro Edern	10.4	10.5	12.45	13.3	45	**Break reduced by 5 mins. No change to lunch time.**
Ysgol Glantaf	11	11.15	13	13.55	55	**Break 15 mins later. No other changes.**
Cardiff West						
Bishop of Llandaff	9.5	10.05	12.05	13	55	**Length of lunchtime stayed the same. Lunch and break brought forward by one hour. Lunch now starts at 12:05**
Radyr	10.5	11.05	12.05	13.05	60	**Break time increased by 5 min. No change in lunch time.**
Whitchurch	11.05	11.2	12.15	13	45	**No change**

Lower	(10.45 Fri)	(11.00 Fri)	(12.00 Fri)	(12.45 Fri)		
Whitchurch Upper	11.05	11.2	12.15	13	45	
	(10.45 Fri)	(11.00 Fri)	(12.00 Fri)	(12.45 Fri)		
Cantonian	10.55	11.15	12.15	13	45	**No change**
Ysgol Plasmawr	10.47	11.02	12.46	13.36	45	**No change**
Cardiff South West						
Michaelston College	11.05	11.25	13.25	13.55	30	**Breaktime increased by 5 mins. No other change. School amalgamated.**
Fitzalan High	10.55	11.1	12.1	12.55	45	**Lunchtime increased by 10 minutes**
Mary Immaculate	11.1	11.25	13.3	14	30	**No change**

2. Vale of Glamorgan (secondary)

Secondary Schools	Morning Break		Lunch Break		Staggered?	Length of Lunch
	Start	Finish	Start	Finish		Minutes
Central Vale						
Barry Comprehensive	10:55	11:20	13:20	13:55	N	00:35
Bryn Hafren	10:50	11:10	13:10	13:50	N	00:40
St Richard Gwyn	11:05	11:20	13:20	13:55	N	00:35
Ysgol Gyfun Bro Morgannwg	10:00	10:15	12:15	13:05	N	00:50
Eastern Vale						
Stanwell (Yr 7)	11:05	11:20	13:05	13:30	Y	00:25
Stanwell (Yr 8)	10:50	11:05	12:35	13:05	Y	00:30
Stanwell (Yr 9)	10:30	10:45	12:35	13:05	Y	00:30
Stanwell (Yr10 and 11)	11:25	11:40	13:30	14:00	Y	00:30
St Cyres (KS 3)	09:45	10:00	12:00	12:40	Y	00:40
St Cyres (KS 4)	10:45	11:00	13:00	13:40	Y	00:40
Western Vale						
Cowbridge (KS 3)	09:55	10:15	12:15	13:15	Y	01:00
Cowbridge (KS 4)	10:55	11:15	13:15	14:15	Y	01:00
Llantwit Major (KS 3)	10:30	10:50	12:10	12:55	Y	00:45
Llantwit Major (KS 4)	10:50	11:10	13:10	13:55	Y	00:45

Appendix 3:

Supporting literature on health and well-being impacts of time available for school lunch-break

1. Childhood Obesity

There have been long-standing concerns about the number of children who are overweight or obese, and the impact this has on health and well-being. Poor diet and lack of physical activity are major contributing factors to the national obesity epidemic (RSPH, 2016). Obesity in children in associated with a number of health conditions including asthma, early puberty, some cancers and skin infections and obese children are twice as likely to develop Type II diabetes (RSPH, 2016).

The latest data from the Health Behaviour in School-aged Children (HBSC) study shows that 15% of secondary-aged girls and 15% of boys are overweight or obese in Cardiff and Vale compared to a Welsh average of 18% (Welsh Government, 2013/14). Similarly, 22.1% of reception aged children in Cardiff and Vale University Health Board (CVUHB) are overweight or obese (PHW/NWIS, 2015). There is a strong correlation between obesity and deprivation (RSPH, 2016).

Schools have a crucial role to play in modifying healthy eating and physical activity due to the large amount of time the majority of children spend in school and the huge influence that schools have on individual behaviours. The Commission on Ending Childhood Obesity was established in 2014 to review, build upon and address gaps in existing mandates and strategies. Recommendations from the Commission on Ending Childhood Obesity (WHO, 2016) in relation to schools include:

- Ensure that adequate facilities are available on school premises and in public spaces for physical activity during recreational time for all children (including those with disabilities), with the provision of gender-friendly spaces where appropriate.
- Eliminate the provision or sale of unhealthy foods, such as sugar-sweetened beverages and energy-dense, nutrient-poor foods, in the school environment

2. Physical activity in schools

Benefits of being physically active during childhood

The benefits to health of a physically active lifestyle are well established and there is growing evidence that a sedentary lifestyle plays a significant role in the onset and progression of chronic disease (Department of Health, 2004). In terms of children's health in the school context, physical activity can promote readiness to learn and help sustain concentration levels; increases pupils' daily activity levels and improves their health; promotes and enhances the development of pupils' physical skills, especially if activities are structured and planned; helps pupils' learn to develop appropriate moral and social behaviour; reduces bullying; gives pupils a break from classroom activities and a chance to let off steam and provides the opportunity to socialize. Research in the UK suggests that moderate physical activity, on a regular basis throughout a child's school career can boost academic performance considerably (Booth et al, 2013). Whilst this study was based on PE lessons, others suggest that the walk to school and break time is equally valid and should be a part of every school's efforts to boost academic achievement (Kohl and Cook, 2013).

Policy context and PA recommendations

Increasing levels of physical activity as a means to prevent childhood obesity has been an important feature of Welsh Government policy and support to schools for many years. The current Physical Activity Action Plan for Wales "Creating an Active Wales" states that the provision of high quality physical education and the effective delivery of physical literacy is essential for children and young people to have the skills and confidence for lifelong participation in sport and physical recreation (Welsh Assembly Government, 2010). A key priority is to ensure access to opportunities for high quality play that is physically active.

Physical literacy[2] empowers children and young people to choose to be physically active in whatever way they prefer, taking away fears of 'having a go' or a lack of motivation that many can suffer from (Sport Wales, 2016). Concerns about physical literacy were highlighted in a report of the Schools and Physical Activity Task and Finish Group who recommend that PE be given the status of a 'core' subject in order to address '…the pivotal and deep-seated concerns around levels of physical activity and the health of our young people in Wales' (Schools and Physical Activity Task and Finish Group, 2013). In September 2014 the Physical Literacy programme for schools started. This programme has taken the place of the old PESS programme and is targeted by working in schools from the most deprived areas in Wales.

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[2] Physical literacy is a terms used to describe the catalogue of technical skills along with the confidence and motivation to take part in different physical activities at every stage in life.

Current guidelines for physical activity for children and young people from the UK Chief Medical Officers recommend moderate to vigorous intensity physical activity for least 60 minutes per day and to minimise the amount of sedentary time (Department of Health, Physical Activity, Health Improvement and Protection**,** 2011). However, many children are not achieving this recommendation across Wales. In 2014, just 19% of boys and 12% girls in Cardiff and the Vale of Glamorgan were physically active for 60 minutes per day every day, the second lowest rate in Wales and with little change since 2004 (Welsh Government, 2013/4). As physical education (PE) in schools contributes to children achieving the recommended levels of physical activity, Welsh Government also recommends that all pupils have at least 120 minutes of physical education per week. However, the national school sport survey 'Hooked On Sport' reveals that in schools within the Cardiff and Vale University Board area, children have on average 96 minutes per week allocated for PE (Sport Wales, 2016) demonstrating a shortfall in curriculum provision.

Physical activity and sedentary behaviour during break and lunchtimes

Alongside the provision of PE during curriculum time, there is a body of evidence highlighting that break and lunch times can also contribute towards a child or young person's daily recommendation for physical activity. For example, research has shown that children can obtain up to one third of their recommended daily moderate to vigorous physical activity during the school break time period (Ridgers et al, 2006). This emphasises the importance of break times as an additional key contributor to the 60 minute per day recommendation. Yet, there is a lack of high quality evidence on factors which influence children's engagement in school break time physical activity (including length of the lunch-break) and therefore definitive, meaningful conclusions cannot be drawn. Ridgers et al (2012) suggest that although break and lunch times provide an important contribution to daily activity level for primary school children, levels of physical activity during break and lunch time decrease as students get older, particularly in the transition from primary to secondary school. Differences in levels of physical activity between girls and boys during break times are also observed, reflecting the more general research in relation to physical activity whereby inequalities exist in participation between the sexes (Bailey et al,2012; Dessing et al, 2013.) More research is therefore needed into the types of sex and age appropriate interventions that are most effective in increasing levels of physical activity during break times at school.

Emerging evidence from Wales demonstrates an association between shorter lunch breaks and higher levels of sedentary time amongst both boys and girls (Morgan et al, 2016). This study linked individual-level, self-reported data gathered from the HBSC study with school-level HBSC data. It found that a longer lunch time duration (≥50 minutes) was associated with less sedentary behaviour among both genders (OR 0.67, 95% CI 0.51-0.89). No significant

effects on levels of physical activity due to shorter lunch breaks were found. The authors conclude that if schools maintain or extend the duration of school lunch breaks, this may have a positive impact on sedentary behaviour through the provision of more time for physical activity.

3. School food provision

Policy context

The poor quality of children's diets and its association with obesity has received increased attention in recent years (e.g. Foresight, 2007). One third of children and young people in Cardiff and Vale University Health Board consume at least one fruit or vegetable portion per day. A similar percentage consumes sweets at least once per day (Welsh Government, 2014).

School food policy has been a key feature of Welsh Government policy over the past decade since the food provided in schools makes an important contribution to the diets of children and young people. Efforts to influence and improve children's diets in the school setting are attractive since there is the capacity to reach large numbers of children simultaneously. The food and drink provided in schools can make a positive contribution towards giving children and young people a healthy balanced diet as well as encouraging them to develop good eating habits. Consuming a nutritious diet during the school day and developing the skills necessary to support healthy eating in the wider environment are critical in helping to reduce diet related health problems like heart disease, diabetes and obesity (Murphy et al, 2011).

The Healthy Eating in Schools (Wales) Measure was passed by the National Assembly in 2009. This places a legal duty on local authorities and governing bodies to promote healthy eating and drinking by pupils in maintained schools. Sections of the Measure relevant to this HIA are displayed in Table 1. The biggest driver for change on school lunch provision in Wales was the Appetite for Life guidance and subsequent legislation which ensures the food offered in school canteens at lunchtime meet the required food and nutritional standards. The Healthy Eating in Schools (Nutritional Standards & Requirements) (Wales) Regulations (2013) place a duty on local authorities and school governing bodies to promote healthy eating in schools. This legislation replaces the Appetite for Life guidelines and imposes requirements and standards for breakfast and lunch in maintained primary and secondary schools.

An important aspect of a whole school approach to healthy eating includes not only the food available within the school, but also the regulation and environment within which this food is available. Students can be discouraged from eating due to poor dining facilities, poor food, long queues and short lunch

breaks (Ofsted, 2007), leading them to purchase lunch from competing local outlet such as chip shops, fast-food vans and supermarkets (WAG, 2007). The Child's Obesity Strategy (RSPH, 2016) reports that 1 in 4 young people (24.6%) have ordered a takeaway to their school and over one third (41.7%) of young people can walk from their school to somewhere selling unhealthy food and drink in under 2 minutes. There is therefore a risk that despite good progress in terms of school food standards, that the popularity and ease of access to fast food near schools may undermine these efforts (RSPH, 2016). The Child's Obesity Strategy (which examines how young people would solve the childhood obesity crisis) states that we need to ensure that access to foods high in fat and sugar is made more difficult for children and young people. Alongside a range of measures including improvements in food labeling, the promotion of healthier options and activities during school and leisure time, the strategy calls for restricting access to fast food takeaways whilst children and young people are school.

Table 1: Summary of relevant sections of "Healthy eating in maintained schools: Statutory guidance for local authorities and governing bodies".

	Extract from Statutory guidance document relevant to the HIA
Section 1: Promoting healthy eating and drinking by pupils in maintained schools	The Measure requires local authorities and governing bodies to take action to promote healthy eating and drinking by pupils in maintained schools. Appropriate action under this section includes "Promoting the take-up of school meals is an important part of the whole school approach to healthy eating". In promoting healthy eating and drinking, schools should consider a range of actions including: • how to persuade children and young people to eat lunch at lunchtime instead of during breaks. • lunchtime time allocation and social interaction of eating a meal
Section 2: Governors' reports	This section of the Measure requires governing bodies of maintained schools to include in their annual report, information about the action taken to promote healthy eating and drinking by pupils at the school. This information will feed into Estyn's reporting cycle and be available to parents and carers of pupils.
Section 6: Promotion of meals in schools and other educational establishments	This section of the Measure requires local authorities and governing bodies that provide school meals or milk to encourage take-up, and take reasonable steps to ensure every pupil entitled to receive school meals and milk free of charge does receive them. School governing bodies should encourage the take-up of school meals in general, particularly the take-up of free school meals (FSM), and encourage pupils who are registered for FSM to take up their

	entitlement. Queuing has been found to affect the uptake of FSM. Schools/head teachers have been asked to think about (amongst other matters): • ways to shorten queues • making queues and routines associated with queuing less stressful • ensuring children and young people have enough time to sit and eat at lunch times • having pre-ordering systems operating at break times to help reduce queues

The free school breakfast scheme has demonstrated how children's nutritional intake can be improved in the school setting (Murphy et al, 2011). Such initiatives show how manipulating the school environment can be an efficient means of improving the health of the population by addressing inequalities and improving educational attainment (Bellisle, 2004).

Lunch arrangements in schools in Wales

Lunch arrangements in secondary schools in Wales follow those found throughout the UK (Townsend, 2013). Meals are generally served as a canteen style service with a cash cafeteria service offered from one or more outlets, although students may bring food from home (Harper et al, 2008). About 45% of students use the school meals service, usually provided by the Local Authority's in-house service or through the school's own private contractor. After school lunches, the next most popular option is for students to bring a packed lunch to school. As well as school lunches and packed lunches, some students buy snacks from school outlets including at morning break, some leave school to buy food from outlets off-site, while a minority return home for lunch. For most schools, lunch doubles up as an afternoon break and students are expected to return for lessons afterwards. In schools with short lunch breaks students are less likely to eat a school meal, instead they may take part in social activities, leave the school grounds to buy foods, buy lunch at morning break or choose to bring in a packed lunch (Estyn, 2008). Few packed lunches meet the school meal standards, with around 50% found to contain a serving of fruit, less than one-fifth contain a serving of vegetables, more than 80% offer a restricted snack (crisps and confectionary) and over 60% contain a sweetened drink (Evans et al, 2010).

Impact of school lunch length and timing on food consumed

Few studies have explored the impact of school lunch breaks length on student dietary choice. Some qualitative data suggest the amount of time allowed for lunch does affect what students choose to eat (WAG, 2007 and Estyn, 2008). For instance, secondary pupils with a lunchtime of 45 min or less report being less likely to eat a meal, which has shown to be associated with poorer food choices and lower levels of energy and nutrient intake at lunchtime (Nicholas et al, 2013).

The findings of a large cross-sectional national survey in Wales suggest that shorter lunch breaks discourage the consumption of fruit and vegetables by students (Townsend, 2013). The results from this study demonstrate that students were less likely to eat unhealthy foods on a daily basis if the lunch break was longer. It concluded that lunch-break length is an area schools should consider to encourage healthy eating.

US studies have also explored the amount of time to eat and the association with children's selection and consumption of food. Studies report that insufficient time to eat leads to reduced consumption (Cohen et al, 2016) and increased speed of eating puts children at risk of losing control over food intake, and in many cases over eating (Zanadian et al, 2012). A further US based study indicates that a short lunch break increases a child's BMI and probability of being overweight (Bhaat, 2009).

Some US studies have considered the timing of lunch and whether food consumption (and food waste) is affected by having a break / play opportunity prior to sitting down to eat lunch. There is some evidence that healthy food consumption and amount of food waste is improved when a break is taken prior to lunch however the quality of studies is generally poor due to small sample sizes (Hunsberger, 2014; Bergman et al, 2004; Rainville, Wolf & Carr, 2006; Price & Just, 2014).

4. **The importance of play opportunities in school**

Play is fundamental to children and young people's quality of life and is recognised in the United Nation's Convention on the Rights of the Child (UNCRC). As part of the Welsh Government's responsibility for implementing the UNCRC, there are various policies and guidance relating to the importance of play opportunities.

The benefits of play to the children and young people participating are widely acknowledged (NCB, 2010), There is an excellent body of research evidence that supports the benefits of play defined as 'free' or 'unstructured' play i.e. that which is not under the direct control of adults during the school day including

social skills, coping strategies and reducing social exclusion (NCB, 2010). Positive impacts on physical literacy and physical health whereby studies have found higher physical activity levels associated with longer break times (Ridgers et al, 2007). This is particularly important for girls who are more likely to participate in more informal physical activity during break times rather than physical education lessons (Kirby, 2013).

Blatchford and Baines (2006) highlight the benefits of break and lunch times for social development where children develop friendships and social networks with peers and participate in social and play activities that they initiate and organise themselves. The authors affirm break times as first and foremost a social event. They go on to state that that the social value of break times is often overlooked, but is increasingly important at a time of marked decline in children's independence of movement and choice of activities. Break times for adolescents in particular provide opportunities for social interaction without direct adult supervision and an element of 'free play'. Around a quarter of children reported in 2006 that they rarely saw friends outside school, highlighting the importance of opportunities to interact freely with friends in school. Gray (2011) suggests that the opportunity to risk take (in a social contexts as well as physically) allows children to learn to manage their emotions and 'try out' new ways of interacting with others. Playgrounds therefore offer deep learning in a social context. Children learn how to communicate, negotiate, share and develop their coping skills.

There is evidence to suggest that reducing free play outdoors, is a significant factor in the decrease in children's mental well-being (Gray, 2011; Nuffield Foundation, 2013). One in ten children are affected by mental health issues such as depression and anxiety and this increases in adolescent years (Young Minds, 2013). Children can benefit from physically active play in terms of their mental health and stress reduction (Creswell et al, 2005). Furthermore, access to green space and physical activity which are available during break times are inextricably linked with positive mental health (Kaplan, 1989).

Several studies also positively associate what children do at playtime with learning in the classroom, for example Hill et al (2010) confirm that physical exercise benefits cognitive performance in the classroom.

Despite the many benefits of play, many schools have reduced the time available for play or break time in schools (Blatchford & Baines, 2006). Barriers to play including lack of space, geographical restrictions, physical barriers, 'out of bounds' areas and 'bans' on certain types of movements - are all significant factors in the drop in measured physical activity and play that occurs in schools (NCB, 2010).

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Appendix 4

Health Impact Assessment Appraisal Tool

Lifestyles		Vulnerable Groups / Distribution
Positive	Negative	
Social and Community Influences on health		Vulnerable Groups / Distribution
Positive	Negative	
Living and environmental conditions affecting health		Vulnerable Groups / Distribution
Positive	Negative	

Economic conditions affecting health		Vulnerable Groups / Distribution
Positive	Negative	
Access and quality of services		Vulnerable Groups / Distribution
Positive	Negative	
Macro-economic, environmental and sustainability factors		Vulnerable Groups / Distribution
Positive	Negative	

Do any additional actions need to be taken as a result of this HIA process? Yes/No

If Yes, please outline (list recommendations and/or mitigation/enhancement here)

Mitigating actions for all partners to undertake

Appendix 5: Additional workshop discussion notes

Social value of lunchtimes:
- Some schools are penalising pupils not wearing correct uniform e.g. trainers, by sending them to the back of the lunch queue. It was felt that depriving a pupil of the opportunity to eat lunch should not be the punishment for a completely separate issue of incorrect uniform.
- The whole mealtime eating experience needs to be recognised and valued broadly across multiple departments and services such as Estyn, Welsh Government, schools, and department within the local authorities.

Enforcement of Legislation:
- Legislation in relation to school lunch breaks (i.e. Appetite for Life now legislated under the Healthy Eating in Schools Measure) is not monitored or enforced. Estyn have removed healthy eating and compliance to the Healthy Eating in Schools Measure legislation from their inspection criteria.
- WG and LA should emphasise the importance of the Healthy Eating in Schools Measure- it needs to come from the top down. Influence is needed at policy and inspection levels.

Funding/resource risks:
- Concerns that AFL funding has now gone into the LA council funding (and is not ring-fenced). The pupil deprivation grant is awarded based on FSM allocation, but this budget has also not been ring-fenced, so gets absorbed into the larger pot. Appetite for Life Co-ordinators for each local authority are no longer in post. Furthermore, free school breakfast money now goes straight to schools rather than being dispensed by WG.Dietetics have reduced support for SNAGs now

Facilities available during lunch times:
- School halls are often multi-purpose and need to be cleared away quickly ready for the next activity.
- Radyr Comp- each year group have their own common room where they can eat their lunch. This improves lunchtime experience and gives them somewhere to go and socialise.
- Sometimes the issues are more about the environment and facilities at lunch time, rather than the length or timing.

Link with other initiatives e.g. Eco-schools
- Explore further links to eco-schools e.g. If litter is a concern during longer lunch breaks, eco-committees can help to address this