

Public health nutrition policy in organised settings for children aged 0-12:

An overview of policy, knowledge and interventions



A report to the Eat Well Victoria Partnership
prepared
by
Meg Montague

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Please note that this document is a report to the Eat Well Victoria Partnership and does not necessarily reflect the views of member organisations

Table of Contents

INTRODUCTION	1
1. THE CONTEXT	2
1.1 Evidence on eating behaviour of children	2
1.2 Evidence on rising childhood obesity rates	2
1.3 Indications of rising rates of Type 2 diabetes in children	3
1.4 The relationship between nutrition and lifelong health	4
1.5 The key influences on children's nutrition	4
1.5.1 The family and home environment	4
1.5.2 The educational and care environment	6
1.5.3 The broad community environment	7
1.6 The economic costs of poor nutrition	7
1.7 A broad overview of public health nutrition policy	8
2. THE EFFECTIVENESS OF PUBLIC HEALTH NUTRITION INTERVENTIONS	10
2.1 Are interventions effective in the area of childhood obesity?	10
2.2 Are nutrition interventions in preschool settings effective?	10
2.3 Are nutrition related interventions in primary school settings effective?	12
2.4 What gaps do we have in our knowledge?	12
2.5 Are nutrition interventions cost effective?	13
2.6 What outcomes can be expected from nutrition interventions?	13
2.6.1 Potential social behavioural outcomes	14
2.6.2 Potential structural or institutional outcomes	14
2.6.3 Potential epidemiological outcomes	14
2.7 What can be learnt from other broad based public health initiatives?	14
3. ORGANISED SETTINGS FOR 0-12 YEAR-OLDS	16
3.1 Critical aspects of organised settings	16
3.2 Preschool settings for 0-5 year olds	18
3.2.1 Size of the preschool sector	18
3.2.2 Current nutrition policy development and implementation	19
3.2.3 Current resource and training development	21
3.2.3 The key stakeholders	22

3.2.4	Opportunities and barriers in nutrition policy development and implementation in preschool settings	23
3.3	Primary school settings for 5 to 12 year olds	27
3.3.1	Size of the primary school sector	27
3.3.2	Current nutrition policy development and implementation	27
3.3.3	Current state of resource and training development	30
3.3.4	The key stakeholders	31
3.3.5	Opportunities and barriers in nutrition policy development and implementation in primary school settings	31
3.4	Out of school hours care settings for 5 to 12 year olds	35
3.4.1	Size of the out of school hours sector	35
3.4.2	Current nutrition policy development and implementation	35
3.4.3	Current state of resource and training development	36
3.4.4	The key stakeholders	36
3.4.5	Opportunities and barriers in nutrition policy development and implementation in out of school hours care settings	37
4.	CONCLUSION	39
4.1	Assessment of the proposed settings	39
4.2	Summary	40
	APPENDIX I PROJECT BRIEF	41
	APPENDIX II MAJOR POLICY AND PROGRAM INITIATIVES IN NUTRITION IN AUSTRALIA AND IN VICTORIA 1981 TO 2001	43
	REFERENCES	46

Introduction

In 2001, the Victorian Department of Human Services established the Eat Well Victoria Partnership, with a membership of key public health nutrition stakeholders from government, non-government and academic organisations. The Partnership provides advice to the Director of Public Health and aims to contribute “to the improvement in the capacity and infrastructure for effective public health nutrition interventions across Victoria.” (EWVP Terms of Reference).

The EWVP has recently developed a 2-3 year action plan, the first priority of which is to develop a rationale to advocate for and support the development and adoption of public health nutrition policy in organised settings for children 0-12. To achieve this the Victorian Health Promotion Foundation provided project funds to be administered through the National Heart Foundation of Australia (Victorian Division) to undertake a *Public Health Nutrition Policy Analysis Project* (see Project Brief in Appendix 1).

This paper represents the results of the first stage of this project and reports on “the current Victorian situation relating to organised settings for children and the opportunity and the potential benefits from enhanced/new public health nutrition policy” (Project Brief). The paper is based on research and analysis in three areas;

1. the identification of potential settings where activities could be undertaken to support the development or enhancement of public health nutrition policy,
2. an analysis of existing nutrition related policy and its capacity to contribute to public health nutrition outcomes, and
3. an identification of public health nutrition gains that could be achieved through improved public health nutrition policy and related activities (eg physical activity and food safety) across age groups and settings.

The paper consists of four sections. The first briefly sets the context for a focus on children’s nutrition. The second identifies what is known about interventions in relation to children’s nutrition. The third section considers organised settings for 0 to 12 years olds as sites for policy development and implementation. The fourth and final section gives an overview of the potential opportunities for public health nutrition policy in the identified settings, and some discussion of priorities that the Partnership may wish to use to identify the settings on which to focus in phases 2 and 3 of the project.

It should be noted that in this paper “nutrition policy” as discussed in relation to organised children’s settings is defined in the following manner.

Firstly, policy involves the development of a statement of overall purpose and commitment around healthy nutrition in relation to three key areas: 1) nutrition education in the setting, 2) the provision or supervision of food service in the setting, and 3) the use of training and resources to support nutrition education and food service.

Secondly, policy involves the development of strategies and possibly guidelines to drive the implementation of this commitment across the three areas of education, food service and training and resources.

1. The context

1.1 Evidence on eating behaviour of children

The national nutrition surveys of 1985 and 1995 suggest some worrying information about children's nutrition and eating habits. The 1995 survey reports that generally children consumed higher than recommended levels of saturated fats, and more sugar than starch (the reverse of adults), that the intake of calcium, fruit and vegetables by Australian children, and of iron by girls, fell below levels recommended in the National Health and Medical Research Council's *Guidelines for healthy eating in children and adolescents* (NHMRC 1995) and the *Australian guide to healthy eating* (Smith et al 1998). The total fat consumed as a percentage of energy was around 33%, a little lower than the 35% suggested by the NHMRC guidelines.

One quarter of children and adolescents did not eat fruit on the day before the 1995 survey, (among 8-11 year olds a mere 56% of boys and 62% of girls ate fruit on that day) while about one in four of older children ate no vegetables (McLennan & Podger 1997). The minimum number of serves of calcium rich foods was not achieved by any age group, (MJA 2000).

Overall in 1995, less than half the children and adolescents surveyed met fruit intake recommendations and only one third met vegetable intake recommendations (Mather et al 2001). Examination of data from the 1985 and 1995 national nutrition surveys suggests, (with a cautionary note sounded by virtue of various methodological differences that limit comparison between the two surveys), that fruit and vegetable consumption by young Australians appears to have declined since 1985 (Magarey et al 2001).

1.2 Evidence on rising childhood obesity rates

In many developed countries, there have been alarming reports of increasing prevalence of obesity in children. This is usually attributed to a combination of dietary factors, increased physical inactivity especially TV watching, and decreased physical activity. In May 2000, the International Obesity Task Force published standard definitions for overweight and obesity in children based on a compilation of nationally representative cross-sectional growth studies from six countries. This has enabled comparison of Australian and overseas data with greater confidence than previously.

Using the new definitions, a recent reassessment of Australian data from the 1985 Australian Health and Fitness Survey and the 1995 National Nutrition Survey suggests that the risks of both overweight and obesity in Australian children in 1995 are significantly higher than in 1985, and the increase in prevalence is also higher than previously reported (Magarey et al 2001).

In 1985, the prevalence rate for overweight or obesity was 10.7% for boys and 11.8% for girls, with 1.4% of boys and 1.2% of girls being obese. Ten years later in 1995, depending on age, 13.4%-26.1% of boys and 18.9%-23.5% of girls aged between two years and eighteen years were overweight or obese. Prevalence peaked at 12-15 years

for boys and 7-11 years for girls. The 1995 prevalence of obesity alone was 2.4%-6.8% in boys and 4.2%-6.3% in girls, however, within any age group, there was no difference in relative risk of obesity between girls and boys. Thus in the ten years 1985 to 1995, the prevalence of overweight in children 7-15 years increased almost twofold, while that of obesity more than tripled.

An analysis of data on Victorian primary school children from the same 1985 survey and the 1997 Health of Young Victorians Study demonstrated that Victorian children are “taller, heavier and more adipose in 1997 than in 1985” with increases in BMI being most marked at the heavier end of the distribution, (Lazarus et al 2000).

Overall, Australian prevalence rates are slightly higher than in the UK, and lower than comparable rates in the US. In the UK obesity prevalence has increased between 2 and 2.8 fold over the last decade, with prevalence rates being estimated at between 11% in 6 year olds to 17% in 15 year olds (Reilly 1999). In the US, rates have increased 2.3 to 3.3 fold over 25 years (Ebbeling et al 2002). However, Magarey et al (2001) suggest that, there is no room for complacency in Australia as there are indications that there is greater prevalence of overweight and obesity among Australian as compared to US children aged 2-5 years, and similar prevalence in 12-14 year old boys and 9-11 year old girls.

In both the UK and the US, there is an indication of increased obesity prevalence with increased age, with increased social deprivation, and with certain ethnic attachment, but there is little notable difference in obesity risk between boys and girls (Reilly et al 2002; Lynch 2000). What evidence we have in Australia suggests similar conclusions. Comparison of recent data on children in Sydney with the 1985 Australian Council on Health, Physical Education and Recreation survey concluded that body mass index (BMI) is strongly related to ethnicity and age (but not gender), with children with a Mediterranean background having highest levels (Lynch et al 2000).

1.3 Indications of rising rates of Type 2 diabetes in children

Type 2 diabetes, which is usually only seen in adults, is being increasingly reported in children in the US, UK and other countries (AIHW 2002). The emergence of Type 2 in children has been linked to lifestyle factors such as lack of physical activity and obesity, “although the incidence and prevalence of Type 2 diabetes in Australian children are not known, they can be expected to increase over the next decade.” (AIHW 2002:165).

Concern is being expressed at this apparent increase because of the known associations between diabetes, obesity, dyslipidaemia (abnormal cholesterol and other blood fats), hypertension, cardiovascular and renal disease, (AusDiab 2001:3) and the significant costs to the national health budget of these complications.

Diabetes is now acknowledged as a major public health challenge in Australia with almost one in four Australians 25 years and over either having diabetes or a condition of impaired glucose metabolism, and the number of Australians with diabetes trebling since 1981 (AusDiab 2001).

1.4 The relationship between nutrition and lifelong health

Nutrition is closely linked to early childhood growth and development, disease prevention and lifelong health. Breastfeeding is clearly an important element in early nutrition, while the consumption of adequate levels of calcium and iron are critical in young children. Evidence indicates that childhood nutrition is linked to adult disease, particularly in relation to cardiovascular diseases and diabetes (SIGNAL 2001)

The Australian Institute of Health and Welfare (AIHW 2002:273) reports that the inadequate consumption of fruit and vegetables by Australia's young people should be taken seriously as a public health issues. Low intake of fruit and vegetables is calculated as responsible for 2.7% of the total burden of disease among Australians, with most of this burden (75%) due to cancer, and much of the remaining burden relating to heart disease and stroke.

In particular the relationship between childhood obesity and future poor health is becoming of increasing concern in many parts of the world. (WHO 1997, Dietz 1998, Freedman et al 1999, Ebbeling et al 2002). As these links between diet and other serious public health concerns such as cancer are increasingly understood, as childhood obesity rates rise, as Type 2 diabetes emerges more and more frequently in children and adolescents, it has become imperative to address nutrition issues at a very early stage in people's lives.

1.5 The key influences on children's nutrition

It is generally assumed that the three main influences on the acquisition of dietary habits and the establishment of eating behaviour lie within three key environments; the family and home environment, the educational and care environment and the broad community environment. There is however, a dearth of clear evidence as to the various components and relative weighting of different influences on children's eating behaviour. Public health and clinical interventions to influence nutrition and eating behaviour have tended to focus on the family, preschools and schools, with limited efforts at achieving broader community change. What we do know is summarised below.

1.5.1 The family and home environment

The family environment may have a critical influence on the establishment of food preferences and eating habits, but the extent to which these preferences and habits are carried into adulthood is not well understood. In a recent review of relevant literature, Campbell and Crawford (2001) suggest that there is some evidence to support the notion that eating patterns acquired in childhood are maintained through into adulthood, and that a number of aspects of the family environment are involved, though the actual role of each aspect remains unclear. The authors also caution that the evidence is based largely on small scale and largely unrepresentative US studies.

With these caveats, it does appear that the following aspects of the family environment may influence children's eating behaviour.

- *Children's food exposure* which appears to be mediated through
- *Parental food preferences*, knowledge, values and beliefs about food,

- *Role modelling* by parents (particularly the mother), peers or siblings,
- *Child-parent interactions around food* including, parents restricting food seen as undesirable, using food as a reward, or promoting certain foods as treats for special occasions, and
- *Parenting style* has been shown to have an influence on children's eating behaviour, for example strong parental control over eating situations, or pleasant interactions in eating situations. Mother's dieting behaviour and her perception of her daughter's risk of being overweight also had an influence on the daughter's eating habits and relative weight.

Some of these aspects of the family environment are influenced by factors such as poverty, disadvantage, educational and occupational status.

- *Parental occupational, educational and socio-economic status* may be associated with overweight and obesity, and nutrient intake and food choices in children (Margarey & Boulton 1997). Overweight and obesity are known to be associated with lower educational levels in women, lower occupational status in men and women, and with socially and economically disadvantaged backgrounds in adolescent girls. Some Australian studies of children and adolescents have shown that the intake of some nutrients and choice of food items varies according to socio-economic status. Children from lower socio-economic backgrounds are likely to consume diets of poorer nutritional quality than those from higher socio-economic backgrounds.
- *Issues around food insecurity* where families may not have access to sufficient food for a healthy and active life because of poverty, location or a lack of culturally and socially acceptable food, or a combination of these factors (Booth & Smith 2001).

Ebbeling et al (2002) reviewed research (again largely American) and identified a number of aspects of the family environment that may have an impact on obesity in children.

- *Genetic factors* are likely to have an impact on a proportion of children's obesity. This may be associated with single gene defects such as those present in the Prader-Willi, Bardet-Biedl, Cohen and Alstrom syndromes, or more commonly, as the result of a complex interaction of at least 250 obesity-associated genes and perhaps perinatal factors (Ebbeling et al 2002:475).
- *Perinatal effects* such as maternal obesity, under-nutrition or over-nutrition in utero, bottle as opposed to breastfeeding may have a lifelong effect.
- *Television or video watching* habits involving long hours of sedentary activity appear to be a component. Television viewing is thought to promote weight gain not only by displacing physical activity, but also by increasing energy intake (Robinson 1998, Epstein et al 2002). Children seem to consume excessive amounts of energy dense food while watching television, and their exposure to television

advertising (mainly of fast food, soft drinks, sweets and sugar sweetened cereal) appears to affect dietary patterns at other times of the day. Television viewing during mealtimes is inversely associated with consumption of products not typically advertised such as fruits and vegetable (Coon et al 2001). Decreasing television, videotape and video game use has been shown to result in decreases in BMI (Robinson 1999).

- *Eating out and fast food*: changing patterns of family food preparation and rising rates of families eating out in restaurants and purchasing take-away or fast food, is associated with the consumption of more energy dense food (Zoumas-Morse et al 2001, and references cited in Ebbeling 2002: 476).
- *Parental social support* appears to play a role in childhood obesity. Parental support correlates strongly with participation in physical activity (Sallis et al 2000), and children who suffer from neglect are at substantially higher risk of obesity during childhood and later in life (Lissau & Sorenson 1994).

1.5.2 The educational and care environment

Preschool and school environments have been the principal focus of nutrition interventions, based on the presumption that these are key sites for the acquisition of dietary knowledge and habits, as well as being places where children actually consume a significant proportion of their daily food intake. Guidelines in Australia regarding recommended dietary intakes (RDIs) in long day care settings vary from between 50% to 70%. Victoria does not have a specified level.

Two studies in NSW, where the Health Department recommended level is 50% of RDI, found that children's consumption was generally in line with the recommendations except in relation to energy, calcium, zinc and iron (Gelissen et al 1992) and thiamine, riboflavin, sodium, calcium, iron and zinc (Landers et al 1994).

A more recent WA study (Soanes et al 2001) where levels are of 50 to 67% of the RDI, reports that children in long day care consumed less than recommended levels of iron, calcium, zinc and energy nutrients. This study compared children in long day care and at home and on this basis suggests that RDI in long day care should actually be set at 50% rather than the higher levels many states specify. Recommendations about RDI for children attending school and research to gauge dietary intake in that setting have not been located.

The key factors that affect nutrition in care and educational environments appear to be:

- *The existence of a specific policy* or set of rules within the setting around nutrition education, food service and nutrition resources.
- *The formal curriculum* based education that the children receive about nutrition and healthy eating
- *The food* that is available in the setting, either provided or available for purchase.

- *The availability and promotion of physical education as an integral part of the curriculum.*
- *The knowledge, attitudes and practices of the staff involved.*
- *The role of the parents in the setting and their involvement in food and nutrition issues.*

1.5.3 The broad community environment

There are a number of aspects of the broader community environment that may potentially have an influence on children's diet and eating habits. However, research to assess the nature and extent of this influence is relatively rare. For example, there have been few systematic studies to ascertain the effectiveness of public health educational messages, the impact of commercial advertising on food choices, the availability and cost of food.

The key aspects appear to include:

- *The massive injections of funds into the marketing, particularly on television (Hill & Radimer 1997, Morton & McDermott 1997), of foods and drinks that are generally high fat, high sugar foods. Much of this advertising is specifically focussed on children and their parents, and there is only a limited amount of advertising from the fresh fruits and vegetable industry and the public health sector to counteract this. Australia is said to have one of the highest levels of food advertising during children's television viewing times, that is programs rated C or G and shown in the mornings and afternoons (Hill & Radimer 1997, PHA 2002).*
- *The size of the fast food industry, an industry that largely has children and families in its sights. According to a 2001 survey released by the economic research firm BIS Shrapnel, Australians spent \$6.35 billion on fast food and takeaways in the year 2000.*
- *Increasingly sedentary lifestyles, the dominance of the car, urban design and fears for children's safety are all believed to be placing limits on the extent to which children engage in out of doors physical activity, for example by walking or cycling to school, or playing in the street or the park, (Baur 1998, Baur 2001).*
- *The price and availability of fresh fruits and vegetables in some areas (Booth & Smith 2001) can limit the capacity of families on low incomes or in rural and remote areas to purchase healthy food at prices they can afford.*
- *Lack of access to affordable, or culturally or socially appropriate food. Certain groups in the community may have difficulty in purchasing healthy food, for example, Australians living in poverty or experiencing homelessness, recent immigrants who cannot afford or find access to familiar foods (Booth & Smith 2001:152).*

1.6 The economic costs of poor nutrition

The direct cost economic of poor diet to the Australian health care system has been estimated by the AIHW to be in the order of \$1.5 billion per year. This increases to

\$2.2 billion when indirect costs such as low productivity are included, (Lester 1994; Mathers et al 1999).

With a narrower focus on obesity, the AIHW and the Centre for Health Program Evaluation estimated the economic cost of obesity-related disease using the 1989-90 morbidity and mortality data. The direct cost of obesity was estimated to be \$510 million (1992-93 dollars). Treatment of obesity-related coronary heart disease and hypertension contributed about 60% of this. Indirect costs associated with worker absenteeism and premature death accounted for an additional \$272 million (1989-90 dollars) (NHMRC 1997:87). This is probably a very conservative estimate as only a narrow range of diseases was included in the analysis, and in addition, the figures are now over ten years old and are likely to have increased significantly.

1.7 A broad overview of public health nutrition policy

The last twenty years have seen a variety of initiatives in the field of public health nutrition. Appendix II summarises the major policy and program initiatives over the past twenty years in Victoria and in Australia in an effort to give a broad overview of what has occurred over this period.

Articulated public health nutrition policy and frameworks for implementation are currently in place at the state and national level, plus a range of consultative or advisory bodies. Looking back over the last twenty years, a large amount of effort has gone into public health nutrition, yet it seems that we have not seen the sustained and measurable gains that could have been expected, and that have been achieved in other public health areas such as smoking.

On a broad policy level, there have been two national nutrition surveys (1985 and 1995), the development of national dietary guidelines for children and adolescents (1995) and a guide to healthy eating for nutrition educators (1998), a national nutrition education in schools project (1992-1995). The Strategic Intergovernmental Nutrition Alliance (SIGNAL) is currently overseeing the national strategic framework for public health nutrition.

In the 1980s, Victoria was in the forefront of public health nutrition policy and program development, with initiatives such as the Food and Nutrition Policy in 1987, and the work of the Food and Nutrition Project from 1982/3 to 1995/6, (Crotty 1987, Powles et al 1992). Since the early 1990s, Victoria appears to have lost momentum in terms of public health nutrition. A summary of the activity since this period suggests that much of the effort has been fragmented with little coherence or co-ordination, and limited capacity to build on successful achievements (Woods 2000).

Very briefly, public health nutrition activity has tended to be:

- *Fragmented* with a lack of co-ordination or coherence and a wide range of initiatives that are diffuse and do not necessarily build upon one another.
- *Project based* rather than part of a broad strategic approach.
- *Lacking in consistent leadership*, with a variety of players with varying degrees of co-ordination.

- *Lacking in continuity and sustainable effort* over time.
- *Unable to build on best practice* as identified through rigorous evaluation or research.
- *Lacking in accessible documentation or evaluation.* Where evaluation has been conducted this has largely been process in nature rather than focussing on impact or outcome and measured against adequate baseline data.

The current climate in Victoria is of determination to overcome these barriers and to place co-ordinated, coherent, sustained public health nutrition high on the agenda.

2. The effectiveness of public health nutrition interventions

This section relies heavily on work done by others who have undertaken reviews of interventions in three key areas; the prevention and/or treatment of childhood obesity, the reduction of cancer risk by achieving dietary modification in children, and the promotion of healthy eating in children 0-15 years.

2.1 Are interventions effective in the area of childhood obesity?

The overall conclusions of reviewers in this field seem to be there is limited high quality data on the effectiveness of obesity prevention programs and no generalisable conclusions can be drawn (Campbell et al 2002, Reilly et al 2002, Ebbeling et al 2002). Some small impact can be achieved on children's eating and physical activity patterns, (Huon et al 1999, Gortmaker et al 1999, Sahota et al 2001) but decreases in BMI in children are difficult to achieve and to sustain in either family focussed, preschool or school based interventions.

There are some indications that obesity prevention interventions that narrowly focus on individual and family behaviour change tend to be less effective than school based interventions that are multi-focused (Ebbeling et al 2002, Reilly et al 2002, Micucci et al 2002), particularly those that focus on diet, food availability, physical inactivity (such as reduced TV watching), physical activity and school curricula, as well as family and community involvement.

Some short-term intense programs are reported as being effective in terms of weight loss but there are doubts about sustainability. Ebbeling (2002) suggests that these interventions have tended to focus on highly motivated families through specialist clinics. Interventions that are sustained over longer periods with a focus on a healthy lifestyle rather than on weight change appear to be more efficacious.

A note of caution needs to be sounded in relation to this summary in that we still have to rely on predominantly US studies and we should be wary of making too many assumptions about the Australian context on the basis of these studies.

2.2 Are nutrition interventions in preschool settings effective?

A study of healthy eating programs for children aged 0-15 is currently being completed by Deakin University with funds from DHS, however, the results are not yet publicly available. The discussion in this and the following section is based on the overheads from a symposium on children's healthy eating under the auspices of Deakin University, DHS and DHA to discuss emerging results (Worsley et al June 2002) and a brief article reporting on the project in Food Chain (Worsley et al August 2002).

There have been relatively few interventions focussing on healthy eating in children in their preschool years (Worsley et al Aug & June 2002). Some powerful methods have been tested including adult modelling of food behaviours, positive reinforcement, use of group influence and sensory experience of foods, and most of the studies involved education of mothers and childcare centre staff. The authors

suggest this is a promising area requiring more intensive research but there are indications that interventions aimed at creating healthy eating habits in infants can be effective.

In looking for research that could inform us about the capacity of policy related interventions to affect healthy eating in the preschool sector, a number of Australian studies designed to improve the nutritional adequacy of food provided in childcare centres were identified. The Caring for Children Project in NSW in the early 1990s revolved around the development and distribution of a nutrition resource book for childcare staff. The evaluation of the pilot suggested that the resource plus training for cooks and child care staff resulted in improved nutritional content of food in centres. However, when subsequently implemented across NSW, evaluation results were inconclusive (Matthews & Williams 1995).

A statewide needs analysis in Tasmania in 1997 (Allan 1998) identified the need to develop model food and nutrition policy for childcare centres and to review policy development and implementation procedures. This was followed by a very small pilot project that involved two centres, (Allan & Bradley 2000) which demonstrated that policy development and implementation could be significantly improved. A number of strategies were used including review of food and nutrition policy and practices, and trialing ways to involve staff, parents and children in a comprehensive food and nutrition education program. Impact evaluation found that centres rated their new nutrition policy as having improved the food and nutrition program in the centre. It also found that as a result, staff and parents had a heightened awareness of the importance of nutrition and food related activities, and improved knowledge and confidence in nutrition.

This small study together with the results from evaluations of two larger initiatives seem to indicate that multi-strategy interventions incorporating policy development, as well as training and resource provision appear to be more effective than single strategy interventions. The Good Food for Children project in NSW (Sangster et al 1999) and the Start Right-Eat Right award scheme in WA (Pollard et al 2001) both resulted in improvements in the quality of food service in childcare centres. These projects both involved the development of nutrition policy, menu assessment, as well as resource provision and training and support for childcare staff and cooks. The NSW study also included the provision of nutrition information for parents.

Pollard et al describe the success of the WA scheme as based on four factors: an understanding of the child care industry, collaboration between the industry and state and federal governments in terms of standards, guidelines and requirements, the provision of resources to support the scheme and of incentives for centres to register in the scheme and to seek accreditation. Both the WA and the NSW studies suggest that sustainability of the improvements in childcare centre food service will depend on the maintenance of the intervention beyond pilot or project phase.

Data from the National Childcare Accreditation Council about the extent to which childcare programs Australia-wide have adopted nutrition policy and have met quality assurance indicators in meal provision will not be available for approximately 18 months (see discussion in section 3.2.2 below).

2.3 Are nutrition related interventions in primary school settings effective?

Worsley et al report that there have been many studies of interventions geared towards primary school age children and more than half were effective in changing children's eating behaviour, some having sustained the effect over 12 months. There is some evidence that family involvement, food service inclusion and linkage to the curriculum has a positive impact on effectiveness.

The authors suggest that longer-term studies of interventions are necessary to evaluate the effects on later in life intake of fruits, vegetables and cereal grain. They also comment that there seems a tendency to focus on organised settings rather than on the community broadly and on family settings, that the interventions tend to be behavioural in nature with little focus on policy development and implementation, that parents tend to be missing from interventions with children, that 'the average child' is considered with little attention to families with a disabled child and that there tends to be an implicit assumption that influencing what children eat means you influence them for life.

The American Agency for Healthcare Research and Quality has recently reviewed 92 studies of behavioural interventions to promote dietary change considered relevant to cancer risk (AHRQ 2002). It is concluded that behavioural interventions were successful in increasing the intake of fruits and vegetables and in decreasing intake of both total fat and saturated fat. Interventions were more successful at increasing fruit intake among children and vegetable intake among adults. Interventions with children were more successful at reducing the intake of total fat and less successful at reducing intake of saturated fat than interventions among adults.

The authors state that, due to a lack of relevant studies, it is not possible to comment on the effect on fruit and vegetable consumption in terms of the intensity, setting, mode of delivery, use of individual tailoring, or cultural or ethnic specificity of the intervention. There is however, some evidence that culturally or ethnically specific interventions were more effective at decreasing fat intake in those groups.

Interventions that involved social support, goal setting, small groups, family involvement and interactive food related activities (for example cooking and taste testing) appear to have been more effective in increasing fruit and vegetable intake and decreasing fat intake, but the authors urge caution in over-interpreting these results and suggest substantial additional research is required. One interesting conclusion was that studies with a theoretical basis were more likely to report significant increases in fruit and vegetable intakes than studies that did not have a theoretical framework.

2.4 What gaps do we have in our knowledge?

Clearly, there remain a number of gaps in our knowledge about effective nutrition interventions with children, these include:

- More Australian based work is required to ensure the conclusions are capable of generalisation from the predominantly US studies.

- There is a deficit in good quality research that focuses on the efficacy of different approaches to high-risk, hard-to-reach, low income and culturally and linguistically diverse populations.
- More research is needed to understand the relative roles of the different influences on children's eating behaviour from the family, the educational or care environment and community environment.
- We also lack detailed research of the role of different components of successful intervention, such as food and nutrition policy development, food service change and resource provision.
- The focus in childhood nutrition in developed countries has been on dietary fat intake, the consumption of fruit and vegetables and eating a balanced diet. There has been relatively little research done on other factors such as sugar consumption, sedentary behaviour, physical exercise, the impact of advertising etc.
- No evidence is yet available on the cost-effectiveness of various interventions.
- More research is needed to assess the long-term sustainable effect of interventions.
- Nutrition interventions have tended to be isolated and specialised efforts, little evidence exists of the effectiveness of a population wide approach similar to the Victorian SunSmart or national Quit campaigns, and the capacity of broad-based community wide healthy eating campaigns to effect nutritional change or the components of these that may be particularly efficacious in terms of children's nutrition.

2.5 Are nutrition interventions cost effective?

Systematic research to assess cost-effectiveness of nutrition interventions has barely begun, though a number of projects are underway. Deakin University is undertaking a project to analyse the effectiveness and cost effectiveness of childhood obesity interventions for the federal Department of Health and Ageing. The results are not yet publicly available.

Monash University and the Centre for Health Program Evaluation are conducting a project for the Population Health Division of the Department of Health and Ageing on the relative cost effectiveness of primary interventions in public health. The initial literature review has been completed and the key areas for cost effectiveness analysis identified, namely smoking, alcohol misuse, physical exercise and healthy nutrition. It will however, be some 18 months before any detailed information will be available, (Leonie Segal, personal communication 21st October 2002).

2.6 What outcomes can be expected from nutrition interventions?

Effectiveness of nutrition interventions in organised settings may be reflected in a variety of outcomes. Some of these, such as social behavioural changes, may be

measurable within a relatively short time frame; others require a lengthy timeframe such as epidemiological change. Assessing outcomes will require a commitment of resources over a significant period not only to ensure the adequacy of baseline data against which to measure outcomes, but also to ensure that appropriate research methodologies are fully integrated into policy, program and data base development.

2.6.1 Potential social behavioural outcomes

- *Changing beliefs and attitudes* towards ‘healthy food’ or specific aspects of a healthy diet such as fruit and vegetable consumption among children, parents, and staff.
- *Changing knowledge* of what constitutes a healthy diet.
- *Changing skills and confidence levels* in relation to teaching, modelling and providing healthy food.
- *Changes in eating behaviours* in the organised settings and outside it, and
- *Changes in levels of physical activity and inactivity* of children.

2.6.2 Potential structural or institutional outcomes

- *Changes in the proportion of settings that have adopted fully articulated nutrition policy.*
- *Changes in the nature and extent of nutrition policy implementation.*
- *Changes in extent of formal nutrition training* for staff and/or nutrition components in existing training and changes in participation in nutrition training.

2.6.3 Potential epidemiological outcomes

- *Changes in children’s body mass index*, and specifically in the incidence and prevalence of overweight and obesity among children.
- *Trends in the Type 2 diabetes* incidence and prevalence in childhood.
- *Changes in incidence and prevalence of adult obesity*, heart disease, diabetes and cancer, and reductions in the burden of disease associated with physical activity, obesity, inadequate consumption of fruit and vegetables and high blood cholesterol.
- *Changes in assessment of the proportion of the burden of disease* associated with diet.

2.7 “What can be learnt from other broad based public health initiatives”

There is an increasing body of knowledge about population based public health interventions that have been assessed as achieving significant public health gains (SIGNAL 2000; Montague et al 2000; Chapman & Wakefield 2000). In summary, the following elements appear to be critical:

- *Continuity*:- the effort is sustained over lengthy periods that may have long phase of groundwork, followed by periods of intense campaigning.
- *Credibility*:- key player or players have credibility with all levels of society including, the public, government, and the business and community sectors.
- *Adequate resources*: - sufficient resources need to be available over considerable period to be able to sustain the effort.
- *Research-based*: - public health initiatives need to be founded, resourced, planned, designed, evaluated and constantly reframed on the basis of credible research which is epidemiological, scientific, behavioural, evaluative etc,
- *Comprehensive, multi-faceted and co-ordinated*: - initiatives need to combine a wide variety of approaches including research, education, training, policy development, social marketing, mass media campaigning, advocacy, marketing, merchandising, regulation, environmental change, legislation etc to achieve change on a variety of fronts including individual attitude and behavioural change, community education and community development, institutional and environmental change, government standard setting and regulation.
- *Multi-level and multi-setting*:– simultaneously working at many levels and in many settings such as local, state and national media newspapers, magazines, radio and television, preschools, schools, tertiary institutions, workplaces, trade unions, relevant industry bodies and individual businesses, local, state and federal government, the media, the bureaucracy, arts, sport and recreation organisations, business etc.

3. Organised settings for 0-12 year-olds

This section begins with a brief discussion of a number of aspects of organised children's settings to assist the Eat Well Victoria Partnership to select settings for further work in relation to nutrition policy development and implementation. This is followed by an overview of the key settings in the preschool, primary school and out of school hours sectors. It should be remembered that this is an overview only, detailed work on selected settings will be conducted in Phase Two of the project.

3.1 Critical aspects of organised settings

The following eight aspects of organised settings are suggested as ones the Partnership may wish to consider when deciding which to select for further development.

1. *Capacity to reach children from all backgrounds.* The setting can be considered in relation to the extent to which the setting is used by families from different socio-economic and cultural backgrounds who live in all parts of the state. Long day care centres, family day care programs, kindergartens, primary schools and out of school hours programs are available across Victoria, are attended by large numbers of children and are used by families from all backgrounds. Special schools, while having relatively small numbers of children, provide access to children with special needs who may not be reached through other settings. Data on usage of different types of childcare and school settings is detailed in the following sections of this paper.

Potentially, out of home care settings for young children in Victoria could be considered as organised settings for nutrition policy development. However, the number of children involved is very small and most of the care settings are in foster homes. According to DHS (personal communication October 24th 2002), around 4000 children (aged 0-18) are in care on any one day in Victoria. Some 500 are in small group homes and only about one third of these are under 12. Around 3500 are in foster care and about a half of these are under 12. These settings are not therefore considered here. However, it should be noted that discussion of food and nutrition policy, nutrition education and food service in out of home protective care settings are almost completely absent from the literature.

2. *Exposure to nutrition opportunities.* The extent to which children in the setting are exposed to nutrition opportunities will vary and will influence the potential for nutrition education in that setting. Exposure will be affected by a number of factors: the amount of time children spend at the setting, the number of meals or snacks eaten there, the proportion of daily nutrient intake likely to be consumed, and the focus of the activity in the setting. Thus settings such as sporting or recreational clubs where the focus may be basketball or music or chess, where food is not consumed and where children spend limited amount of time per week may be considered as having a low priority for nutrition policy development. Children in occasional care programs, playgroups and possibly kindergartens, may also be viewed as having limited exposure to nutrition opportunities because of the relatively short periods of time children spend in such settings. See below in section 3.2 for further discussion in relation to kindergartens.

3. *Capacity to involve parents in nutrition education activities.* Settings will vary in the extent to which there are opportunities to reach and involve parents as well as children around nutrition issues.
4. *Evidence of effectiveness of nutrition interventions.* This aspect involves the extent to which nutrition interventions have been demonstrated as effective in the setting.
5. *Current state of nutrition policy development and implementation.* Settings vary widely in the extent to which nutrition policy is in place or under development. In some regards, this element is dependent on the existence of organisational structures that support policy development and implementation such as regulatory, accreditation or monitoring frameworks, active peak bodies, and requirements for professional training for staff. Some settings such as long day care centres operate within a formal accreditation framework that has already gone some way towards ensuring the development of nutrition policy.
6. *Current state of resource and training development to support policy implementation.* Settings vary in the extent to which educational, training and resource development are underway to support the implementation of nutrition policy.
7. *Capacity to involve key stakeholders:* Settings also vary in the range of stakeholders involved and the feasibility of involving them in nutrition policy development and implementation.
8. *Availability of data to assess impact and outcome of nutrition policy development:* Settings can be considered in relation to the availability of baseline data that will facilitate the assessment of impact and outcome of any nutrition intervention. Thus if we are going to measure effective outcomes on any of the parameters identified in section 2.6 above, baseline data will be needed in relation to;
 - The nature and extent of mandatory requirements and monitoring systems in relation to nutrition policy development and implementation.
 - The extent of mandatory and voluntary nutrition policy adoption and implementation in settings.
 - The capacity and confidence of staff to develop and adopt policy, to implement policy and to seek out up to date nutrition resources.
 - Levels of formal and informal training of staff in nutrition.
 - Knowledge, attitudes and beliefs about nutrition and healthy eating in staff, parents and children.
 - Consumption patterns of children both in the setting and outside the setting.
 - Data on body mass index of children of different age groups in different settings.

3.2 *Preschool settings for 0-5 year olds*

3.2.1 *Size of the preschool sector*

The principal organised settings for the 0 to 5 years olds are long day care centres, family day care programs, occasional care programs and preschools/kindergartens in both the public and private sector. The Australian Bureau of Statistics (ABS) 1999 childcare survey indicates that one in five or 22% of Australian 0-4 year olds attend a formal care program (ABS 2000:11) and that levels are rising, (14% in 1990, 19% in 1993, 21.4% in 1996 and 22.6% in 1999). Victorian data suggest similar levels of attendance.

Table 1: Children attending formal Victorian childcare programs (1999)

Type of formal care program	Number attending the program
Long day care centre	44,400
Family day care	20,400
Occasional care	11,800
Preschool/kindergarten	71,300
Total children in formal care*	181,100
Total 0-11 year old children in Victoria	761,100

These figures are based on 0-1 year olds, though the majority will be 0-5 years olds.

* Components do not add up as total of formal care includes children who attend before and after school programs (40200), other formal care (7500) and children can use more than one form of care. Source: ABS 2000:13

There are 835 licensed long day care (LDC) centres in Victoria (DHS personal communication August 2002), these being a mix of private, local government, industry and community managed centres. These programs provide developmental and care activities for children under school age, and are run by a mix of two year trained childcare staff and untrained assistants.

There are 72 family day care (FDC) programs in Victoria, 76% of which are run under the auspices of local government authorities. There are 3,284 home-based care providers registered in these programs and 315 co-ordination staff (DHS 2001). Both LDC and FDC programs provide up to 60 hours care per week on 48+ weeks per year, and some FDC programs provide overnight and weekend care.

Occasional care programs have been omitted from the more detailed discussion below as they involve relatively small numbers of children who only attend these settings for relatively short periods and on an intermittent basis only.

There are approximately 1000 stand-alone preschools or kindergartens in Victoria (KPV personal communication October 2002). These programs are run under a wide range of community based agencies and offer educational and developmental programs for 3, 4 and 5 year old children in the two to three years before they attend primary school. The programs are offered on a sessional basis of 10, 12, 15 and even 20 hours a week during school terms. Kindergartens are run by three year trained early childhood staff and untrained assistants.

3.2.2 Current nutrition policy development and implementation

Nutrition policy development is relatively underway in LDCs, but less so in FDC and kindergarten programs. There are two key vehicles that have supported and encouraged policy development in LDCs. Firstly, the national system that links payment of the Child Care Benefit to parents with program accreditation with a focus on quality assurance and improvement. Secondly, the state based systems for licensing programs on the basis of meeting a set of minimum standards. In some other states most notably SA and WA, there has been a voluntary childcare nutrition award scheme Start Right Eat Right managed by a non-government organisation with government funding. An equivalent program is currently being piloted in Victoria by the Lady Gowrie Child Centre (see below).

Quality Assurance

Since the mid-1990s, the National Childcare Accreditation Council (NCAC) has accredited LDCs based on the meeting of quality standards and payment of federally funded Child Care Benefit to parents is dependent on centres meeting quality standards under the national quality improvement and accreditation system (QIAS) administered by the NCAC. This system is based on a collaborative process involving staff, management and parents and defines quality care around a set of ten quality areas, 35 principles and indicators of unsatisfactory, satisfactory and high quality care. Sections directly relevant to nutrition include:

Quality Area 2: Respect for children: Principle 2.4: “Mealtimes are pleasant, culturally appropriate occasions and provide an environment for social learning and positive interaction”

Quality Area 7: Protective care: Principle 7.1: “The centre has written policies and procedures on child protection, health and safety, and staff monitor and act to protect the health, safety and well-being of each child.” Nutrition and food handling and storage are two of eleven areas suggested for inclusion in the written policies.

Quality Area 8: Health: Principle 8.1: “Food and drink are nutritious and culturally appropriate and healthy eating habits are promoted.” Detailed indicators of “satisfactory care” and “high quality care” provide guidance on

- Maintaining current information on nutrition
- Developing and implementing nutrition policy
- Inclusion of current recommendations on nutrition
- Food supply reflecting Commonwealth and State recommendations on children’s food requirements
- Flexible arrangements for age, individual preference and special needs dietary requirements and encouragement of healthy food habits
- Forward menu planning involving parents and evaluation of menus against nutrition guidelines
- Involvement of parents in nutrition education, policy development and implementation
- Nutrition training of staff.

Stand-alone kindergarten programs do not come under the NCAC nor is Child Care Benefit payable to parents. Funding is the responsibility of the state government.

The NCAC is currently extending the quality assurance process and improvement process to family day care. Family Day Care Quality Assurance (FDCQA) was launched in June 2001 and specifies six quality elements and 32 principles.

Quality Element 4: Health Hygiene, Nutrition, Safety and Well-being: Principle 4.2:

“The scheme has a written nutrition policy that is based on current advice from relevant health authorities, is culturally sensitive and is reflected clearly in the practices of carers.”

Minimum Standards

At the state level, the Victorian Department of Human Services licenses LDCs and kindergartens on the basis of meeting minimum standards set by the Children’s Services Regulations (1998) and accompanying Children’s Services Operational Guide (1998). Generally these standards cover factors such as space, range of equipment, number and ages of children, number of staff and staff qualifications. The requirements of the *Children’s Services Regulations 1998* relating to food revolve largely around food safety. Section 50 reads:

“Requirements for food preparation

(1) The proprietor must ensure that facilities to cook or heat food, washing up facilities and refrigerated food storage facilities are available to and accessible by staff to enable them to prepare and provide food for children being cared for or educated by the children’s service.

Penalty: 8 penalty points.

(2) The proprietor must ensure that if food is supplied by the children’s service and provided to the children at the children’s service-

- (a) a weekly menu is displayed describing the food to be provided each day;
- (b) the food is adequate, both in quality and quantity, and appropriate to the children’s growth, cultural and development needs.

Penalty: 8 penalty points.

(3) The proprietor must ensure that if the food is provided to children at the children’s service, whether or not the food is supplied by the service-

- (a) the food is offered to children at frequent and regular intervals;
- (b) cleanliness is observed where the food is stored, handled and prepared on the premises;
- (c) all food consumed on the premises intended for consumption is protected at all times from contamination;
- (d) there are suitable eating arrangements for children at the service.

Penalty: 8 penalty points.

(4) In this regulation, “food” includes beverage.”

The Children’s Services Operational Guide 1998 accompanies the regulations. This document also discusses hygiene and food safety matters and suggests (but does not require) the provision of healthy food and the development of nutrition policy.

Section 4.3 Food and Hygiene reads:

“Quality and Quantity

Suggested practice

Food must be appropriate to the children’s growth, cultural development and needs. The food provided by the children’s service should provide a varied, balanced diet in line with *National Health and Medical Research Council’s Dietary Guidelines for Children and Adolescents*.

Developing a nutrition policy

The development of a nutrition policy is a practical way to promote good nutrition in your service. A nutrition policy will provide guidance to staff in the day-to-day operation of the centre. For further information about *Australian Dietary Guidelines* and meeting the nutritional needs of children contact the *Australian Nutrition Foundation*.”

FDC programs do not come under the Children’s Services Regulations except in relation to the ratio of carers to children. The Victorian state government has endorsed a set of National Standards for Family Day Care and a policy and quality document is in the process of being developed. It is not yet clear how extensive the standards will be and how and by whom the standards will be monitored.

Food Safety

LDCs and kindergartens are required to meet the state based food safety legislation that is administered through local government. The FDC sector is exempt from this legislation but the FDC sector is keen for the government to provide a set of guidelines for carers to assist them to operate safely and hygienically. Food safety regulations do not require nutrition policy development but do have an impact on policy implementation.

3.2.3 Current resource and training development

A range of resource and training development has occurred, or is in train, in the preschool sector to support policy development and implementation. The national accreditation system has provided a useful impetus (Pollard et al 1999). Below is a brief overview of existing statewide initiatives in Victoria.

Resource development by Nutrition Australia

Nutrition Australia has developed a range of resources about nutrition, several of which are geared specifically to the preschool sector, for example *Food and Nutrition Accreditation Guidelines for Child Care Centre* (2002) and also *Menu Planning for Childcare Centres* (2002).

Filling the Gap

This project involved research in the Western Region of Melbourne to identify the sources of nutrition information used by parents, carers and teachers of children aged 0 to 8 years. On the basis of these results a series of articles have been published and six nutrition related, age specific resources have been developed for parents and disseminated across Victoria. These are currently being evaluated by RMIT and informally reports are very positive.

In addition, almost 2000 nutrition resource manuals called *What’s There to Eat* have been distributed to Victorian professionals working in the early childhood area including maternal and child health nurses, preschool/kindergarten teachers and long day care staff. The aim is to provide up-to-date knowledge of child nutrition and to give access to accurate and consistent information to provide to families.

Start Right Eat Right

A joint project of DHS and the Lady Gowrie Child Centre is underway at present to investigate the need for, the viability of and the potential statewide implementation of

a Victorian award scheme for childcare centres similar to the successful Western Australian and South Australian childcare nutrition award schemes.

Food Facts for Preschoolers

This project is one of the National Child Nutrition Projects, and is run by Kindergarten Parents Victoria with the aim of developing nutrition training and educational resources for Victorian preschool and kindergarten teachers.

Sharing Pictures of Children's Development: Relaxed and social: a positive approach to children's healthy eating

The Centre for Community Child's Health at the Royal Children's Hospital has developed a communication tool for preschool and childcare centres, *Sharing Pictures of Children's Development* to assist staff to communicate with parents about children's development. A set of resources and training for staff are currently being trialled to increase staff awareness and confidence in discussing nutrition and healthy eating information with families. In addition, a resource for parents named *Relaxed and social: a positive approach to your child's healthy eating* is being distributed. These resources are being distributed nationally with the assistance of the Australian Dairy Corporation and the NCAC.

Promoting Good Food in Family Day Care

A nutrition information kit for family day care programs and long day care centres where food is brought from home has been developed in New South Wales and is now nationally available through the National Family Day Care Council of Australia. The kit has been developed in consultation with urban, rural and remote programs to ensure widespread relevance, and has recently been sent to 350 programs nationally. It will be evaluated in late 2002. Model training workshops to accompany the kit have also been developed but will only be available in NSW and not nationally.

3.2.3 The key stakeholders

The preschool sector includes a fairly extensive array of stakeholders including:

- Federal level agencies such as the National Child Care Council, the National Family Day Care Council and National Childcare Accreditation Council as well as the federal Department of Family and Community Services.
- The Victorian Department of Human Services as the body responsible for monitoring minimum standards.
- Seventy-eight Victorian local government authorities that administer licensing and food safety regulations provide support to local children's services and in some instances directly manage childcare services.
- State level peak bodies are numerous in the preschool sector, for example there is Community Child Care, the Child Care Centres Association of Victoria, Kindergarten Parents Victoria, Victorian Private Child Care Association, Family Day Care Victoria etc.
- Childcare service management including local government, industry, private operators and community based organisations.

- Childcare and preschool staff, family day care co-ordinators and carers.
- Tertiary education agencies involved in training child care and early childhood staff.
- Families using preschool services.

3.2.4 Opportunities and barriers in nutrition policy development and implementation in preschool settings

The national accreditation framework has provided an important impetus in the preschool sector for the development of nutrition policy and the development of resources and training to support policy implementation. This is particularly evident in long day care settings. The later inclusion of family day care programs into the national accreditation scheme is reflected in lower levels of service specific resource development and probably (though we lack adequate data) in policy development. Data on the status of Victorian LDC centres in relation to quality standards around nutrition will not be available for 6-12 months, and on FDC programs for approximately another 18 months (NCAC personal communication 10-02).

Stand-alone kindergarten's are in a slightly different position in that children spend much less time in these settings, however, the number of children who do attend is significant and the educational opportunities are important. The absence of an accreditation program based on quality assurance or of a voluntary nutrition award program leaves the state based regulations as the only vehicle to encourage nutrition policy adoption in this setting.

Opportunities in preschool settings

Children attending long day care and family day care settings consume a significant proportion of their daily food intake in those settings and the preschool sector provides an excellent opportunity to engage parents in nutrition related education and activities. Parents already demonstrate a keen interest and are reported as frequently asking childcare staff for advice about their child's development generally and eating behaviour specifically (Pictures of Children's Development 2000, Gibbons et al 2000).

Family day care provides a service in carers' homes and many of these carers are women with children of their own. Work in this area therefore potentially provides an opportunity to have an impact not simply on carers as members of the workforce, but also on carers as parents. Kindergartens too offer an opportunity to educate parents as well as children.

A voluntary nutrition award system for LDC centres is in its infancy in Victoria, but there is evidence of the effectiveness of such a system from interstate. The experience of the SunSmart accreditation in preschools (and schools) suggests that such schemes can be extremely successful when parents and staff are aware of the importance of the area and can see the potential of accreditation for marketing purposes.

Barriers in long day care settings

Despite the requirement to develop and implement nutrition policy, there are indications that policy implementation in long day care centres is still hindered by a number of factors including:

- Relatively low levels of nutrition training and knowledge in childcare staff and cooks except in the area of food handling and hygiene, (Allan 1998:3; Pollard 1999; Gibbons et al 2000; Children's Health and Development Foundation website 2002, <http://www.chdf.org.au>).
- Limited sources of information about nutrition used by childcare and kindergarten staff. Sources appear to have been largely newspapers, magazines and brochures produced by food companies and few staff attend formal professional development, (Gibbons et al 2000; Graham(a) et al 2000). The production of *What's There to Eat* may to some extent have remedied this situation in Victoria, but again we lack adequate data to assess impact.
- Staff apparently experience difficulties in accessing consistent up-to-date nutrition information, and report having a lack of time and resources to seek out or take advantage of information or training opportunities, (Gibbons et al 2000).
- Competing priorities for staff professional development, the placement of a higher priority on issues such as worker-child interaction and emergency measures, unwillingness to travel long distances outside working hours (Gibbons et al 2000), financial constraints and difficulties in finding and paying for childcare workers to backfill positions while staff undertake training activities, (Melbourne University childcare programs, personal communication 2002).
- There is a lack of culturally specific nutrition information and little relevant information available in community languages, (Gibbons et al 2000, Graham(a) et al 2000).
- Staff directly involved in the production of food in LDCs such as cooks are reported as having limited training in nutrition, there is a lack of program planning time to enable liaison and communication between childcare staff and cooks, and to enable cooks to undertake adequate program planning around nutrition, (Allan 1998:3).
- There are anecdotal reports of a negative impact on the provision of food services as a result of financial cuts by the federal government particularly the reduction of the operating subsidy in 2001, (Allan 1998:3) and educational nutrition opportunities because of food safety regulations restricting parent and child involvement in food preparation.

Barriers specific to family day care settings

While there has been more limited research done in relation to family day care programs, there are indications of a number of barriers to nutrition policy development in these settings:

- FDC is a shrinking sector; between 1996 and 1999 there was a 17% reduction in family day care providers and an 11% reduction in the numbers of children (DHS 2001:32).

- Programs experience some difficulty in retaining care providers and attracting new carers. This is attributed (among other things) to the fact that carers feel that the requirements are increasingly onerous and are reluctant to engage in training beyond that which is mandated (FDC Victoria personal communication 2002).
- Less than half of the co-ordination staff work full time (43%), with 56% part time and 1% employed on a casual basis (DHS 2001).
- Low levels of training are evident both among carers and among family day care co-ordination staff. The 1999 census of child care revealed that 20% of co-ordination staff have no formal early childhood qualifications but have been employed in the role for at least three years, while 42% of carers do not have qualifications and have been working with children for more than three years. Many programs do have requirements for carers to undertake regular in-service training that may include information on nutrition, but it is felt that assistance is needed to ensure training is interesting, relevant and up-to-date (FDC Victoria personal communication 2002).

Barriers specific to stand alone kindergarten settings

Again many of the barriers that exist in terms of resource development and accessibility, staff knowledge and training affect the kindergarten setting. In addition, this setting may face the following issues.

- This setting, alone of all preschool settings, does not receive funding, accreditation or oversight at the federal level, and has not received the support and encouragement that the accreditation framework provides. Kindergartens tend to be small, community managed organisations with part-time staff operating only 40 weeks of the year.
- Stand alone kindergartens are in a unique position in the preschool sector, a position that is not without difficulty in some regards, issues around training of staff, hours of operation, subsidy and feasibility in the face of changes in women's workforce participation all raise difficult questions about its future.
- Children spend relatively short periods of time in this setting, and usually only consume a snack. While there is potential for educational opportunities and parent involvement, these may not outweigh the relative lack of exposure children have in this setting.

Summary

The preschool sector with its varied settings for 0 to 5 year olds clearly provides a fertile environment for making progress in nutrition policy development and implementation. Existing initiatives and achievements in the accreditation, licensing and award fields can be built on, resource development is underway, and opportunities exist to promote nutrition and nutrition related information to staff parents and children. Resource development specifically geared to children, families and carers from diverse cultural and linguistic backgrounds is limited. Increasing the awareness of parents and the wider community generally of the importance of good childhood nutrition will increase the pressure on preschool settings to adopt and implement nutrition policy and to take advantage of a voluntary award system.

There remain, however, significant barriers to the implementation of nutrition policy in preschool settings including a lack of knowledge, resources, skills and training as well as structural issues such as funding limitations, labour market and regulatory restraints. A number of recent initiatives in Victoria are seeking to address some of these barriers, but their effectiveness remains to be assessed, and will depend on the collection of reliable baseline data, rigorous evaluation processes and on adequately resourced and sustained programs.

3.3 Primary school settings for 5 to 12 year olds

3.3.1 Size of the primary school sector

The primary school sector contains the largest number of children of any single setting. As at February 2002, some 452,529 children were enrolled in Victorian primary schools, and 3,126 children with special needs aged 12 and under were attending special schools.

Table 2: Children attending Victorian primary and special schools (2002)

Type of school	Number of stand alone primary schools	Number of joint primary and secondary schools	Number of children attending primary schools
Primary schools			
Government	1232	47	312689
Catholic	386	10	101519
Independent	61	126	38319
TOTAL in primary sector	1679	183	452528
Special schools			Number of children 12 years and under
Government	-	80	2947
Catholic	-	7	72
Independent	-	9	107
TOTAL >12 year olds in special schools		98	3126

Source: Verbal communication from the Victorian Department of Education based on the February 2002 school census data.

All Australian children attend school generally spending seven years in primary schools from approximately 5 years to 12 years of age and attending six to seven hours a day for forty weeks of the year. Schools are of course education sites, and the key aspects of school life that involve food and nutrition revolve around the curriculum, meal and snack times, and fundraising and social events. Each of these is dealt with separately in the following section.

3.3.2 Current nutrition policy development and implementation

The Health Promoting Schools (HPS) concept has the potential to provide a framework for the promotion of nutrition in schools with its focus beyond the curriculum and the incorporation of the whole school community and the wider community within which the school is located. Over 100 Victorian schools have been involved as HPSs since 1998 under the auspices of a joint project by Deakin University and DEET. Current evaluations of Victorian and NSW schools that have taken up the concept have demonstrated few significant gains in the area of nutrition, (Deakin University 2000, Mitchell et al 2000).

The curriculum

The Victorian Curriculum and Standards Framework (CSF) provides the framework for the delivery of health and physical education including learning around nutrition

(Board of Studies 2000). The key learning area of health and physical education “helps young people learn about factors, including nutrition, that promote and protect the physical, social and emotional health of individuals, families and communities.” (Board of Studies 2000:5). There are ten goals of the health and physical education area covering a range of issues, two of which relate specifically to nutrition. The goals are to develop in students:

- “an understanding of how food provides nutrients for energy and growth, and plays a significant social role in people’s lives
- knowledge and skills to select food to promote health and growth.”

The CSF provides a framework but does not dictate how schools should implement the key learning areas, the focus and content of the curriculum on nutrition will vary considerably from school to school.

Food consumed at school

A second key area where nutrition issues are apparent in schools revolves around the food consumed by children whilst attending school either at snack or lunch times. Generally this is an unregulated area where two main approaches are evident: all school-consumed food is brought from home, or the school is involved in some way in the supply of food to children. Some schools run a canteen on a daily or less frequent basis. Others have an arrangement with a nearby milk bar or similar commercial food supplier on a daily or less frequent basis.

The extent to which schools are involved in setting standards for or monitoring the food children bring to school varies considerably. In a small minority of schools a strong interest is taken in the nutritional content of the children’s snacks and lunches, rules exist about what food can be brought to school, and in some instances these are rigorously enforced. Other schools have no formal food policy, but encourage or advise parents and children about what constitutes a healthy lunch. Yet other schools take little or no role in relation to children’s snacks and lunches. (Personal communication DHS and Victorian Schools Canteen Association September 2002).

Schools also have very varied positions in relation to the food children can buy while at school. Some schools have canteens that run within the framework of an articulated healthy food policy that may or may not have links to the curriculum. Others have no policies, do not supply or encourage the purchase of fruits or vegetables, and provide ready access to a wide range of high sugar and high fat foods.

Canteens

School canteens are the responsibility of the individual school and its school council or independent school equivalent. DEET plays no role in overseeing or regulating food eaten on school premises and has only recently, (in the past three months) included policy statements in the Victorian Government Schools Manual relating to food safety and food handling on the one hand, and school canteens and nutrition on the other. This document is currently being revised, and in response to recent concerns about childhood obesity, the section on the role of school canteens is being substantially revised with advice from the Victorian Home Economics and Textiles Teachers’ Association.

It is difficult to make definitive statements on the number and nature of canteens in primary schools. DHS indicated that, at this stage, apart from contacting all of the 78 local government bodies that are responsible for food safety inspections, there is no way of knowing the number of school canteens. However, in twelve months time an interactive database will be operating with the local government authorities that have the responsibility for monitoring compliance with food safety regulations. This will enable a count of school canteens to be made, and it may be possible to identify school-run as opposed to commercially operated canteens because of differential fees paid to local government for food safety inspection.

Canteens are operated in a variety of ways; by means of unpaid labour provided by volunteer parents, by paid staff who may or may not be assisted by volunteer parents, or under contract to outside bodies.

Two not-for-profit canteen organisations exist in Victoria with over 700 members, although some schools may belong to both organisations (see below for a discussion of the role of these organisations).

Apart from the local government role in monitoring school food services in relation to food safety there is no regulatory or award system for Victorian canteens. In NSW a healthy food canteen award program has been operating since 1994, while the WA Star Canteen Accreditation Program (StarCAP) has been accrediting WA canteens as healthy canteens since 1999, (Bowman 2002). Both schemes are seen to be effective in improving healthy eating choices and options in schools.

School sponsored events

In this area good nutrition and nutrition education tend to come a very poor second to the goals of social interaction, celebration or fundraising. School sponsored events such as sausage sizzles, chocolate drives and school fetes are unregulated except in terms of the DEET guidelines on sponsorships contained in the Victorian Government Schools Manual and food safety regulations.

DEET is supportive of schools entering into co-operative sponsorship and promotional arrangements, and schools may find themselves in the position of seeking sponsorship from commercial interests that may be antithetical to or at least not in line with healthy nutrition. DEET guidelines on sponsorships and promotions suggest that in deciding on sponsorship or promotion arrangements the school council should “take into account the values and views of the school community as well as the school’s charter and policies ... Arrangements must not be entered into with companies directly involved with tobacco or alcohol products. (Schools of the Future Reference Guide 1996 Section 7.2.6). This statement is about to be extended to include gambling (DEET verbal communication 8-10-02).

School sponsored events usually involve members of the wider community and therefore can provide opportunities to model healthy and nutritious food and to educate more broadly than the school community.

3.3.3 Current state of resource and training development

Curriculum resources

The National Nutrition Education in Schools Project has been very active in developing resources and training for teachers to support nutrition education in schools (Curriculum Corporation 1996, DHFS 1998).

In the mid-1990s the Victorian Division of the National Heart Foundation of Australia developed a series of Food Smart resources to assist teachers with nutrition education in lower and upper primary school classes (Cooper & Freeman 1993, 1995). These have been superseded by the National Heart Foundation of Australia national resource *Eat Smart for Heart* for all levels of primary school (NHF 2000). This resource is being promoted nationally and is currently in the middle of an anticipated three years of implementation.

Food service resources

In Victoria, both government and non-government agencies were active in this area in the 1980s and early 1990s, however since then there have been relatively limited efforts to support or resource nutrition policy and practice in school food services. In 1980 the Ministry of Education published *Nutrition Guidelines for School Canteens and School Councils*, which was followed eight years later by *Guidelines for School Canteens* jointly published by the Ministry of Education and the Health Department Victoria. Both of these documents are out of print. In 1996, the Heart Foundation (Victorian Division) developed Food Smart for School Canteens (Cooper & Freeman 1996). This document has been superseded by the National Heart Foundation of Australia national resource *Eat Smart for Heart* (NHF 2000). Various resources developed by Nutrition Australia to assist schools and school canteens to learn about and supply healthy food are available (Valentini et al 1997). However, schools find these resources difficult to locate.

Recognising the key role and the unregulated nature of school canteens, the federal government Department of Health and Ageing recently developed a resource for school canteens (Costmeyer 2002) that outlines a three-step process for becoming a healthy school canteen, provides an example of a school canteen policy and gives an overview of the national Federation of Canteens in Schools and five state based school canteen associations around Australia. Victoria emerges as one of the states with the least active focus on healthy food and nutrition in school canteens.

Two not-for-profit organisations provide some support to school canteens on the basis of membership fees. The Victorian Schools Canteen Association (VSCA) was founded in 1983 by a nutritionist and then part-time school canteen manager with an explicit focus on nutrition and healthy eating (VicHealth project files, VSCA website and personal communication). The VSCA received a small amount of funding from the Victorian Health Promotion Foundation for two nutrition-related projects in the late 80s, followed by joint funding from the then Health Department and the Ministry of Education in the early 90s. Funds were ceased in 1993, and since then the VSCA has tried to maintain a healthy food education focus at the same time as acting as a distributor of canteen products in order to survive financially. The VSCA has some 300 members.

The other organisation is the Schools' Canteen Buying Group (SCBG) which acts principally as a buying group for school canteens, and does not have a focus on nutrition. SCBG has a membership of about 400 schools.

Various projects with a focus on school canteens have been funded over the years by VicHealth and currently through the National Child Nutrition Projects. These projects have often been very successful locally, but sustainability and sharing of the lessons learned have been difficult because of the short-term nature of project funding. Examples of such projects include the 1998-99 VicHealth funded project in Swan Hill where the Hospital Nutrition and Dietetics Department worked with 12 local schools on policy development and implementation. A range of support (financial, advisory and resource provision) and incentives (awards for the healthiest school and the best school canteen), were described as successful in changing food services and general awareness and approaches to nutrition in the schools (VicHealth project files).

More recently Maroondah City Council ran a broad based project to promote healthy eating including local schools that has included policy development, resource provision and food service components. In South Western Victoria, a project has been funded under the National Child Nutrition Project with the aim of increasing fruit and vegetable consumption in school children in grades prep to four. This *High Five* project is seeking to affect school culture regarding nutrition and encourage the development and implementation of nutrition goals across policy, curriculum, food service and parent education (Food Chain 2002). This project is participating in the Deakin University cluster evaluation of Victorian National Child Nutrition projects and results will be available in 2003. Anecdotally at this stage, the multi-strategy approach is judged as very successful (Personal communication, September 2002).

3.3.4 The key stakeholders

The key players in the school context include

- Overall management including the Department of Education, Employment and Training and where relevant, the school board of governors or equivalent.

- Regulatory bodies such as DHS and local government for food safety issues.

- The school principal, the teachers and the school nurses and their relevant professional and training bodies.

- State school councils or equivalent bodies in Catholic or independent schools.

- Private companies or individual operators that may have contracts to run school canteens.

- Voluntary or paid staff running canteens.

- Canteen resource organisations such as the VCSA and the SCBG and the federal peak body FOCIS.

- The families in schools.

3.3.5 Opportunities and barriers in nutrition policy development and implementation in primary school settings

Opportunities for nutrition policy development are many in the schools area and are likely to grow as the community in general and parents in particular become more aware of the importance of healthy nutrition and the role schools can play. Both mandatory and voluntary efforts to increase nutrition policy development and adoption in schools have been shown to be effective and there is substantial evidence that school based nutrition interventions in both curriculum and food service areas can

be successful and can be combined with education about physical activity (Worsley et al August 2002). Evidence on healthy eating interventions suggest multi-strategy approaches that incorporate a focus on curriculum, food service, parental involvement, physical activity and inactivity are most effective. Important information is coming from the US and particularly California at present to assist in assessment of approaches (Center for Food and Justice 2002).

There are however, a number of barriers or perceived barriers that currently exist.

Profit versus health

Canteens struggle to be financial especially in small primary schools and there is often a perception that there is a conflict or at least tension between on the one hand making a profit either commercially or as a form of fundraising for the school, and on the other hand, selling cheap, easy to prepare, nutritious food items.

Dependence on untrained and often volunteer labour

Parent volunteers, sometimes with and sometimes without a paid canteen manager, run many canteens. Where paid managers are in place, the hours and remuneration are frequently limited. Where canteens are leased out to a commercial company, the school may have little control over menus. The skills and qualifications of the managers and volunteers may be limited in terms of knowledge of nutrition, and where parents run the canteen there is often a lack of continuity that can hinder the build-up of such knowledge.

A disorganised, unregulated sector

In Victoria the school canteen sector is relatively disorganised, there is no strong advocacy group that lobbies on behalf of school canteens and the field is basically unregulated. Since the early 1990s, the government appears to have vacated any role in advising or supporting school canteens or school councils who have decision-making powers in relation to canteens. In contrast, in Western Australia and New South Wales, the government works in partnership with non-government school canteen organisations and successful accreditation schemes have been developed that revolve around the provision of healthy food choices (Food Chain 2002). In Victoria, there was a moment in the late 1980s early 90s when such a partnership could have developed, but government funding was withdrawn and efforts to organise and resource the sector have been largely left to two small, not-for-profit organisations with very limited resources.

The impact of food safety regulations

It has been the experience of some schools that the food safety regulations have acted against the provision of healthy food. For example, where parent volunteers, or paid canteen managers previously prepared food in their own home to sell at the canteen, this is no longer allowable.

Low priority in the school

In the public sector, canteens are the responsibility of the school council, and may have a school council sub-committee that oversees the day-to-day running of the canteen. There tends to be a lack of continuity both in the management and the operation of the canteen, and in the face of many demands on school councils, canteen operations tend to come low on their list of priorities.

Poorly resourced

Even where school councils or parents have wished to act, resources to assist them have been limited and difficult to access.

Perceived lack of continuity between curriculum and canteens

Parents appear interested in having good nutrition reinforced in the school setting (Graham(b) et al 2000). Teachers regard nutrition information as important and dissemination of nutrition information to children as part of their role (Graham (b) et al 2000) but not to parents. School nurses identify the provision of nutrition information to both children and their parents as part of their role (Graham(b) et al 2000). Despite these encouraging signs, links between the curriculum, food service in schools and parent education are tenuous in many schools.

The crowded curriculum

There are many demands on teachers in schools that may inhibit the development of an increased focus on nutrition.

Lack of formal training and knowledge of nutrition resources

Generally teachers have had limited training in nutrition either in their teacher training or in subsequent professional development. They tend to rely on nutrition information from food companies, newspapers, magazines and television (Graham(b) et al 2000). Teachers also appear not to be aware of the nutrition information and curriculum resource materials that are available, however the *Eat Smart for Heart* program launched in 2000 may be remedying this situation.

Lack of culturally specific nutrition information suitable for use with children and parents and the need for more up-to-date nutrition information for both parents and children.(Graham(b) et al 2000).

Impact of the broader environment.

There are indications that the broader environment with advertising and food services that often promote messages counter to healthy eating interventions, continues to impede the effectiveness of efforts in school settings (Sahota et al 2002).

Summary

It is clear that schools offer significant opportunities for the development and implementation of nutrition policy. Healthy eating interventions can be effective in primary schools. All Victorian 5 to 12 year olds attend some form of school, all groups in the community (and their families and teaching staff) can be reached through the school system.

Some progress has been made in the area of curriculum development but teacher training and resource development requires an on-going focus. The major opportunity in the primary school sector is in the food services area with the possibilities this presents for the development of accreditation, award or standards systems, the provision of training and resources to support such systems, and initiatives to bring food services and the curriculum closer together. Barriers include the diversity of the sector, relative lack of skills or training in nutrition, the existing demands on schools and the absence of a strong nutrition focussed organisation to support school canteens

such as is present in other states. It has been difficult to acquire any information on nutrition issues in special schools; this is an area that could bear greater exploration.

3.4 Out of school hours care settings for 5 to 12 year olds

3.4.1 Size of the out of school hours sector

Out of school hours (OOSH) programs provide a childcare and developmental environment for children between 5 and 12 years of age before and/or after school, on curriculum days and/or in vacation time. Accurate figures on the number of programs are difficult to obtain, but there are an estimated 1400 to 1600 programs currently operating in Victoria. Approximately 1300 programs are registered with the federal Department of Health and Family Services and it is thought that there may be several hundred unregistered programs run by independent schools, private individuals or parent groups.

ABS data from the 1999 childcare survey indicate that over 40,000 Victorian children attend a formal before or after school program (ABS 2000:13) and Australia wide data suggest that around 12% of primary school age children attend out of school hours programs. Between 1997 and 1999 there was a 9.8% increase in the number of children attending OOSH programs in Victoria, with a 29% increase in staff over the same period. It is expected that this trend will continue as a result of changing workforce demographics (DHS 2001).

Table 3: Children attending out of school hours care services Victoria (1999)

OOSH Service type	Number of Children	Percentage of children in attendance
Before school only	1,961	5%
After school only	23,553	56%
Before & after school care	4,311	10%
Vacation care#	12,180	29%
Total	42,245	100%

Many children who access vacation care also attend before school and after school care or both.

Source DHS 2001:23

The majority of service operators in Victoria are state school councils, with other operators including Catholic schools, local government, community organisations such as the YMCA and the YWCA, neighbourhood houses and incorporated committees of management. From January 2001, private, for profit operators became eligible to take over existing community-based programs.

3.4.2 Current nutrition policy development and implementation

Quality Assurance

At the federal level the National Childcare Accreditation Council is currently working on the development of a national quality assurance system for OOSH programs. A *Draft Quality Practices Guide* that identifies quality practice indicators, was put out for consultation with the sector nationally earlier this year, and it is anticipated that the system will be implemented in July 2003. Like the LDC and FDC systems, the OOSH quality assurance system is based around quality areas, principles and indicators. *Quality Practice Area 8: Health, Nutrition and Wellbeing* has two relevant principles (Department of Family and Community Services 2002: 25-26):

Principle 8.1 Balanced and healthy eating is promoted by the service.

Satisfactory:

- Drinking water is readily available to all children whilst at the service.
- Where the service supplies food, quantity and variety is sufficient to meet requirements of school age children and the Australian Dietary Guidelines.
- Children with special dietary requirements have adequate and appropriate food provided by the service or the families.

Good Quality:

- Where the service supplies food and drink the menu is displayed for families.
- A written nutrition policy and procedure has been developed and is implemented consistently.
- Children are encouraged to suggest food to be provided as additional/cooking experiences by the service.
- The service promotes and discusses healthy eating choices with children.

High Quality:

- The menu includes foods from other cultures and meal times are used to discuss cultural similarities and differences.
- The service has information available & accessible for families on nutrition.
- The service encourages children to be involved in the planning and preparation of food to be provided.”

Principle 8.2 requires that staff implement effective and current food handling standards and hygiene practices.

Minimum Standards

The OOSH sector is similar to the FDC sector in that programs do not come under the Victorian Children’s Services Regulations except in relation to the ratio of carers to children. Programs operate within the framework of a set of national standards agreed to by states, territories and the Commonwealth in the late 1990s, but OOSH programs are awaiting decisions about the ways in which these standards are to be implemented and monitored.

3.4.3 Current state of resource and training development

The Eat Smart Play Smart Manual for OOSH programs appears to be the only resource specifically designed for this sector that specifically addresses nutrition and physical exercise. This manual development is one of the National Child Nutrition projects and is based at the National Heart Foundation of Australia in Victoria. The manual is funded for development, distribution and evaluation over a three-year period. Sustainability after this time remains to be resolved.

3.4.4 The key stakeholders

Clearly the key players include

NCAC at national level

DHS and Children’s Services Officers based in local government.

Department of Education Employment and Training, local government or community organisations as providers of premises

Community Child Care as the peak organisation for the OOSH sector.

Management of the program through school councils or local

government/community organisation equivalent

The OOSH staff who deliver the program.

The families who use the program.

3.4.5 Opportunities and barriers in nutrition policy development and implementation in out of school hours care settings

On the whole the OOSH sector is a relatively unregulated and under-resourced sector and the field is wide open for nutrition policy development and implementation. Current discussions about the nature and extent of minimum standards monitoring and the consultations on and redrafting of the quality assurance framework provide many opportunities for input and development.

Prior to development of the Eat Smart Play Smart manual, a needs analysis was undertaken, and then detailed consultation with the field was done on a draft manual. Many OOSH staff expressed great interest in having a resource to assist them in the areas of nutrition and physical activities. This process also identified a number of factors that need to be taken into account when designing resources to support policy development and adoption in OOSH programs, including:

The diversity of the sector.

The OOSH sector is growing and has an extremely diverse range of programs from one person (100 services) to large programs with several staff. Between 1997 and 1999, the number of children attending OOSH programs grew by 56% and staff by 19% (DHS 2001:33).

Staff profile

Staff come from a wide range of backgrounds with no clear requirement for training or qualifications. Few have any formal or even informal training in nutrition. Staff turnover is high and recruitment is often difficult. Staff are relatively poorly paid and the majority work on a casual basis (72% in before and after school programs, 77% in vacation care programs). Only 25% of before and after care staff are full time and 6% of vacation care staff. These figures clearly have implications for staff development, program quality and consistency of care and approaches.

Program planning limitations

Staff hours are often only slightly longer than the hours the children attend. Thus planning and training time is very limited and the capacity of staff to increase their capacity to deliver nutrition education and even healthy snacks is seriously limited.

Low priority

Management is very varied but many programs operate under the auspices of school councils. School councils vary in their interest in and support of OOSH programs and in their capacity to actively manage them.

Varied and often limited facilities and resources

OOSH programs are extremely diverse and have varied access to appropriate facilities. For example, some have a full kitchen, others do not even have access to a refrigerator or a stove or any way of heating food. Programs generally have extremely limited funds (some with as little as 40c a day per child) with which to purchase food.

Summary

The OOSH sector presents us with some important opportunities for public health nutrition policy development and is particularly underdeveloped at present. It is a rapidly growing sector, there has been practically no specific research or initiatives about nutrition in the OOSH sector, quality assurance and standards monitoring are in their infancy, a specific OOSH sector nutrition resource has only recently been released. Barriers also exist particularly in terms of financial and other resource constraints, the profile of the OOSH workforce and the diversity of arrangements for OOSH programs.

4. Conclusion

4.1 Assessment of the proposed settings

Table 4 presents an assessment of the potential settings against the factors that could be taken into account in determining where to focus phases 2 and 3 of the *Public Health Nutrition Policy Analysis Project*. Discussions will need to revolve around the relative importance given to the various factors.

Table 4: Assessment of settings

Critical aspect	Type of setting				
	Long Day Care	Kindergarten /Preschool	Family Day Care	Primary Schools	Out of School Hours Care
Potential to involve children from varied backgrounds across the state	High	High	High	Highest	High
Exposure to nutrition opportunities	High	Medium	High	High	Medium
Parent involvement potential	Medium	Medium	High as carers usually parents also	Medium	Medium to low
Effectiveness of nutrition interventions	Few studies; generally seen to be effective	Few studies specifically in kindergarten settings; preschool interventions generally seen to be effective	Few if any studies specifically in FDC settings; preschool interventions generally seen to be effective	Numerous studies in primary school settings; generally seen to be effective	No studies specifically of OOSH settings; primary school interventions generally seen to be effective
Current state of nutrition policy development	Medium, based around the NQIAS	Unknown as not part of NQIAS	Low but likely to rise because of entry into NQIAS	Not known but believed to be low in relation to food services at school	Low, but likely to rise with entry into national accreditation system
Current state of nutrition policy implementation	Medium	Ditto	Low	Low	Low
Current state of resource development to support implementation	Medium from a range of sources	Medium from a range of sources	Medium-one recent FDC-specific resource currently being evaluated	Curriculum=high; & Food services=low & not accessible	Medium-one key recent OOSH-specific resource currently being evaluated
Feasibility of involving key stakeholders	Potentially high	Potentially high	Potentially high	Medium in relation to teaching staff. Complex & potentially difficult in relation to food services.	Likely to be complex because of diversity of sector and of relative lack of organisation
Availability of data to assess impact & outcome of nutrition policy development	Medium	Low	Low	Low	Low

4.2 Summary

Significant opportunities for nutrition policy development and implementation are present in the five organised settings for 0-12 year olds described here. However, since the *Public Health Nutrition Policy Analysis Project* was conceived, and at the very moment when this document is being finalised, the state government has taken a high profile role in the area of child nutrition, and is discussing ways in which to promote healthy weight and prevent obesity in childhood. Announcements of new initiatives are expected. Decisions in relation to this project will have to be weighed in the light of these developments.

The key opportunity for public health nutrition policy work in the preschool sector, appears to build on existing structures, initiatives and achievements to maintain a momentum that is well under way particularly in LDCs and kindergartens, less so in FDC programs.

In the primary school sector, a priority for nutrition-focussed interventions is the food service area where developments are currently very limited in Victoria. Curriculum and resource development and teacher training in nutrition are underway to some extent but need continued focus and importantly, linkage of the curriculum and school food services in a whole of school approach remain seriously underdeveloped. Special schools remain an unexplored area.

The OOSH sector can be described as a setting ready for take-off. Nutrition policy development and adoption is in its infancy, and the time is ripe for significant input to this important area. Large and growing numbers of Victorian children use the setting, the regulatory and quality assurance framework is being drafted at the present time, an excellent resource has been developed specifically for this area and needs to be evaluated and sustained.

While nutrition policy development in these settings will be important for all Victorians, there is evidence that suggests the need for a focus on and sensitivity to specific groups in the community whose nutrition issues or lack of access to mainstream resources put them at particular risk, including culturally and linguistically diverse communities, people living on a low income and people with a disability. The government's *Best Start Project* is one that would bear investigation of ways in which collaboration could benefit children seen as at risk. This population based initiative recognises the importance of the early years in terms of health, education and social wellbeing, and aims to build resilience in children aged 0-8 years through partnerships involving a range of settings including preschool and school as well as primary health, maternal and child health, and hospitals.

Finally, in placing a focus on policy development and implementation in organised children's settings it is important to learn from the lessons of other public health campaigns and to view the specific focus as part of a broader public health promotion process. Comprehensive, multi-faceted, initiatives that are sustained over time with adequate resources and underpinned by research and evaluation can achieve important outcomes across the community. Public health nutrition policy development in organised children's settings will benefit from being undertaken in the context of such an initiative.

Appendix I Project brief

PROJECT BRIEF

Public health nutrition policy analysis and action plan for organised settings for children (0-12 years).

Introduction

The Eat Well Victoria Partnership (EWVP) is a group of key public health nutrition stakeholder organisations and individuals in Victoria that aims to:

- Provide a forum for partnerships and coordinated activities to measurably improve the nutrition related health of Victorians and
- Improve the capacity and infrastructure for effective public health nutrition intervention.

EWVP has identified children and families as a primary focus with emphasis on obesity prevention and increased consumption of fruit and vegetables. Eat Well Australia, the National Public Health Nutrition Strategy, provides the evidence and context for action in each of these areas:

- A focus on children recognises that they need good nutrition in order to develop and grow to their potential, and to be protected against chronic disease in later life. Food has a wider role than just nutrition. Educating children about healthy eating, social aspects and preparing food can promote good eating habits into adulthood. Nutrition issues affecting Indigenous children are particularly complex.
- The prevalence of obesity in Australia doubled in the 10 years to 1995 from 9% to 18%. For Aboriginal and Torres Strait Islander peoples, about 25% of males and 29% of females were classified as obese in 1994. Unhealthy weight is a major contributor to ill health and places a heavy burden on individuals and on social, economic and health systems.
- On average, Australians do not consume enough vegetables and fruit for optimal health. We eat four to five serves or less per day, while epidemiological studies show strong health benefits from eating seven serves per day.

A major focus for activity for EWVP in 2002-2003 will be a process of policy analysis in the area of nutrition and healthy eating for children in Victoria (0-12 years) in organised settings. This has been selected based on available evidence and knowledge of effective approaches to promoting nutrition, healthy eating and the Victorian context. The long term goal is that all (appropriate) organised settings for children have comprehensive public health nutrition policies in place.

This work will primarily focus on nutrition and healthy eating but will consider and make comment on other issues as necessary. This will include consideration of:

- Physical activity as a key determinant with healthy eating for obesity prevention and healthy weight.
- Food safety as a related issue that may influence opportunities and barriers for public health nutrition policy.

Project Aim

The aim of the **POLICY ANALYSIS PROJECT** is to provide a rationale and framework for the Eat Well Victoria Partnership to advocate/support the development and adoption of public health nutrition policy in organised settings for children 0-12.

Project Tasks

This project will involve:

1. A scoping review to identify potential settings (organised settings for children aged 0-12 years) where activities could be undertaken to support the development or enhancement of public health nutrition policy.
2. Analysis of existing nutrition related policy and policy context and its capacity to contribute to public health nutrition outcomes.
3. Identify public health nutrition gains (including evidence for such gains) that could be achieved through improved public health nutrition policy and related activities across age groups and settings.

A short list of settings will be selected for further action in consultation with the project reference group who in turn will make recommendation to the EWVP.

In relation to the selected setting(s), carryout consultations, collect data and review evidence to describe:

4. The potential and capacity for new/enhanced policy to achieve public health nutrition outcomes within the Victorian setting.
5. Opportunities and barriers to the adoption of new/enhanced public health nutrition policy (including consideration of organisational and capacity contexts).
6. The role of EWVP to support new/ enhanced public health nutrition policy (in the context of the findings of point 5 above).
7. An action plan for EWVP to advocate/support the development review, and actioning of new/enhanced public health nutrition policy in selected organised settings for children (0-12 years).

Intended Products

Product 1:

A report responding to Tasks 1-3 providing information on the current Victorian situation relating to organised settings for children and the opportunity and potential benefits from enhanced/new public health nutrition policy.

Product 2:

A report (or series of reports as appropriate) responding to Tasks 4-6 detailing the need for new/enhanced public health nutrition policy in the selected organised setting(s) and opportunities to progress these.

Product 3:

An action plan for EWVP to support the development, adoption, and actioning of new/enhanced public health nutrition policy in selected organised settings for children (0-12 years).

Project Advisory Group

A Project Advisory Group will be established with representation from EWVP, Department of Human Services and VicHealth. This group will provide advice to the project manager including the short listed settings to be considered in more detail under task 4-7.

Timeline

12 months

Appendix II Major policy and program initiatives in nutrition in Australia and in Victoria 1981 to 2001

National initiatives	Victorian initiatives
1979 National Food and Nutrition Policy developed.	1980 Ministry of Education publishes <i>Nutrition Guidelines for School Canteens</i>
1981 The federal government sponsored the National Nutrition Education Conference. The conference recommended, inter alia, national nutrition education should be co-ordinated and a national nutrition education resource centre should be established.	
	1984 Ministers for Health and Agriculture jointly issued a discussion paper <i>Making healthy choices easy choices: Towards a food and nutrition policy for Victoria</i>
1985 Federal government established the Better Health Commission it identifies nutrition as a priority area for action, funds a National Nutrition Survey, and establishes the Nutrition Taskforce.	1985 Victorian Food and Nutrition Project set up by the Health Promotion Unit of the then Health Department Victoria and overseen by a Steering Committee with representatives from the Ministry of Health, Education and Agriculture and Deakin University. Departmental funds were initially 'outheoused' to the Australian Nutrition Foundation and then within months to the Dept of Human Nutrition at Deakin University, (Powles et al 1992:51). After 1987 VHPF took over as major funding body.
1986 The Nutrition Taskforce releases a paper <i>Nutrition Education in Schools</i> that reported that nutrition education in schools was not effective.	1987 Victorian government launches the Food and Nutrition Policy. The Food and Nutrition Project is the main body to implement the Food and Nutrition Policy. 1987 Victorian Health Promotion Foundation established, a fair proportion of VicHealth sponsorships with nutrition elements managed through the FNP.
1989 NHMRC subcommittee on Nutrition Education releases a detailed document that suggests ways of implementing the <i>Dietary Guidelines for Australians</i> . This detailed document covers research, evaluation, data collection, monitoring, advertising guidelines, community education, mass media campaigns, workplace education, food labelling, curriculum development, school canteen policy development and implementation, and teacher training, and also specific issues for particular population groups including mothers and infants, children and adolescents, the elderly, low income groups, aboriginal people, ethnic communities, the overweight and obese. This document was based on the assumption "of the importance of a multiple strategy, multi-sectoral approach to implementations and of the need to involve all sectors, public and private, which could affect the implementation of nutrition education programs in	1988 Interdepartmental Committee on Food and Nutrition established with representation from Health, Agriculture & Rural Affairs, Education & Industry, Technology & Resources. A Food and Nutrition Community Consultative Committee also put in place. Numerous initiatives carried out within FNP, including: <ul style="list-style-type: none"> • Funding a position in Education Dept to undertake systematic revision of curricular materials for Victorian schools. A range of school related resources produced, including, <i>Guidelines for School Canteens</i> overseen jointly by the Ministry of Education & the Department of Health • Catering Improvement Program • Real Meals initiative

Australia.” (NHMRC 1989:19)	<ul style="list-style-type: none"> • Fruit and Veg Campaign • Food Sen\$e • Working Together • Schools Program
<p>1992 National Australian Dietary Guidelines endorsed by the NHMRC as official source of advice to the general population about healthy food choices.</p> <p>1992 Federal Government launches the National Food and Nutrition Policy as part of the National Better Health Program.</p> <p>1992-1995 Federal government awards the National Nutrition Education in Schools Project to a consortium consisting of the Curriculum Corporation, Queensland University of Technology and Queensland University.</p>	<p>1988-1992 Health and Fitness Project in Schools (HIPS) funded by VicHealth. Monash Uni to work with 42 primary schools to implement HIPS including a healthy eating component. HIPS can be seen as a precursor of the HPS program.</p> <p>1992 Nutrition Victoria (an initiative of FNP) incorporated as a mechanism to bring together a range of organisations such as ACCV, DU, NHFA, food industry etc. Nutrition Victoria was active for a couple of years 1992-94.</p>
<p>1995 National Nutrition Survey conducted 10 years after the 1985 survey.</p> <p>1995 Australian Dietary Guidelines for Children and Adolescents endorsed by the NHMRC as official national guidelines for dietary choices and nutritional advice for young people. These guidelines are currently under review.</p>	<p>1995/6 VicHealth ceases funding for the Food and Nutrition Project.</p> <p>1995: Victorian government adopts a Food and Nutrition Policy with the overall aim “to improve the health of all Victorians through better nutrition”: Specific goals include</p> <ul style="list-style-type: none"> • To increase the proportion of the Victorian population consuming a diet that is nutritionally appropriate and consistent with the Australian Dietary Guidelines. • To support efforts within the food supply system that improve the nutritional quality of the diet and maintain the safety of food. • To promote the benefits of a healthy diet to consumers and to increase nutrition knowledge and awareness in all sectors responsible for providing healthy food choices. • To support sustainable food production initiatives that provide nutritious food to current and future generations of Victorians.
	1996-1999 Health Promoting Schools funded by VicHealth as a joint initiative of Deakin Uni and DEET.
1997-1998 Federal Department of Health and Family Services funds a process for discussing the revision of Recommended Dietary Intakes (as it is 17 years since last one).	<p>1997: The remnants of the Food and Nutrition Project finally concluded.</p> <p>1997: Victoria adopts a strategic framework for the implementation of the Food and</p>

<p>1998 Australian Guide to Healthy Eating launched: a background information for nutrition educators developed by Department of Health and Family Services, the Children's Health Development Foundation and Deakin University.</p>	<p>Nutrition Policy: <i>Healthy eating, Healthy Victoria A Lasting Investment: A Strategic Framework for the Implementation of the Victorian Food and Nutrition Policy.</i></p> <p>Nutrition Advisory Committee established to advise the government on the implementation of the framework.</p>
<p>1999 Federal government, through the National Public Health Partnerships gets involved in Health Promoting Schools.</p>	<p>1996/7? Victoria takes up the Health Promoting Schools concept as a joint initiative between the Faculty of Health and Behavioural Sciences at Deakin University and the Victorian Department of Education, Employment and Training, funded by VicHealth. The aim is to establish and consolidate the HPS framework in Victoria as the basis for the schools' approaches to improve the health of students, staff and the wider community.</p>
<p>2000: Federal Department of Health and Family Services within the framework of the National Public Health Partnership and the Strategic Inter-Governmental Nutrition Alliance (SIGNAL) publishes <i>Eat Well Australia: A Strategic Framework for Public Health Nutrition, 2000-2010.</i></p> <p>2000 Federal Department of Health and Family Services funds National Child Nutrition Projects (20 in Victoria) independently of the above) for three years 2000-2003.</p>	<p>2000 Victorian Food and Nutrition Forum held to identify and document the structural and capacity issues that need to be addressed to achieve a high quality and sustainable public health nutrition program in Victoria.</p> <p>2000 First statewide Public Health Nutritionist appointed in DHS.</p>
	<p>2001: Victoria establishes the Eat Well Victoria Partnership to report to the Director of Public Health and to raise the profile of and the level of debate around public health nutrition and to provide strategic direction on public health nutrition issues.</p>
	<p>2002: Victorian Government sets up Citizen's Obesity Summit</p>

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