Overweight and obesity:

Balancing the scales for vulnerable children

October 2016

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NSW Council of Social Service

About NCOSS

The NSW Council of Social Service (NCOSS) works with and for people experiencing poverty and disadvantage to see positive change in our communities.

When rates of poverty and inequality are low, everyone in NSW benefits. With 80 years of knowledge and experience informing our vision, NCOSS is uniquely placed to bring together civil society to work with government and business to ensure communities in NSW are strong for everyone.

As the peak body for health and community services in NSW we support the sector to deliver innovative services that grow and evolve as needs and circumstances evolve.

Published October 2016

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MESSAGE FROM THE CEO

In public debate about one of our community's most pressing health concerns – the growing severity of our obesity epidemic – we often forget that this issue overwhelmingly affects our most vulnerable. And obesity is not just a symptom of poverty, it also makes it harder to overcome obstacles to a better life.

By focusing on overweight and obesity as merely a personal issue we do those people who are most affected a severe injustice. And by paying insufficient regard to the many and complex factors that contribute to obesity – from our physical environments to our daily commutes and our household budgets – we are failing to bring about change where it is needed most.

We know children and young people from low socioeconomic backgrounds are significantly more vulnerable to overweight and obesity, which further entrenches the health and social disadvantage they face throughout their lives. The Premier's Priority of reducing childhood overweight and obesity by 5% over ten years provides an opportunity to address the growing gap in health outcomes and break this cycle of disadvantage.

To ensure children and young people from low socioeconomic backgrounds are not left further behind, all efforts to achieve the Premier's Priority must have a focus on equity. We must look at *why* these children are more likely to be overweight, and develop solutions that address the many and complex causes of their disadvantage and limited choice.

Drawing on expertise from both academia and the community, this report begins that work, and identifies priority actions towards an equitable response to the problem of overweight and obesity. It has been shaped by community consultation with our members and key stakeholders, including through the Community Sector Roundtable NCOSS convened on 27 June 2016.

In Section One and Two we outline the problem of childhood overweight and obesity for vulnerable children and its causes. We situate a young person's vulnerability to overweight and obesity in the context of interrelated factors in their neighbourhood, family and personal environments, as it is important to recognise that these factors determine – and often constrain – an individual's ability to eat healthily and be active. We know that structural factors must be addressed as part of a focus on equity.

Section Three summarises current responses to overweight and obesity rates amongst children and young people in NSW. While the NSW *Healthy Eating Active Living Strategy 2013-2018* recognises people from lower

socioeconomic backgrounds as a cohort requiring specific attention, responses have failed to arrest the growing disparity in weight outcomes along the socioeconomic gradient.

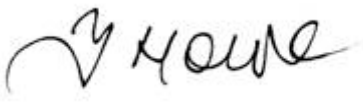
Finally, Sections Four and Five identify actions that would better support our most vulnerable children and young people to be of healthy weight. Effective implementation of these actions will require us all to work together; we need co-ordination across all levels of government as well as the private and non-government sectors.

In ensuring responses address the needs of vulnerable groups, we need a two-pronged approach:

1. Efforts focused on high-need communities with additional resources directed to areas of concentrated disadvantage;
2. Tailored strategies to support children and young people from particularly vulnerable backgrounds across the State that ensure the accessibility of existing programs and identify where tailored state-wide initiatives are needed.

But we also need systemic change. We recognise that reducing overweight and obesity among the most vulnerable children and young people is a complex issue with no single solution. Health and well-being need to become more prominent factors in decision-making processes. This is a first step to creating healthier environments that encourage, or in many cases make possible, healthier lifestyles. All Governments should work together to ensure healthy food is affordable and available, and to limit young peoples' exposure to unhealthy food marketing. We need a cross-agency, cross-sectoral response which targets the causes of weight inequalities.

We look forward to continuing to work across these sectors with the NSW Government and our members to close the equity gap in obesity rates, and give all children and young people the very best chance at a healthy life.



Tracy Howe

Chief Executive Officer

Summary of Recommendations

An equity focus

1. Ensure the Premier's Priority of tackling childhood obesity has a sub-target focussed on reducing the gap in overweight and obesity rates between children and younger people from higher and lower socioeconomic backgrounds.

2. Continue to invest in the monitoring of overweight and obesity rates using objective measures that provide an accurate indication of differences in weight status and associated behaviours by socioeconomic status.

Whole-of-community approaches

3. NSW Health should direct additional resources towards Local Health Districts and Local Governments to mobilise a whole-of-community approach to reducing childhood overweight and obesity in low socioeconomic areas. This should include the appointment of child obesity coordinators to facilitate:
    - A coordinated cross-sectoral approach to addressing local level needs and priorities.
    - Support to implement existing programs.
    - The development of local initiatives.

Targeted initiatives

4. NSW Health should lead cross-agency efforts to develop the tailored strategies needed to support children and young people from particularly vulnerable backgrounds across the State to be of healthy weight (including those from Aboriginal and Torres Strait Islander, CALD, and refugee backgrounds, those with disability, and those in the out-of-home care and juvenile justice systems). This should involve coordination and co-design with the non-government sector as well as close consultation with children and young people themselves. These strategies should:
    - Ensure the accessibility of existing programs.
    - Resource the development and implementation of state-wide initiatives where needed.

5. Invest an additional $25 million per annum in the state-wide rollout of nurse-led home visiting programs for vulnerable families with children aged 0-2. In addition, the NSW Government should further investigate the potential to embed home-based early intervention programs such as Healthy Beginnings into these home visiting programs.

Healthy environments

6. Include health and well-being as an objective in the *Environmental, Planning and Assessment Act 1993*.

7. Amend legislation to ensure health impact assessments are required for all major new developments.

8. The NSW Department of Planning and Environment, in collaboration with local councils and building on the work of the Greater Sydney Commission, should conduct a mapping exercise documenting the quantity, quality and accessibility of green spaces across the Greater Metropolitan Region, and invest additional resources to create or improve green spaces where required. Efforts should be made to ensure State Government resources are equitably distributed according to socioeconomic status.

9. The NSW Government should eliminate unhealthy marketing in spaces it owns or leases and take action to remove unhealthy food marketing, promotion and sponsorship of all children's sport.

National efforts

The NSW Government should take a lead on this and through the Council of Australian Governments (COAG) should:

10. Support the recommendations made by the Australian Council of Social Service (ACOSS) in relation to the transfer payments system including;
    - Indexing family payments to wage movements,
    - Increasing the Family Tax Benefit Part A rate for families with children over 5 years by $30 per week,
    - Replacing Family Tax Benefit Part B for single parent families with a Sole Parent Supplement set at the level of the current Part B payment for the younger child, and
    - Increasing Rent Assistance.

11. Advocate for the introduction of a tax on sugar sweetened beverages (SSBs).

12. Champion efforts to protect children from unhealthy food marketing through stronger advertising codes and regulations.

Introduction

Overweight and obesity in children and young people is a major health concern,[1] and we know children from low-income and disadvantaged backgrounds are at much greater risk of being overweight or obese.[2] This can have a profound and enduring impact on their lives, further entrenching health and social disadvantage.

Children who are overweight or obese are more likely to suffer from a range of health problems.[3] They are often socially marginalised and have lower self-esteem. [4] They miss school more frequently, and have poorer educational outcomes. [5] Overweight children are more likely to be overweight as adults,[6] and will continue to experience social, educational and financial disadvantage. They will be predisposed to a range of health conditions including diabetes and heart disease,[7] and ultimately, will have a shorter life expectancy. [8]

We therefore welcome the current focus on reducing overweight and obesity rates of children, and the inclusion of a 5% reduction on current rates as one of the NSW Premier's Priorities.[9] This priority recognises that childhood obesity is a systemic problem, requiring whole-of-Government solutions to complement existing actions being taken under the Healthy Eating Active Living (HEAL) Strategy.

It is imperative that efforts aimed at achieving this target focus on low-income and vulnerable children. If we fail to take the unique circumstances of these children into account, the solutions we invest in will fail to benefit the most vulnerable, widening existing health inequities. In supporting such a focus, this report draws on a detailed review of the academic literature as well as the expertise of our members and other key stakeholders.

Here we hope to build on existing work to catalyse a more holistic and focused approach to supporting vulnerable children and young people to be of healthy weight.

[1] The World Health Organisation (WHO) defines 'overweight' as having a Body Mass Index (BMI) of more than 25 and 'obese' as have a BMI of more than 30. See WHO (2015) "Fact sheet: Overweight and Obesity".
[2] Jansen PW, et al (2013) Family and Neighbourhood Socioeconomic Inequalities in Childhood Trajectories of BMI and Overweight: Longitudinal Study of Australian Children. PLoS ONE 8(7):
[3] World Health Organization (2016) Report of the commission on ending childhood obesity.
[4] Sahoo K. (2015) Childhood obesity: causes and consequences. *J Family Med Prim Care*.4(2): 187–192.
[5] Schwimmer JB, Burwinkle TM, Varni JW (2003). Health-related quality of life of severely obese children and adolescents. *JAMA* 289:1813–9.
[6] Simmonds et al (2016) Predicting adult obesity from childhood obesity: a systematic review and meta-analysis, *Obesity Reviews*, 17: 95–107.
[7] Australian National Health Prevention Agency (2014) *Obesity Prevalence Trends In Australia: Evidence Brief*.
[8] Ibid.
[9] NSW Government (2015) *Making It Happen: Tackling Childhood Obesity*.

Section 1: The case for an equity target

1.1 Children from disadvantaged groups are at greater risk

In developed countries people on low incomes consistently experience overweight and obesity at a greater rate than their wealthier counterparts.[10,11] And in NSW, people from lower socioeconomic backgrounds are more than twice as likely to be obese as people from wealthier backgrounds.[12]

The pattern begins in childhood and becomes more pronounced with age.

- By the age of four, children from low socioeconomic backgrounds are already more likely to be overweight than their wealthier peers,
- By age ten, differences in BMI between children from high and low socioeconomic backgrounds double,
- Children from low socioeconomic backgrounds are almost three times more likely to be persistently obese throughout childhood than those from more advantaged backgrounds. [13]

1.2 The 'equity gap' is increasing

Efforts to tackle childhood obesity do not affect all young people equally. The latest NSW Schools Physical Activity and Nutrition Survey (SPANS) demonstrates that while overall obesity rates have stabilised, obesity rates among children from lower socioeconomic backgrounds have increased.[14]

1.3 Obesity contributes to disadvantage

Obesity can have a profound and enduring impact on a person's life course. The cumulative theory of disadvantage explains that the earlier disadvantage begins, the more serious the impact is likely to be.[15] During childhood, being overweight can lead to poor health, educational and social consequences:

- Children who are overweight have an increased risk of developing gastrointestinal, musculoskeletal and orthopaedic diseases.[16,17] This has significant effects from early on in children's lives; a recent NSW study found that children aged two to five years old who were obese had 60 per cent higher total

[10] Sobal J, Stunkard AJ.(1989) *Socioeconomic status and obesity: a review of the literature. Psychological Bulletin*, 105: 260-75.
[11] McLaren L. (2007) "Socioeconomic Status and Obesity", *Epidemiological reviews.* 29 (1): 29-48.
[12] Centre for Epidemiology and Evidence. Health Statistics New South Wales. Sydney: NSW Ministry of Health. Available at: www.healthstats.nsw.gov.au Accessed 4 March 2016.
[13] Jansen PW, et al (2013) Family and Neighbourhood Socioeconomic Inequalities in Childhood Trajectories of BMI and Overweight: Longitudinal Study of Australian Children. PLoS ONE 8(7):
[14] Hardy L, et al. (2010) NSW Schools Physical Activity and Nutrition Survey (SPANS) Full Report. Sydney: NSW Ministry of Health.
[15] Ferraro KF, Kelley-Moore JA. (2003) "Cumulative Disadvantage and Health: Long-Term Consequences of Obesity?" *American sociological review*. 68(5):707-729.
[16] World Health Organization (2016) Report of the commission on ending childhood obesity.
[17] Reilly JJ, et al. Health consequences of obesity. *Arch Dis Child* 2003; 88:748-752

healthcare costs and were two-three times more likely to be admitted to hospital than children of a healthy weight.[18]

- Overweight children are more likely to have dental decay than non-overweight children.[19] This is not only a result of shared risk factors, but also due to the direct impact of obesity on oral health.[20]
- Social consequences of overweight, such as bullying or exclusion, can be significant; [21] in turn contributing to low self-esteem, a negative body image, and increased risk of eating disorders and psychological problems.[22]
- A combination of health and social disadvantage can affect school attendance, leading to poor academic results. [23]

The relationship between weight and poor outcomes across a range of domains continues into adulthood, with obese children and adolescents around five times more likely to be obese as adults.[24] Obese adults are more likely to develop, or be prone to, a range of health conditions including high blood pressure, type 2 diabetes, coronary heart disease, stroke, arthritis, and numerous types of cancer.[25]

Compared to adults of a healthy weight, life expectancy of obese adults is reduced:

- by 2-4 years for people with a BMI between 30 and 35 kg/m
- by 8-10 years for people with a BMI between 40 and 45 kg/m[26]

The Productivity Commission has estimated people who are overweight bear 90% of the costs of obesity in terms of financial costs (including healthcare costs, productivity losses, career costs, and indirect costs) and loss of well-being.[27] Excess weight is also linked to a lower than average income and employment discrimination. [28] With these costs often compounding the experience of disadvantage, it is clear that obesity and socioeconomic disadvantage can be mutually reinforcing.

1.4 Efforts must focus on those most at risk

Efforts to achieve the Premier's Priority of reducing overweight and obesity rates of children by 5% should incorporate a clear and explicit focus on children experiencing poverty and disadvantage. In order to both guide

[18] Hayes A el al (2016) "Early childhood obesity: Association with healthcare expenditure in Australia", *Obesity (Silver Spring)*, 4:1752-1758.

[19] Tripathi S, Kiran K, Kamala BK (2010) Relationship between obesity and dental caries in children –a preliminary study. Journal of International Oral Health 2(4):65-72

[20] Modéer T, et l (2010) Association Between Obesity, Flow Rate of Whole Saliva, and Dental Caries in Adolescents. Obesity (Silver Spring) 18(12):2367-73.

[21] Sahoo K, "Childhood obesity: causes and consequences", (2015)J Family Med Prim Care. 2015 Apr-Jun; 4(2): 187–192.

[22] Taylor VH, et al (2013) The impact of obesity on quality of life *Best Practice & Research Clinical Endocrinology & Metabolism*; 27:139-146.

[23] Schwimmer JB, Burwinkle TM, Varni JW (2003) Health-related quality of life of severely obese children and adolescents *JAMA* 289:1813–9.

[24] Simmonds et al (2016) Predicting adult obesity from childhood obesity: a systematic review and meta-analysis *Obesity Reviews*, 17: 95–107.

[25] Australian National Health Prevention Agency (2014) *Obesity Prevalence Trends In Australia: Evidence Brief.*

[26] Ibid.

[27] Crowle, J. and Turner, E. (2010), *Childhood Obesity: An Economic Perspective*, Productivity Commission Staff Working Paper, Melbourne.

[28] Crawley, J "The Impact of Obesity on Wages "The *Journal of Human Resources*, 39 (2): 451-474.

and reinforce a focus on low-income children, a sub-target focused on reducing the gap in overweight and obesity rates between children and young people from higher and lower socioeconomic backgrounds should support the Premier's Priority. This sub-target should be publically reported on.

Without an explicit focus on equity, interventions aiming to reduce childhood obesity rates have the potential to exacerbate the social gradient, achieving results for children and young people from higher socioeconomic backgrounds but leaving their less advantaged peers further behind. While this was recognised by NSW Health in the development of an 'Equity Toolkit' to guide implementation of the Healthy Children Initiative,[29] the focus on equity should guide all policy responses to the Premier's Priority.

We note that other jurisdictions have incorporated equity targets in population health initiatives.[30]

The effective implementation of an equity target requires continued monitoring of the relationship between a child or young person's weight status and socioeconomic status. To this end, the NSW Government should continue to invest in the monitoring of overweight and obesity rates – such as the NSW Schools Physical Activity and Nutrition Survey – using objective measures that provide an accurate indication of differences in weight status and associated behaviours by socioeconomic status.

Recommendation 1: Ensure the Premier's Priority of tackling childhood obesity has a sub-target focused on reducing the gap in overweight and obesity rates between children and young people from higher and lower socioeconomic backgrounds. This target should be publically reported on.

Recommendation 2: Continue to invest in the monitoring of overweight and obesity rates using objective measures that provide an accurate indication of differences in weight status and associated behaviours by socioeconomic status.

[29] NSW Health NSW Healthy Children Initiative Equity Toolkit .
[30] Loring, B. and Robertson A. (2014) *Obesity and inequalities: Guidance for addressing Equality in Overweight and Obesity*, World Health Organisation, Denmark, 12.

Section 2: Understanding factors affecting childhood obesity

The conditions in which people are born, grow and live, play a significant role in determining their health outcomes, including their propensity to obesity. Recognition of the social determinants of health contributes to an understanding why many of the factors that contribute to unhealthy weights impact more strongly on people from lower socioeconomic backgrounds. [31,32,33]

At its core, obesity is caused by an imbalance between the amount of energy taken in through food and drink and the amount expended through activity. Policy responses to obesity therefore often focus on an individual's behaviour, and while they aim to help people make healthier lifestyle choices, they pay much less attention to the context in which people live, learn, work or play.

For all people – and for children in particular – dietary and activity patterns are strongly influenced by the environment around them. The neighbourhood in which a child spends time, the information they see, and the behaviours they observe are just some of the factors that shape their ability to eat well and be active. If efforts to reduce childhood overweight and obesity do not also look to address the broader context in which an individual's choices are made – and indeed the factors that limit these choices – responses will meet with limited success.

Food security, for example, is a critical social determinant of health,[34] with people who do not have reliable access to a sufficient quantity of affordable, nutritious food, considerably more likely to eat high fat diets and be obese.[35] No amount of knowing about healthy food choices will help those people who simply cannot afford to make these choices.

To highlight how various factors intersect with socioeconomic status in contributing to the development of overweight and obesity, this report borrows from Davison and Birch to create a simple conceptual framework.[36] This framework (illustrated at Figure 1) takes an ecological approach that considers the context in which a person is located in order to understand how a particular characteristic, such as obesity, emerges. The factors in the outer layers affect those in the inner layers, culminating in a child's behaviour. Viewed in this way, it

[31] Food Research and Action Centre (2015) *Why Low-Income and Food Insecure People are Vulnerable to Obesity*.
[32] Loring, B. and Robertson A. (2014) *Obesity and inequalities: Guidance for addressing Equality in Overweight and Obesity*, World Health Organisation, Denmark, 17.
[33] Vic Health (2004) *A review of the literature describing the link between poverty, food insecurity and obesity with specific reference to Australia.*
[34] Nolan, M. et al (2006) Food insecurity in three socially disadvantaged localities in Sydney, Australia. *Health Promotion Journal of Australia*, *17*(3), 247-254.
[35] Riedpath D et al, (2002). An ecological study of therelationship between social and environmental determinants of obesity. *Health and Place* 8: 141-45.
[36] Davison, K.K. and Birch, L.L. (2001) 'Childhood overweight: a contextual model and recommendations for future research', *Obesity Reviews*, vol. 2, no. 3, 159–71 .

becomes easier to understand how factors that contribute to unhealthy weight can have a cumulative impact on people who experience socioeconomic disadvantage.[37]

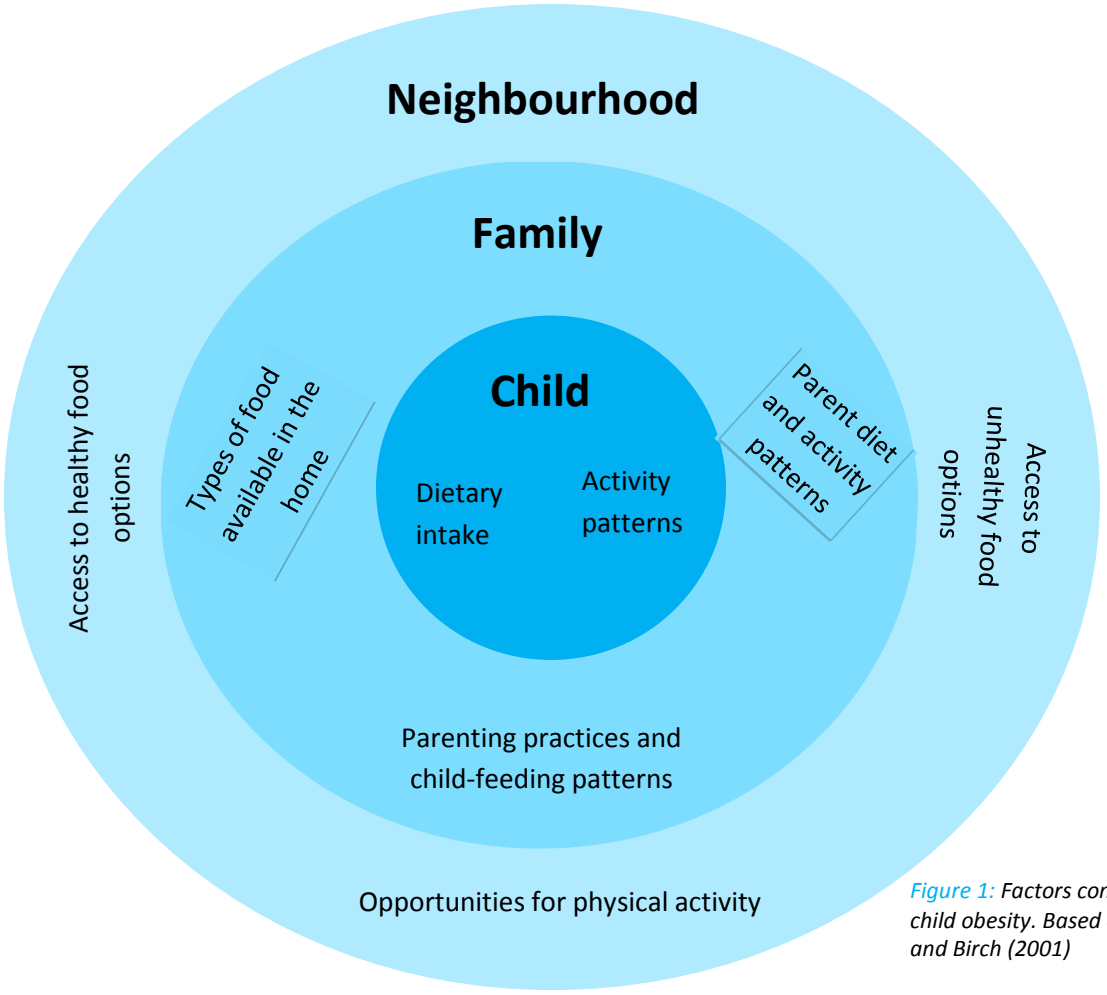


Figure 1: Factors contributing to child obesity. Based on Davison and Birch (2001)

The following factors are considered in more detail below.

1. **Neighbourhood**
   - Access to healthy food options
   - Access to unhealthy food options
   - Opportunities for physical activity

[37] Kennedy L, Ling M (1997) "Nutrition education for low-income groups – Is there a role?" In *A review of the literature describing the link between poverty, food insecurity and obesity with specific reference to Australia*

2. **Family**
    - Types of food available in the home
    - Parent diet and activity patterns
    - Parenting practices and child-feeding patterns
3. **Child**
    - Dietary intake
    - Activity patterns

We also note that many of the factors that contribute to child overweight and obesity also contribute to poor oral health, and that like obesity, dental decay is one of the most prevalent chronic diseases in childhood. In NSW approximately 40% of children aged 5–6 years have untreated — or have experienced — dental disease with a much greater burden of ill health on people experiencing poverty and disadvantage. [38]

2.1 Neighbourhood

Children from low-income families tend to live in obesogenic environments**;** neighbourhoods where there are fewer opportunities for physical activity, where it is harder to access healthy food options, and where there is greater exposure to unhealthy food options.

Opportunities for physical activity

Low-income neighbourhoods often have fewer parks, green spaces, and recreational facilities than higher income neighbourhoods,[39] making it more challenging for children and families living in these neighbourhoods to lead physically active lifestyles. Limited access to such resources is a risk factor for obesity,[40] with recent research demonstrating that for boys in particular, the presence of neighbourhood green space is linked to increased physical activity and a reduction in television viewing.[41]

[38] Centre for Oral Health Strategy NSW. The New South Wales Child Dental Health Survey 2007. Sydney: NSW Department of Health, 2009. Available at www.health.nsw.gov.au/cohs

[39] Astell-Burt, T. et al (2013) Do low-income neighbourhoods have the least green space? A cross-sectional study of Australia's most populous cities. *BMC Public Health,* 14:292.

[40] Lachowycz, K. and Jones, A. P. (2011) Greenspace and obesity: a systematic review of the evidence. Obesity Reviews, 12: Dunton et al (2009), "Physical environmental correlates of childhood obesity: a systematic review", *Obesity Reviews*, 10: 393–402

[41] Sanders, T. et al (2015) The influence of neighbourhood green space on children's physical activity and screen time: findings from the longitudinal study of Australian children. *International Journal of Behavioural Nutrition and Physical Activity,* 12: 126.

Access to healthy food options

There is extensive research showing that low-income neighbourhoods have poorer access to healthy food,[42] and to a wide variety of fruit and vegetables.[43] Access to healthy food at the neighbourhood level has been shown to have a significant impact on the risk of obesity.[44,45]

Barriers to accessing healthy food are compounded in very low-income households that are less likely to have and use their own vehicle for regular food shopping than more advantaged households.[46] This means that it is harder to compensate for the lack of access to fresh fruit and vegetables nearby.

Access to unhealthy food options

While it can be harder to find healthy food choices in low-income neighbourhoods, it is also easier to access unhealthy options – a phenomenon known as 'food deserts'.[47]

Research from the UK shows that areas with high levels of poverty and deprivation are more likely to have a greater density of fast food outlets,[48] and as shown in Figure 2, the same is true in Australia.[49]

The placement of fast-food and takeaway outlets is of particular concern when it comes to influencing the health behaviours of children and young people. In areas with higher levels of disadvantage, both primary and secondary schools are more likely to be in closer proximity to fast food restaurants.[50]

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[42] Astell-Burt, T., Feng, X (2015) Geographic inequity in healthy food environment and type 2 diabetes: can we please turn off the tap? *The Medical Journal of Australia*, September 2015.
[43]T The Cancer Council NSW (2007) NSW Healthy Food Basket Cost, Availability and Quality Survey.
[44] Larson, N. et al. (2009) Neighborhood environments: disparities in access to healthy foods. *U.S. American Journal of Preventive Medicine,* 36(1), 74-81
[45] Bell, J. et al (2013) Access to Healthy Food and Why It Matters: A Review of the Research.
[46] Food Research and Action Centre (2015) *Why Low-Income and Food Insecure People are Vulnerable to Obesity*.
[47] Colvin, M, and Lavoipierre, A (2015) 'Food deserts': Grocery dead zones have serious health impacts for residents, experts say.
[48] Public Health England (2014) *Obesity and the environment: Fast food outlets*.
[49]Thornton, LE, et al (2016) 'Fast food restaurant locations according to socioeconomic disadvantage, urban–regional locality, and schools within Victoria, Australia'. *SSM-Population Health*.
[50] Ibid.

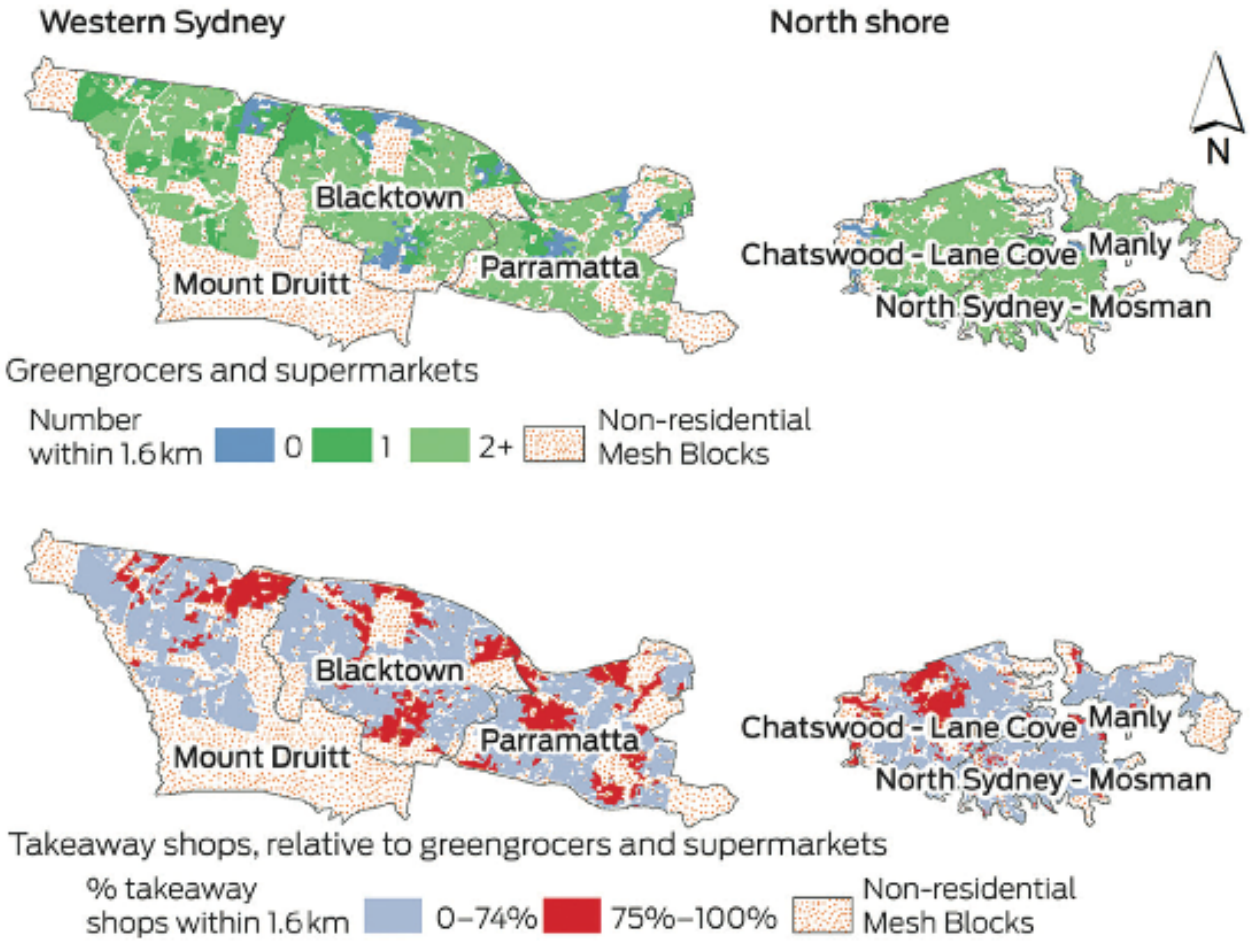

Figure 2: Food environments in selected areas of Western Sydney and the North Shore. Taken from Astell-Burt, T and Feng, X (2015).

2.2 Family

Types of food available in the home

Families with little disposable income can find it very difficult to afford a healthy diet, with 6.8% of disadvantaged households with children under the age of 15 experiencing food insecurity in NSW.[51] The risk of obesity is 20 to 40% higher in individuals who are food insecure.[52]

[51] Health Statistics NSW (2013) Data from NSW Population Health Survey (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health.
[52] Vic Health (2004) A review of the literature describing the link between poverty, food insecurity and obesity with specific reference to Australia

The inadequacy of income support allowances, together with the high cost of housing[53] are two major causes of strain on many household budgets. This can impact a family's ability to afford healthy food, with rent or housing repayments taking priority in the family budget, and groceries being one of the only 'discretionary' items.

On a limited budget, a healthy diet may simply be unaffordable. The NSW Cancer Council's Healthy Food Basket Survey found that families in the lowest quintile would need to spend 56% of their average weekly income on food to afford a healthy food basket.[54] Families in this situation may either skip meals, or cope by substituting cheaper, more energy dense foods such as refined grains, added sugars, and added fats for healthy food options which generally cost more.[55] Healthy food can also be more expensive in remote areas,[56] and in some areas with low socioeconomic status. [57]

In assessing the affordability of healthy food, the following must also be considered:

- The time-cost associated with accessing, purchasing and preparation of healthy food. In many low-income families parents are time-poor. They may live further from work, work longer, less sociable hours, and be unable to afford home-help. They therefore have less time to prepare healthy meals.[58]
- The ability to store healthy food. Very low-income families may not have access to refrigeration.[59]
- The cost of small portions versus buying in bulk. People on low-incomes may be unable to afford a weekly grocery shop, but purchase food in small amounts when money is available, adding to the overall cost of food.

[53] SCRGSP (Steering Committee for the Review of Government Service Provision), Report on Government Services 2016, vol. G, Housing and Homelessness, Productivity Commission, Canberra.
[54] The Cancer Council NSW (2007). NSW Healthy Food Basket Cost, Availability and Quality Survey, 10.
[55] Anglicare (2013) '*Going Without in a Time of Plenty: A Study of Food Security in NSW and the ACT*'.
[56] Burns CM, et al. (2004) Food cost and availability in a rural setting in Australia. *Rural and Remote Health*; **4**: 311.
[57] Tsang A, et al. (2007) Adelaide healthy food basket: a survey on food cost, availability and affordability in five local government areas in metropolitan Adelaide, South Australia. *Nutrition and Dietetics*; 64:241-7
[58] Nogrady, B (2015) 'Time and Money: Why we need both to be healthy'
[59] In Anglicare's national study of people accessing Emergency Relief, 9% reported being limited in their choice of food because they did not have a fridge, while 7% did not have the power connected. Anglicare (2013) Hard Choices: Going Without in a Time of Plenty

Parent diet and activity patterns

Children are strongly influenced by their parent's dietary practices and food preferences, which are, in turn, influenced by factors including food affordability and nutritional knowledge and understanding.

Meta reviews show that education is an element of socioeconomic status that is strongly related to obesity.[60] Higher levels of education might provide greater access to health-related information, improved ability to handle such information, and clearer perceptions of the risks associated with lifestyle choices.

The way in which a parent does or does not engage in physical activity also shapes a child's view of what is normal and acceptable. Across all age ranges, people from low income families are less likely to participate in organised physical activities, with barriers including time, cost, lack of transport, cultural differences, the environment of sporting groups and inaccessible facilities for people with disabilities.[61] Differences in physical activity based on socioeconomic status are even greater for non-organised physical activity than for organised activity,[62] pointing to the importance of neighbourhood characteristics discussed above.

Parenting practices and child-feeding patterns

Children born into low-income families are more likely to be exposed to feeding practices that are associated with obesity, and less likely to be exposed to protective behaviours.

For example, breastfeeding is an important protector against obesity, but NSW Health Statistics demonstrate that the percentage of infants breastfed when discharged from hospital decreases with socioeconomic status.[63] In addition, infants who are formula fed, or whose mothers eat a poor quality diet, are less likely to experience a wide range of flavours and are therefore perhaps less likely to develop a taste for vegetables.[64]

The context in which food is consumed also influences a child's food preferences. Overweight parents may be more likely to adopt certain practices – including, for example, using energy dense food as a reward, or high levels of control over dietary intake – that place their child at greater risk of being overweight. We also know that families from lower socioeconomic backgrounds are more likely to eat meals in front of the TV, which can increase the likelihood of over-eating.[65,66]

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[60] McLaren L. (2007) Socioeconomic Status and Obesity' *Epidemiological reviews* 29(1); 29-48.
[61] Smith et al (2015) Overcoming disparities in organized physical activity: findings from Australian community strategies. *Health Promotion International*
[62] Australian Bureau of Statistics (2014) Stats & Facts: Sport And Physical Recreation - Differentials In Participation
[63] NSW Perinatal Data Collection (SAPHaRI). Centre for Epidemiology and Evidence, NSW Ministry of Health.
[64] Loring, B. and Robertson A. (2014) *Obesity and inequalities: Guidance for addressing Equality in Overweight and Obesity*, World Health Organisation, Denmark, 17.
[65] Ulijaszek, S. J. (2007) Obesity: a disorder of convenience. *Obesity Reviews*, 8: 183–187.
[66] Gebremariam, M. K. et al. (2015) Associations between socioeconomic position and correlates of sedentary behaviour among youth: a systematic review. *Obesity Reviews*, 16: 988–1000.

Finally, research suggests that overweight parents, particularly those from lower socioeconomic backgrounds, are less likely to perceive their overweight children as being overweight.[67] Failure to recognise a problem means that parents are less likely to assist their children with preventative action.

2.3 Child

For all children, high-energy intake and low physical activity are associated with the development of overweight and obesity. But children have limited control over these factors, each of which is strongly influenced by the neighbourhood and family characteristics outlined above.

Activity patterns

Children from low-income families are less likely to engage in physical activities[68] and more likely to spend time in sedentary activities such as watching television.[69] For organised physical activities, cost – including registration costs, uniforms and other incidentals – together with a lack of transport and/or the cost of transport, are persistent barriers to participation. Children from unemployed single parent families are the least likely to participate in organised physical activity. [70]

Participation in non-organised physical activity, including active transport, intersects with neighbourhood characteristics such as walkability and safety, and is influenced by family norms.

Dietary intake

In addition to being influenced by their parents' dietary intake, a child's food preferences are shaped by their exposure to food and information about food in a variety of settings. [71] Children from lower socioeconomic backgrounds not only live in neighbourhoods with a higher density of unhealthy food options, they also spend more time watching television – and are more likely to have a television in their bedrooms.[72] They are therefore more exposed to advertising for unhealthy food choices.

[67] Black, J et al (2015) 'Child obesity cut-offs as derived from parental perceptions: cross-sectional questionnaire', *British Journal Of General Practice*.
[68] Australian Bureau of Statistics (2012) *Australian Social Trends June 2012*.
[69] Bittman, M and Sipthorp, M (2012) Turned on, tuned in or dropped out? Young children's use of television and transmission of social advantage
[70] Australian Bureau of Statistics (2012) *Australian Social Trends June 2012*.
[71] Cairns G et al. (2009) The extent, nature and effects of food promotion to children: A review of the evidence to December 2008: World Health Organisation, Geneva,in Obesity Policy Coalition (2011) Policy Brief: Evidence of effects of food advertising on children
[72] Hardy L et al. (2010) NSW Schools Physical Activity and Nutrition Survey (SPANS) Full Report. Sydney: NSW Ministry of Health, 239.

Section 3: What's already happening? Current responses to childhood obesity in NSW

The NSW Government's current approach to reducing childhood overweight and obesity in NSW is articulated in the *NSW Healthy Eating Active Living Strategy 2013-2018*.[73] This whole-of-population strategy recognises that the causes of overweight and obesity are complex; that there is no one solution; and that NSW Health cannot achieve change alone. People from lower socioeconomic backgrounds are listed as a cohort requiring specific focus within the HEAL Strategy.[74]

The HEAL Strategy nominates four strategic directions:

1. Environments to support healthy eating and active living.
2. State-wide healthy eating and active living support programs.
3. Healthy eating and active living advice as part of routine service delivery.
4. Education and information to enable informed, healthy choices.

As part of the HEAL Strategy, the *Healthy Children Initiative* (initially funded under the National Partnership Agreement on Preventative Health) includes a range of evidence-based programs within environments such as early childhood education and care services and schools. The programs are summarised at Table 1 according to their setting and target group. [75]

Table 1: Programs under the Healthy Children Initiative

Program	Method	Targeted
Early Education and Care		
Munch and Move	Customisable resources provided to services	Universal program
Supported playgroups	Encourages and supports playgroup leaders to create environments that encourage healthy eating and active play, and educate parents/carers attending playgroups.	Targets socially and geographically isolated families, single and young parents, Aboriginal families and culturally and linguistically diverse (CALD) families

[73] NSW Ministry of Health (2013) NSW Healthy Eating Active Living Strategy: Preventing overweight and obesity in New South Wales 2013-2018.
[74] Additional cohorts listed in the HEAL Strategy as requiring additional attention are Aboriginal communities, culturally and linguistically diverse (CALD) communities and rural and remote communities.
[75] NSW Ministry of Health (2016) Childhood Overweight and Obesity: Healthy Children Initiative – Snapshot June 2016.

Healthy Beginnings/Healthy Habits	Telephone services support healthy habits to parents of 0-2 and 3-5 year olds.	Universal, with specific effort to target particular population groups including Aboriginal people, CALD communities, those living in rural and remote areas
Get Healthy Information	Telephone support	Targeted at Aboriginal and CALD communities
Sustained Nurse Home Visiting	Healthy eating information integrated into program	Targeted at Aboriginal communities
Primary school		
Live Life Well @ School	Supports schools to develop whole school strategies that support physical activity and healthy eating; improve the teaching of nutrition and physical education, foster community partnerships and provide opportunities for more students to be more active	Universal
Crunch&Sip	Break to eat fruit and vegetables and drink water	Universal, specific efforts to reach disadvantaged schools
High school		
High School Canteen Support Service	High schools assisted to establish a healthy school canteen while maintaining profitability	Targeted at disadvantaged schools
Healthy eating program for disadvantaged youth	Healthy eating programs run through specialist youth health and homelessness services and alternative education providers	Targeted
School – General		
Finish with the Right Stuff	Encourages healthy eating and drinking following participation in community sport	Universal
The Premier's Sporting Challenge	Grants to assist participation in sport	Targeted at disadvantaged schools
Go4Fun	10 week programs aiming to modify family lifestyles, improve parenting skills around healthy eating and activity, promote weight management; and increase children's self esteem	Targeted at overweight/obese children, rolled out in low socio-economic areas with high rates of childhood overweight and obesity
NSW Knockout Health Challenge	Healthy eating and physical activity programs	Targeted at Aboriginal communities

The HEAL Strategy is supported by an advertising campaign, "Make Healthy Normal".[76]

Despite the HEAL Strategy and related efforts to improve the health of our children, in 2015 more than one in five (22%) school aged children in NSW are either overweight or obese.[77] And increasingly, these children disproportionately come from low income and disadvantaged families. The remainder of this report therefore explores the additional actions needed to address the growing equity gap in terms of the obesity rates of children from high- and low-income families.

[76] NSW Ministry of Health "Make Healthy Normal".
[77] NSW Population Health Survey (SAPHaRI) (2015) Centre for Epidemiology and Evidence, NSW Ministry of Health.

Section 4: Priority recommendations – NSW

Below we outline actions needed to reduce overweight and obesity rates amongst children from low-income and vulnerable backgrounds. This list of recommendations is not comprehensive, but identifies critical steps towards a response to overweight and obesity that will see children from low-income and vulnerable backgrounds see their fair share of the benefit.

4.1 Resource a whole-of-community approach to childhood obesity

There is strong evidence that whole-of-community approaches – approaches that address multiple risk factors simultaneously – are most effective at reducing obesity for people from lower socioeconomic backgrounds.[78,79]

While some of the initiatives outlined in the NSW Government's HEAL strategy are directed towards low socioeconomic areas, it is difficult to see how efforts targeting those children at greatest risk of being overweight are being brought together in a whole-of-community approach at the local level. Additional resources are required to achieve this, and these resources should be targeted to areas of concentrated disadvantage.

To this end, we recommend that child obesity coordinators be appointed to facilitate a collective approach involving government agencies across all three tiers of government as well as the non-government and private sectors. While Local Health Districts should lead this approach, funding arrangements should incentivise the involvement of local councils given the important role they play in both shaping the built environment and delivering services. In the first instance, efforts should focus on LGAs in the lowest decile of disadvantage.

Locally coordinated whole-of-community approaches have been implemented in numerous jurisdictions both in Australia and internationally, and are exemplified in the EPODE, *Together Let's Prevent Childhood Obesity* method implemented in 500 European communities since 2004.[80] This type of approach can be designed to complement state-wide strategies: Healthy Together Victoria, for example, operates at a state-wide level as well as resourcing local government to lead concentrated community-level efforts in 12 Healthy Together Communities.[81] A similar approach has been adopted in 19 South Australian communities under the Obesity Prevention and Lifestyle (OPAL) program.[82]

Additional resources directed to socioeconomically disadvantaged communities would support:

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[78] Boelsen-Robinson, T. et al (2015) A systematic review of the effectiveness of whole-of-community interventions by socioeconomic position Obesity Reviews, 16: 806–816.
[79] Beauchamp, A. et al (2014) The effect of obesity prevention interventions according to socioeconomic position: a systematic review *Obesity Reviews*, 15: 541–554.
[80] Borys, J.-M.et al (2012), EPODE approach for childhood obesity prevention: methods, progress and international development. *Obesity Reviews,* 13: 299–315.
[81] See Vic Health *Healthy Together Victoria*.
[82] See SA Health Obesity Prevention and Lifestyle (OPAL)

1. **A coordinated cross-sectoral approach to addressing local level needs and priorities:** An example of this type of approach can be seen in the Western Sydney Diabetes Prevention and Management Initiative. Led by Western Sydney Local Health District, the Initiative brings together a diverse range of partners from backgrounds including GPs, hospitals, Government, universities, town planners and educators to develop a whole-of-region response to diabetes prevention and management.[83]

2. **Support to implement existing programs.** There is some evidence that services in lower socioeconomic communities may find it more difficult to implement programs in the HEAL Strategy (such as those summarised in Table 1 of this report). For example:

    - reduced access to fresh fruit and vegetables means that students attending primary schools in lower socioeconomic areas are less likely to bring fruit and vegetables to school if their school implements the "Crunch and Sip" program [84]; and;
    - a review of the Healthy Schools Canteen Strategy found that schools in socioeconomically disadvantaged areas were more likely to include unhealthy "Red" items in their canteen. [85]

    Under the *Good for Kids, Good for Life* program which operated in the Hunter New England Local Health District in 2007-2010, services across the community were assisted to implement obesity prevention interventions. This capacity-building approach was highly effective, resulting in an average annual rate of decline in the prevalence of overweight and obesity for all children in the region of approximately 1% per year.[86]

3. **The development of local initiatives.** Ensuring socioeconomically disadvantaged communities have access to the most appropriate support would involve a community level needs assessment, a prioritisation process, and the subsequent development and implementation of appropriate initiatives. NSW Health has previously recognised the importance of local initiatives in supporting the Healthy Towns Challenge. In 2016, this program provided a grant award of $15,000 to five selected towns across NSW to put in place practical ideas to eat well, move more and sit less.[87] While this Challenge operates on a short-term (six-month) basis, a longer-term approach would facilitate a broader range of local initiatives. Examples of the types of local initiatives that might be funded through a whole-of-community approach are provided in Table 2.

[83] Western Sydney Diabetes Taking the Heat Out of Our Diabetes Hotspot.
[84] Wisee et al all (2011) *Crunch and Sip Evaluation Report*, South Australian Community Health Research Unit.
[85] Healthy School Canteens: Summary of Evidence to inform a Revised Strategy, 20.
[86] Wiggers J at al (2013) *Good for Kids, Good for Life, 2006-2010: Evaluation Report*. Sydney: NSW Ministry of Health;
[87] NSW Office of Preventative Health *Healthy Towns Challenge*.

Recommendation 3: NSW Health should direct additional resources towards Local Health Districts and Local Governments to mobilise a whole-of-community approach to reducing childhood overweight and obesity in low socioeconomic areas. This should include the appointment of child obesity coordinators to facilitate:

- A coordinated cross-sectoral approach to addressing local level needs and priorities.
- Support to implement existing programs.
- The development of local initiatives.

Table 2: Local initiatives towards healthier communities

Food Hubs

Food hubs are enterprises that foster a community-oriented food system by "establishing local food processing and food preparation to 'add value' to locally grown food, expanding food-related business opportunities, [and] improving nutritional health through access to fresh food via innovative distribution systems including farmers' markets, food trucks, and collaborative models."[88]

Using the "Food Bank Plus" model, that links food provision with skill building and social services, food hubs can also include kitchens, community gardens and other support services suiting community needs. This model creates opportunities for people to develop skills around healthy eating and food preparation in a supportive environment. Successful international examples include Community Food Centres Canada, Brooklyn Foodworks and Incredible Edible Todmorden. The concept is the beginning to develop in Australia, with a feasibility study into the creation of a food hub in Bendigo finding that as well as increasing the availability of healthy food, a food hub would create jobs in the region, growing the local economy. [89]

Food vans

Where people on low-incomes experience cost and accessibility barriers to accessing healthy food (such as in some housing estates) food vans delivering fresh, healthy food at a subsidised rate could play a role in making it easier for families to eat a healthy diet. A good example of this approach is the Asylum Seeker Resource Centre's Food Justice Truck, a mobile fresh food market that offers people seeking asylum a 75% discount and sells to the general public at market rate.

School Breakfast Clubs

Children from lower socioeconomic backgrounds are more likely to skip breakfast,[90] and this has both health and educational consequences. Foodbank estimates that the average student loses two hours of learning time per day when they come to school hungry. [91] School breakfast clubs not only make sure children start the day with a healthy meal, but provide an opportunity to engage parents and children from low-income families and support healthier lifestyles. For example, some breakfast clubs have a focus on increased physical activity, such as the Marrickville South Fitness and Breakfast Club, where students train with the under 20s Rabbitohs players before being given breakfast.[92]

Elsewhere, governments have recognised the value of such programs. The Welsh Government, for example, funds school holiday healthy eating programs, recognising that low-income and disadvantaged families may struggle to

[88] O'Hara, S (2015) Food Security: The Urban Food Hubs Solution, *Solutions Journal*, 6(1) 42-53.
[89] Greater Bendigo Food Hub: Feasibility Study (2015)
[90] Hardy LL, King L (2012) Report on students' weight and weight-related behaviours by SES and cultural background: Physical Activity Nutrition Obesity Research Group. University of Sydney: NSW Ministry of Health
[91] Foodbank (2015) Hunger in the Classroom
[92] Marrickville Council et al (2015) Marrickville "Souths" Fitness and Breakfast Club Evaluation, *Simone Parsons & Associates.* New South Wales.

find appropriate activities for their children. And this year the Victorian Government provided four years of funding to breakfast clubs for 500 of the most disadvantaged government primary schools in the State. [93]

Free or low-cost sports activities for children

Extracurricular sporting activities promote physical fitness and social connectedness, but their cost– including the cost of travel, membership fees and uniforms – is a persistent barrier to participation for many children and young people.

Like breakfast clubs, sport activities can be used as soft entry points to connect vulnerable children and young people with a range of services. For example, Midnight Basketball Australia organises sporting activities for high school students in socioeconomically disadvantaged communities, combined with a healthy meal and life skills activities.[94]

Practical skills for parents

A place-based approach to addressing obesity offers the opportunity to deliver educational programs that are responsive to the specific context in which a child and his or her family lives.

For example, the "Shop Smart for Health" program provided women on low incomes with a range of resources to increase their confidence and skills in budgeting for, purchasing, and preparing fruit and vegetables inexpensively. The program was run through the local supermarket and provided newsletters, budgeting activities, costed recipes and a group supermarket tour. The program worked well because it was embedded in a setting that was already familiar to participants and aligned with women's existing goals. [95]

Similarly, Cancer Council NSW's "Eat It To Beat It Program" is a good example of nutritional education delivered to parents via a school setting. Currently delivered in partnership with Western Sydney and Nepean Blue Mountains Local Health Districts, the program consists of both an overview session on nutrition designed to assist parents to pack a healthy lunch box (Healthy Lunch Box session) which is run in conjunction with a school's Kindergarten Orientation program, as well as a longer session on topics including nutrition, food budgeting and menu planning (Fruit & Vege Sense). A recent evaluation of Healthy Lunch Box sessions found significant increases in parents' knowledge of both serving sizes and recommended intakes regarding fruit and vegetables directly after the intervention, which were sustained six months post-intervention. [96]

Practical skills for children and young people

Peer education can effectively complement formal instruction to increase young peoples' knowledge of healthy eating. Effective examples include:

[93] Victorian Department of Education School Breakfast Clubs Program.
[94] See Corrier Mail Game Plan.
[95] Ball et al (2013) ShopSmart 4 Health – Protocol of a skills-based randomised controlled trial promoting fruit and vegetable consumption among socioeconomically disadvantaged women, *BMC Public Health.*
[96]Cancer Council NSW, (2016) Submission into NSW Legislative Council into Childhood Overweight and Obesity.

- **The Students As LifeStyle Activists (SALSA) Project in Western Sydney** involves Year 10 students who are trained to deliver lessons about nutrition and physical activity to their Year 8 peers. Established in 2004 as a partnership between Mt Druitt Medical Practitioners Association, Western Sydney Local Health District and Rooty Hill High School, it now operates throughout Western Sydney. The approach is beneficial to both students delivering and receiving training; after completing the SALSA program, both the Year 8 and Year 10 students reported an increase in their daily consumption of fruit and vegetables.[97]
- **The "Let's Get Cooking" Pilot Program** in the UK supported and resourced disadvantaged schools to establish cooking clubs. The program used a 'train the trainer' approach; children and young people were taught healthy cooking skills and acted as ambassadors, disseminating their skills to the wider school community. Participants were significantly more likely to eat an increased number of healthy foods after participating in the program, a trend that was still evident three months later.[98]

4.2 State-wide responses to vulnerable children and young people

As well as targeting responses to obesity to low-income and vulnerable families, children and young people via a place-based whole-of-community approach, we need to develop state-wide strategies that respond to particularly vulnerable cohorts of children and young people. These groups include:

1. **Aboriginal and Torres Strait Islander children and young people:** Aboriginal and Torres Strait Islander children are 6% more likely than other children to be overweight or obese. And recent research shows the gap in weight status between Aboriginal and non-Indigenous children is widening.[99]
2. **Children and young people from culturally and linguistically diverse and refugee backgrounds:** In the Australian context, there is evidence that children with African, Middle Eastern or European backgrounds are more likely to be overweight than children with Australia backgrounds.[100] The SPANS Survey confirms that this is the case in NSW.[101]
3. **Children and young people with disability:** Research by the Australian Institute of Health and Welfare (AIHW) shows that adults with severe or profound disability are significantly more likely to be overweight or obese, and do little or no exercise.[102] These trends are likely to be applicable to young people with disability because disability can exacerbate factors that promote overweight,

[97] Western Sydney Local Health District (2016) Summary Report: Impact of the SALSA Program in High Schools in Western Sydney
[98] UK School Food Trust (2012) Evaluation of the Let's Get Cooking programme Final Report.
[99] Hardy, LL, et al (2014) Temporal trends in weight and current weight-related behaviour of Australian Aboriginal school-aged children. *Med J Aust,* 200 (11): 667-671.
[100] Waters et at al (2008) Double disadvantage: the influence of ethnicity over socioeconomic position on childhood overweight and obesity: findings from an inner urban population of primary school children International Journal of Pediatric Obesity, 3: 196–204.
[101] Hardy L, King L, Espinel P, Cosgrove C, Bauman A. (2010) NSW Schools Physical Activity and Nutrition Survey (SPANS) Full Report. Sydney: NSW Ministry of Health, 34.
[102] Australian Institute of Health and Welfare (2010). Health of Australians with disability: health status and risk factors. AIHW bulletin no. 83. Cat. no. AUS 132. Canberra: AIHW.

particularly sedentary behaviour. Sometimes medication used to manage disability, particularly anti-psychosis medication, has a particular risk of leading to weight gain.[103]

4. **Children and young people in out-of-home care:** Overseas studies have shown that children in out-of-home care are more likely to be overweight or obese,[104] and while there is a lack of rigorous Australian research in relation to the weight in children in out-of-home care this is also likely to be the case here.[105]

5. **Children and young people in the juvenile justice system:** Overweight and obesity is prevalent among young people in custody and being in custody exacerbates obesity. A study using data from the 2009 NSW Young People in Custody Health Survey[106] found that:

    - at baseline, nearly half of the 303 detainees surveyed (47.9%) were overweight or obese; and;
    - on follow-up measurement, three-quarters of young people reported weight gain since being incarcerated, and those who spent a longer time in custody were more likely to report weight gain or be overweight or obese.[107]

    Although being in custody led to improvements in diet and exercise, this was counterbalanced by food environments in which multiple portions were offered, and energy-dense food was available as rewards. Additionally, the physical activity offered is low intensity.[108]

The recommendations below complement Strategic Direction 2 'State-wide healthy eating and active living support programs' of the NSW Healthy Eating and Active Living Strategy. While a number of actions under this Strategy identify priority populations such as Aboriginal communities, and culturally and linguistically diverse (CALD) communities and rural and remote communities, there is no specific focus on children within these communities, nor is there a methodical approach that places the needs of these children at the centre of any response. Additionally, children and young people who are marginalised but less 'visible' – such as those with disability or who interact with the juvenile justice or out-of-home care systems – are missing from the HEAL Strategy.

We consider that a systematic approach to reducing the rates of overweight and obesity amongst particular groups of vulnerable children and young people should:

(a) Ensure existing programs aimed at equipping children, young people, and their families and caregivers to make healthier food choices are accessible to vulnerable groups and take their needs into account.

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[103] Griffiths, M (2012) Sydney doctors combat weight gain from anti-psychosis drugs.
[104] Hadfield, S. C., & Preece, P. M. (2008) Obesity in looked after children: Is foster care protective from the dangers of obesity? *Child: care, health and development*,34; 710-712
[105] Skouteris, H et al (2011) Obesity in Children in Out-of-home Care: A Review of the Literature *Australian Social Work,* 64:4, 475-486.
[106] Indig D et al. (2011) 2009 NSW Young People in Custody Health Survey: full report. Sydney: Justice Health and Juvenile Justice.
[107] Haysom et al (2013) Prevalence and perceptions of overweight and obesity in Aboriginal and non-Aboriginal young people in custody, *Med J Aust* 2013; 199 (4): 266-270.
[108] Ibid.

(b) Identify where state-wide initiatives tailored to particularly vulnerable groups are needed, and resource the development and implementation of these initiatives accordingly.

Tailoring existing initiatives to vulnerable groups:

The Healthy Children's Initiative "Culturally and Linguistically Diverse Checklist" provides an example of a framework for considering the needs of all vulnerable groups.[109] Similar tools are needed to support the needs of other vulnerable groups, and ensure programs can be appropriately tailored. For example, just as the "Get Healthy Information Service" runs programs tailored to Aboriginal communities (which include additional sessions),[110] coaches should be trained to anticipate and respond to the needs of other vulnerable groups such as parents and children with intellectual disability, and resources should be provided in Easy English.

Developing and implementing targeted initiatives:

The development of initiatives targeted to cohorts of vulnerable children should involve coordination and co-design with the non-government sector – which in many cases has existing relationships with children and young people who are otherwise hard to reach – as well as close consultation with children and young people themselves. As a first step, existing programs should be examined for their potential for broader roll-out.

A good example of this type of initiative is the YHunger program that was funded and supported by NSW Health. It aims to improve food access and physical activity options for young people between the ages of 12-24 who are experiencing or are at risk of homelessness. Many of these young people have not had the opportunity to learn basic skills in the kitchen and are limited by time and very tight budgets. The program works through youth services with a training and resource package designed to build the capacity of youth workers to work on food and physical activity with young people. Program resources include a series of cook books with recipes that have been tested by young people and that are designed to be affordable to people on very low incomes.

Given each of the vulnerable cohorts identified above also experience significantly higher rates of dental disease than the general population,[111] targeted initiatives should also identify opportunities for an integrated approach to health promotion and prevention that directs action to the common risk factors for overweight and obesity and poor oral health.

The importance of intervening in early childhood:

One initiative we recommend be rolled out across the State is nurse-led home visiting programs for vulnerable families with children age 0-2. There is strong evidence that these programs bring about a range of substantial

[109] NSW Office of Preventative Health, Healthy Children's Initiative "Culturally and Linguistically Diverse Checklist".
[110] NSW Ministry of Health, Get Healthy Information Service, Tailored programs.
[111] Rates of dental decay are significantly higher for certain populations, including Aboriginal children (2.5 times higher), children from a lower socioeconomic background, children living in remote/very remote areas (up to 6 times higher), and children of mothers born in non-English speaking countries. Centre for Oral Health Strategy NSW. The New South Wales Child Dental Health Survey 2007. Sydney: NSW Department of Health, 2009. Available at www.health.nsw.gov.au/cohs

benefits for vulnerable children and their families, including supporting mothers to breastfeed for longer which is an important protector against obesity.[112]

Targeted programs for this very young age group have been shown to be particularly effective.[113] Commenting on four randomised trials of obesity interventions in early childhood (most of which included home visiting components), the Early Prevention of Obesity in Children (EPOCH) Collaboration has found that compared with usual care, early childhood interventions lead to improvements in body mass index at ages 18-24 months, and result in increased breastfeeding duration. [114]

We estimate that the state-wide roll-out of the nurse-led home visiting programs for vulnerable children would require investment of an additional $25 million per annum. There is also evidence that home-based early intervention programs such as Healthy Beginnings[115] can reduce family and behavioural risk factors for childhood obesity, and there is potential to embed these programs into the nurse home visiting model.

Recommendation 4: NSW Health should lead cross-agency efforts to develop the tailored strategies needed to support children and young people from particularly vulnerable backgrounds across the State to be of healthy weight (including those from Aboriginal and Torres Strait Islander, CALD, and refugee backgrounds, those with disability, and those in the out-of-home care and juvenile justice systems). This should involve coordination and co-design with the non-government sector as well as close consultation with children and young people themselves. These strategies should:

- Ensure the accessibility of existing programs
- Resource the development and implementation of state-wide initiatives where needed

Recommendation 5: Invest an additional $25 million per annum in the state-wide rollout of nurse-led home visiting programs for vulnerable families with children age 0-2. In addition, the NSW Government should further investigate the potential to embed home-based early intervention programs such as Healthy Beginnings into this home visiting program.

[112] Owen CG et al. (2005) Effect on infant feeding on the risk of obesity across the life course: a quantitative review of published evidence. *Pediatrics*. 115:1367-1377.

[113] Laws, R., et al (2014) The impact of interventions to prevent obesity or improve obesity related behaviours in children (0–5 years) from socioeconomically disadvantaged and/or indigenous families: a systematic review. *BMC Public Health*, 14.

[114] Centre of Research Excellence in the Early Prevention of Obesity in Childhood Submission into NSW Legislative Council into Childhood Overweight and Obesity.

[115] http://www.healthybeginnings.net.au

4.3 Creating healthier neighbourhoods

The built environment plays an important role in supporting people to lead physically active and healthy lifestyles. For example, neighbourhoods with good infrastructure and amenities that are well served by public transport encourage people to incorporate active transport into their daily lives, while parks, open green spaces, and recreational facilities encourage incidental physical activity. Additionally, the food choices available in an area encourage people to choose healthy or unhealthy diets.

The discussion at Section 2.1 outlined how low-income neighbourhoods tend to be more obesogenic than wealthier neighbourhoods. Further, socioeconomic disadvantage can amplify the environmental factors that promote obesity.[116] Low-income families, for example, may not be able to travel to other locations in order to exercise or engage in physical activity. Accordingly, making systemic changes to environmental factors promoting obesity is a critical component of an equitable response to reducing childhood obesity rates.

The importance of the environment is recognised in the *Healthy Eating Active Living Strategy* which identifies 'Environments to support healthy eating and active living' as Strategic Direction 1. The recommendations below complement the actions identified under this Strategic Direction.

Planning decisions based on health and well-being

In working to create healthier neighbourhoods, we should ensure health and well-being is a key driver of planning decisions and processes. As a first step, we recommend that health and well-being be incorporated as an objective in the *Environmental, Planning and Assessment Act 1993* (EPA) which is being reviewed in the latter part of 2016.[117]

A specific objective related to health in the *EPA* would bring NSW into line with Queensland and Tasmania, with both states including a specific objective related to health in their planning laws.[118] As a precedent for NSW, the *Planning Bill 2013* (which did not pass through Parliament) included the following objectives:

> *(h) to promote health and safety in the design, construction and performance of buildings,*
> *(i) to promote health, amenity and quality in the design and planning of the built environment,* [119]

In addition, health impact assessments should be required for all major new developments to ensure they are designed in order to best enhance the health of existing residents and facilitate the health of future residents.

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[116] Swinburn BA, et al (1999) Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity, *Prev Med*; 29: 563–570.
[117] See *Legislative changes to simplify the planning system*.
[118] *Land Use Planning and Approvals Act 1993 (Tas); Sustainable Planning Act 2009 (Qld)*
[119] *Planning Bill 2013 (NSW)*.

Incorporating a health focus into the EPA is important given State planning laws lay the foundation for regional and local level planning processes. Embedding health considerations into planning processes could facilitate strategies such as:

- The design of transport networks which link cycling and walking infrastructure with public transport, increasing walkability;
- The creation of attractive residential areas where people can feasibly walk or cycle to essential services such as shops, schools and work;
- The incorporation of green spaces into new housing and community developments;
- Improving access to fresh food by protecting a proportion of fertile land for agricultural purposes as opposed to housing development; and
- Reducing exposure to unhealthy food options, by using either mandatory or discretionary approaches.
    - **Mandatory approaches:** A number of local councils in the United Kingdom have banned hot food takeaway shops from opening within 400 metres of schools, youth facilities and parks,[120] and South Korea has established 'green zones' around schools where no unhealthy food can be sold.[121]
    - **Discretionary approaches:** When approving a fast food restaurant, a health impact assessment would require local governments to consider factors including the proximity of nearby schools, levels of overweight, obesity, non-communicable disease or other diet and lifestyle related health indicators in the local community and the number and density of other fast food outlets in the local area.[122]

Improving access to green spaces

Given the importance of access to green spaces in supporting active lifestyles, we also recommend that the Department of Planning and Environment, in collaboration with local councils, build on existing efforts, including that of the Greater Sydney Commission, to map green spaces across the Greater Metropolitan Region. This exercise should capture information about the quality and accessibility of existing green spaces, and assist in identifying where further investment is required. In allocating resources to create, build, or upgrade green space, geographic measures of socioeconomic status should be taken into consideration to ensure the equitable distribution of resources.

NSW actions to restrict unhealthy food marketing

[120] Campbell D (2010) "*Takeway ban near schools to help fight childhood obesity*", The Guardian.
[121] Joo S, Ju S, Chang H. (2015) Comparison of fast food consumption and dietary guideline practices for children and adolescents by clustering of fast food outlets around schools in the Gyeonggi area of Korea. Asia Pac J Clin Nutr. ;24(2):299–307.
[122] Obesity Policy Coalition (2015) Prioritising Health: Reforming Planning Laws To Reduce Overweight And Obesity In Australia.

Restricting the marketing of unhealthy food to children is part of creating a healthy environment. This issue is discussed in more detail in section 5.3 below, under Federal Government responsibilities.

As part a holistic approach to restricting unhealthy food marketing, we recommend the NSW Government:

- Eliminate unhealthy marketing in spaces it owns or leases, including outdoor billboards, public transport and public transport stops. Research has found that a high proportion of advertising in high exposure areas near schools features unhealthy foods;[123] and
- Take action to remove unhealthy food marketing, promotion and sponsorship of all children's sport. For example, the Office of Sport could develop healthy sponsorship criteria for childrens' sports clubs and assist clubs to find alternative sponsors.[124]

Recommendation 6: Include health and well-being as an objective in the *Environmental, Planning and Assessment Act 1993*.

Recommendation 7: Amend legislation to ensure health impact assessments are required for all major new developments.

Recommendation 8: The NSW Department of Planning and Environment, in collaboration with local councils and building on the work of the Greater Sydney Commission, should conduct a mapping exercise documenting the quantity, quality and accessibility of green spaces across the Greater Metropolitan Region, and invest additional resources to create or improve green spaces where required. Efforts should be made to ensure State Government resources are equitably distributed according to socioeconomic status.

Recommendation 9: The NSW Government should eliminate unhealthy marketing in spaces it owns or leases and take action to remove unhealthy food marketing, promotion and sponsorship of all children's sport.

[123] Kelly B, et al., The commercial food landscape: outdoor food advertising around primary schools in Australia. Australian & New Zealand Journal of Public Health 2008. 32(6): 522-528.
[124] Obesity Policy Coalition, (2016) Submission into NSW Legislative Council into Childhood Overweight and Obesity

Section 5: Priority recommendations - Federal

The actions recommended below are primarily the remit of the Federal Government. However, the NSW Government can play a role in advocating for national responses that will contribute to reducing overweight and obesity in children and young people in our State.

5.1 Increase income support payments

As outlined in Section 2.2 of this report, a healthy diet is out of reach for many families on low incomes, making children in these families more vulnerable to unhealthy weight. For many families experiencing poverty and disadvantage, social security payments are a major income source.

To this end, we recommend that the NSW Government supports the recommendations made by the Australian Council of Social Service (ACOSS) in relation to the transfer payments system, including indexing family payments to wage movements; increasing the Family Tax Benefit Part A rate for families with children over 5 years by $30 per week; and replacing Family Tax Benefit Part B for single parent families with a Sole Parent Supplement set at the level of the current Part B payment for younger child.

Additionally, reviewing and increasing Commonwealth Rent Assistance would help ensure that families on low incomes have sufficient money available after housing costs to eat a healthy diet.

Recommendation 10: Through COAG, the NSW Government should support the recommendations made by the Australian Council of Social Service (ACOSS) in relation to the payments system including; indexing family payments to wage movements; increasing the Family Tax Benefit Part A rate for families with children over 5 years by $30 per week; replacing Family Tax Benefit Part B for single parent families with a Sole Parent Supplement set at the level of the current Part B payment for the younger child; and increasing Rent Assistance.

5.2 A tax on sugar sweetened beverages

The introduction of a tax on sugar-sweetened beverages (SSBs) would encourage parents, carers and young people themselves to make healthier food choices. Across Australia, almost half of all children (aged two to 16 years) consume sugar-sweetened beverages daily,[125] while in NSW, almost one eighth of school children drink one or more cups of soft drink every day.[126] Amongst children and young people, soft drink consumption

[125] Clifton PM ET AL. (2011) Beverage intake and obesity in Australian children. Nutr Metab (Lond) 2011; 8:87
[126] NSW Health (2010) NSW Schools Physical Activity and Nutrition Survey (SPANS) 2010 – Short Report

increases with age; SPANS data shows that more than 60% of students in Year 10 consumed two or more cups of soft drink per week, compared to 38% of students in Kindergarten.[127]

The Australian Dietary Guidelines recommend limiting the intake of foods and drinks containing added sugars and in particular, limiting sugar-sweetened soft drinks. This is underpinned by evidence of an association between the consumption of sugar-sweetened beverages and an increased risk of weight gain in adults and children, as well as an association with increased risk of dental caries.[128]

A 'sugar tax' on sugar sweetened beverages would influence consumer behaviour, encouraging people to lower their consumption levels or switch to healthier beverages. Given that families with less disposable income are more responsive to price signals,[129] and children in such families consume a greater amount of soft drinks,[130] this approach is likely to disproportionately benefit children and young people from low-income backgrounds. Sugar taxes been already been introduced in a number of countries - including France, Hungary and Mexico – and will be introduced in the UK in 2018.[131] The evidence of their efficacy is strong:

- In the first year of Mexico's 10% tax on SSBs, purchases of taxed beverages declined by 12%. A decline was found across all socioeconomic groups, with reductions highest among lower socioeconomic households.[132]
- UK modelling predicted that a 20% tax on SSBs would lead to a 1.3% reduction in the prevalence of obesity with the greatest effects likely to be seen in young people.[133]

Implementation of an effective tax on SSBs has been recommended by the WHO Commission on Ending Childhood Obesity[134] and is highly cost effective, with recent modelling from the US demonstrating that a tax on SSBs would save $55 for every dollar invested.[135] In Australia, recent research has found that an additional 20% tax on SSBs would generate an estimated $AUD400 million in revenue each year,[136] $118 million of which would be generated in NSW.[137]

A tax on SSBs has considerable community support, including from people experiencing socioeconomic disadvantage. A recent survey of 400 people receiving Government benefits conducted by NCOSS found that 53% of respondents supported the initiative.[138]

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[127] Ibid.
[128] National Health and Medical Research Council (2013) Australian Dietary Guidelines. Canberra: National Health and Medical Research Council.
[129] Invine, J (2016) Why you really should pay a sugar tax *Sydney Morning Herald*.
[130] Hector D, et al, Gill T. Soft drinks, weight status and health: a review. 2009.
[131] Ibid.
[132] Obesity Policy Coalition (2015) *Policy Brief The Case for An Australian Tax on Sugar Sweetened Beverages*
[133] Andreyeva et al., (2011) above n 14; Chaloupka F et al (2011) 'Sweetened beverages and obesity: the potential impact of public policies' *Journal of Policy Analysis and Management* 30(3):644–665.
[134] WHO Commission on Ending Childhood Obesity (2016) Final Report, Recommendation 1.2.
[135] Gortmaker, S.L., et al., (2015) *Cost Effectiveness of Childhood Obesity Interventions: Evidence and Methods for CHOICES.* Am J Prev Med. 49(1): 102-11
[136] Veerman et al "The impact of a tax on sugar-sweetened beverages on health and health care costs: a modelling study" in Charles Perkins Centre - The University of Sydney (2016) Submission into NSW Legislative Council into Childhood Overweight and Obesity.
[137] Charles Perkins Centre - The University of Sydney (2016) Submission into NSW Legislative Council into Childhood Overweight and Obesity.
[138] NCOSS (2016) *Cost of Living Survey*.

To ensure that consumers do not simply substitute other unhealthy food and beverages for SSBs, any tax must be introduced in combination with complementary measures including health prevention and promotion initiatives that encourage healthy eating. Revenue raised from a sugar tax should be channeled towards such initiatives. Prior to the introduction of a sugar tax, care must be taken to ensure that affordable and appropriate alternative beverages are readily available in all locations, with particular attention paid to circumstances in rural and remote Indigenous communities.

Recommendation 11: Through COAG, the NSW Government should advocate for the introduction of a tax on sugar sweetened beverages (SSBs).

5.3 Marketing restrictions

The food preferences of children and young people are shaped by their exposure to food and information about food in a variety of settings. As described earlier, children from low-income backgrounds are more exposed to messages that promote the consumption of unhealthy food, and therefore measures that limit exposure to these messages are likely to disproportionately benefit these children.

Restricting the advertising of junk food to children was supported by the WHO Commission on Ending Childhood Obesity[139], and modelling suggests it is a highly cost effective approach, saving $38 for every dollar invested.[140]

To ensure a robust national approach, the NSW Government should champion efforts to protect children from unhealthy food marketing through COAG. As identified by the NSW Cancer Council and the Obesity Policy Coalition (which includes NGOs as well as the Victorian Department of Health), advertising codes and regulations should:

- Clearly define key terms, including 'unhealthy food', 'unhealthy food marketing', 'children' and 'directed to children'.
- Consistently and transparently define 'unhealthy food' in accordance with government and scientific guidelines.
- Apply to all forms, media and locations of marketing of unhealthy food that is directed to, or appeals to children. This includes via print, radio, internet, cinema, outdoor media, direct marketing (email, SMS or direct mail), product packaging, or point of sale promotions.
- Restrict advertising content and placement including preventing the use of techniques that appeal to children when marketing unhealthy food, as well as ad placement in mediums that attract children,

[139] WHO Commission on Ending Childhood Obesity (2016) Final Report, Recommendation 1.3.
[140] Gortmaker, S.L., et al., *Cost Effectiveness of Childhood Obesity Interventions: Evidence and Methods for CHOICES.* Am J Prev Med, 2015. 49(1):, 102-11

including on free to air television during times when large numbers of children are likely to be watching (i.e. weekdays 6–9am and 4–9pm, and weekends and school holidays 6am–12pm and 4–9pm).

- Ensure compliance is regularly monitored so that identification of breaches is not entirely dependent on complaints from the public.[141]

Recommendation 12: Through COAG, the NSW Government should champion efforts to protect children from unhealthy food marketing through stronger advertising codes and regulations.

[141] See Watson W, et al (2014) "Children's Health or Corporate Wealth? The battleground for kids' hearts, minds and tummies" Sydney: Cancer Council NSW; Obesity Policy Coalition (2015) End the Charade! The ongoing failure to protect children from unhealthy food marketing

Conclusion

Children and young people from low socioeconomic backgrounds are significantly more vulnerable to overweight and obesity, yet our responses to date have failed to address the growing gap in health outcomes between children from rich and poor families.

Vulnerability to obesity emerges from a range of complex and interconnected factors; some relate to the neighbourhoods in which children live, learn and play; others to their family environment – what and how a family eats, and the activities parents encourage. These factors come together to amplify particular children's risk of health and social disadvantage throughout their lives.

The Premier's Priority focused on childhood overweight and obesity presents an opportunity to focus attention on the children who need it most, and to stop the growing disparity in health outcomes between children and young people from different socioeconomic backgrounds.

This complex goal requires co-ordination between and across sectors. It also requires a focus on high needs communities and efforts to make existing programs accessible to vulnerable cohorts.

At the same time, we should be working to create healthier environments that encourage (or in many cases make possible) healthier lifestyles. To do this, we need to change the policy settings so that health and well-being become more prominent factors in decision-making processes.

Finally, reducing childhood overweight and obesity requires cooperation across all levels of Government; and we urge the NSW Government to use COAG process to advocate for actions beyond its direct sphere of responsibility.

To reduce the growing rates of overweight and obesity amongst our most vulnerable children and young people, we must focus on the systemic causes of inequalities, and work in partnership to address them. In doing so, we strive to give all children and young people the very best chance of a healthy start in life.