

# Policies influencing the provision of healthy food and drinks in local government-owned sport and recreation facilities in Victoria, Australia

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What, when and how people eat is strongly influenced by their local food environments.<sup>1</sup> Local government (LG) can be an important influence on these food environments through their policies and efforts to promote community health and wellbeing. LG-owned and managed sport and recreation facilities represent an important setting for health promotion, particularly as they promote an overall message of healthy living and are used by large numbers of people, including children.<sup>2</sup> Despite this, research to date has found that an obesogenic environment exists in many sport and recreation facilities, with unhealthy foods and drinks more readily available<sup>3</sup> and purchased more frequently than healthier options.<sup>4</sup>

Limited evidence exists regarding the presence and type of LG nutrition-related policies and the degree to which they support healthy eating in LG-owned or managed sporting facilities. This study aimed to assess policies, attitudes that inform obesity prevention practices, and the provision of healthy food and drink options in LG-owned sport and recreation facilities in Victoria, Australia.

## Method

A cross-sectional survey was emailed to all LGs in Victoria (n=79) in July 2018. The survey was addressed to an employee in a managerial role (personalised where possible – 82% of emails) or distributed to the most appropriate individual when sent to a generic

## Abstract

**Objective:** Sporting facilities owned or managed by local governments (LGs) can promote health by selling healthy food and drinks. This study assessed the policies, attitudes and practices of LGs in Victoria, Australia, relating to obesity prevention and the provision of healthy food in their sporting facilities.

**Methods:** An online survey was e-mailed to all Victorian LGs (n=79) in July 2018. Questions assessed LGs' healthy food policies relating to sport and recreation facilities and the priority LGs give to obesity prevention.

**Results:** Forty-nine LGs (62%) completed the survey from July to November 2018. Obesity prevention and promotion of healthy food and drink were a moderate to high priority for councils. The priority LGs give to healthy food promotion was reported to have increased over the previous year in 55% of LGs. Those LGs in areas of higher socioeconomic position and located in major cities had made more healthy changes at their facilities.

**Conclusion:** Obesity prevention is a priority for LGs, and they are making changes to improve the food environments in their sporting facilities. Greater support may be required for smaller LGs and those in socioeconomically disadvantaged areas to create healthier food environments.

**Implications for public health:** Monitoring changes to healthy eating policies within council facilities is essential to understand how local government actions are contributing to obesity prevention.

**Key words:** local government, sport and recreation, food, nutrition, policy

LG address. Contact details were obtained from publicly available information on LG websites. Non-responders were followed-up by email and phone call. The survey was closed in November 2018.

Closed and open-ended questions assessed LGs' healthy food and drink provision policies relating to sport and recreation facilities and the priority given by LGs to obesity prevention. Questions were informed by a previously developed policy implementation and adoption survey designed for sports and recreation facilities in Canada.<sup>5</sup>

Survey questions asked for information including: 1) the role/position of the respondent and LG location; 2) the types of facilities that sold food or drink owned or managed by the LG, and any changes made to improve the healthiness of food and drink provision to date; 3) the priority given to obesity prevention and the removal of sugary drinks from facilities; and 4) barriers and enablers to change (Supplementary File A).

The survey was distributed via Qualtrics, an online survey platform. Data was exported into Microsoft Excel with descriptive statistics

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(proportions and medians) calculated in Stata (version 15).

The survey results were contrasted with data from 79 Municipal Public Health and Wellbeing Plans, which were collected by making use of publicly available data from council websites. When the plan was not easily accessible online, the council was contacted via email and a copy requested. The Public Health and Wellbeing Plans were searched for terms aligned with the aims of the previously completed survey, including 'obesity prevention', 'healthy eating', 'active living' and 'sport and recreation'. This information was then compared with the survey responses received from each LG.

Pearson chi-square tests, Wilcoxon rank-sum or Kruskal-Wallis tests were used where relevant to compare LG subgroups by: 1) socioeconomic position (SEP), measured using the Socio-Economic Indexes for Areas or SEIFA (low  $\leq$  5<sup>th</sup> decile/high  $\geq$  6<sup>th</sup> decile)<sup>6</sup>; LG remoteness, measured using the Australian Bureau of Statistics classifications (major cities of Australia, inner regional Australia, outer regional Australia, remote Australia, and very remote Australia)<sup>7,8</sup>; 2) LG population size (low  $<$  39,351 residents/high  $\geq$  39,351 residents)<sup>9</sup>; 3) number of LG-owned sports and recreation facilities (small  $<$  32 facilities/large  $\geq$  32 facilities); and 4) whether or not the LG's publicly available Municipal Public Health and Wellbeing Plans<sup>10</sup> included terms relating to the survey. For continuous variables, cut points representing the median value were used in each case. A Spearman rank correlation coefficient or  $r_s$  was calculated to assess the relationship between subgroups;  $p < 0.05$  was considered statistically significant.

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving research study participants were approved by the Deakin University Human Research Ethics Committee (reference number HEAG-H 35\_2018). Informed implied consent was obtained from all participants involved in the study.

## Results

### Respondents

Of the 79 invited LGs, 49 (62%) completed the online survey. Individuals completing the survey on behalf of their LG included sport and recreation coordinators/managers (45%), health and wellbeing coordinators/ managers

(29%) and others in similar roles (27%). The median SEIFA decile for responding and non-responding LGs was 5 [interquartile range 3, 8] and 6 [4, 9], respectively; and the median population size was 39,351 [16,495; 121,865] and 47,290 [11,600; 135,959] residents, respectively. Forty-three per cent of responding LGs (40% of non-responders) were located in major cities, 45% (37%) in inner-regional areas, and 12% (23%) in outer-regional areas.

In their Municipal Public Health and Wellbeing Plans, 16% of responding LGs mentioned obesity prevention (vs. 3% of non-responders), 77% mentioned healthy eating (93%), 96% mentioned active living (97%), and 71% mentioned sport and recreation facilities (80%) as key priorities. All responders and non-responders mentioned at least one of these four priority areas and 6% of responders mentioned all four areas (3% of non-responders).

### Facilities and health-related priorities

All responding LGs reported owning sport and recreation facilities (with more than 2,000 sites in total). Responding LGs that sold food or drink owned indoor sport stadiums (5%), outdoor hard courts (31%), aquatic centres (9%), golf courses (4%), ovals (49%) and gyms (2%). Fifty-five per cent of LGs reported that the priority they gave to healthy food promotion had increased over the previous year. Using an 11-point scale, where 0=low priority and 10=high priority, LGs reported that obesity prevention and the promotion of healthy food and drink consumption were a moderate to high priority (obesity prevention: median score 7 [5, 9]; promoting healthy foods: 7 [5, 8]). Eighteen per cent of LGs selected the maximum score of 10 regarding the priority given to obesity prevention and 10% selected the maximum score of 10 for priority given to promoting healthy food and drinks. Obesity prevention and promoting healthy food and drink were rated as being a higher priority by LGs with a higher vs. lower SEP (obesity prevention: 8 [5, 10] vs. 7 [5, 8],  $p=0.19$ ; promoting healthy foods: 7 [6, 9] vs. 6 [6, 8],  $p=0.08$ ), larger vs. smaller population (obesity prevention: 8 [5, 10] vs. 7 [5, 8],  $p=0.45$ ; promoting healthy foods: 7 [6, 9] vs. 6 [5, 8],  $p=0.11$ ); and located in major cities vs. regional areas (inner-regional Australia, outer-regional Australia), (obesity prevention: 8 [5, 10] vs. 7.5 [5, 8] vs. 4.5 [2, 7]  $p=0.16$ ; promoting healthy foods: 8 [7, 9], 6 [5, 7] vs. 5 [2, 8],  $p=0.02$ ), see Table 1. LGs with more

facilities nominated the promotion of healthy eating and drinking as a higher priority and obesity prevention as a lower priority compared to those with fewer facilities (Table 1). Weak to moderate correlations (Spearman's rank correlation coefficient or  $r_s$ , range -0.38 to 0.52) were observed between SEP, remoteness, population and the number of facilities (except for remoteness vs. population,  $r_s = -0.80$ , and SEP vs. remoteness,  $r_s = -0.63$ ).

### Healthy changes made to food environments

Sixty-nine per cent of LGs had made changes to the food and/or drinks (2% made changes to food, 18% made changes to drinks, and 49% made changes to both food and drinks) at sport and recreation facilities at the time of the survey. Few LGs (10% of LGs that made changes to food and 16% of LGs that made changes to drinks) reported having made all desired changes to increase healthy options or remove sugary drinks from LG-owned sport and recreation facilities (median score 5 [4, 7] and 5 [4, 8], respectively, on an 11-point scale where 0=not thought about and 10=completely changed). LGs who reported being closer to completing all desired changes (increasing healthy options and reducing sugary drinks) were those in areas with a higher vs. lower SEP (increase healthy options: 7 [5, 8] vs. 5 [4, 6]  $p=0.03$ ; reducing sugary drinks: 6 [4, 8] vs. 5 [3, 7],  $p=0.13$ ), a larger vs. smaller population (increase healthy options: 6 [5, 8] vs. 6 [4, 6],  $p=0.07$ ; reducing sugary drinks: 6 [4, 8] vs. 4.5 [3, 6.5],  $p=0.12$ ), located in major cities vs. inner regional Australia vs. outer regional Australia (increase healthy options: 7 [5, 9] vs. 5 [4, 6] vs. 4.5 [1, 5],  $p=0.04$ ; reducing sugary drinks: 7 [4, 10] vs. 5 [3, 6] vs. 3.5 [1, 7],  $p=0.07$ ) and with more facilities vs. fewer facilities (increase healthy options: 6.5 [4, 8] vs. 5 [4, 6],  $p=0.11$ ; reducing sugary drinks: 7 [4, 8] vs. 4 [3, 5],  $p=0.02$ ), see Table 1.

### Policy

In the survey, 43% of LGs reported having a formal policy on healthy food and drink provision in their facilities. Of these, 62% had a policy to increase the availability of drinking water (both free and available for purchase), and 57% had a policy to reduce the availability of sugary drinks at LG-owned facilities. There were no statistical differences in the presence of policies by SEP, population size, number of facilities or rurality (all  $p > 0.05$ ).

## Barriers and enablers

LGs reported support from key stakeholders (e.g. LG members, leadership teams) to be the most important enabler of implementing healthy changes, whereas a range of barriers were identified as important by respondents (Table 2). Similar barriers and enablers were identified when results were stratified by SEP, remoteness, local government area (LGA) population, number of facilities and whether the LGs had previously made changes to improve the healthiness of their facilities (Supplementary File B, Table B.1 and B.2). Ninety per cent of all survey respondents had engaged with external organisations or individuals to assist with changing the food and/or drink environment, and 47% had received funding or in-kind support to do so. Both those who had received and those who had not received funding or in-kind support identified funding support as an important facilitator. On a scale of 1–7, where 1 is a high priority and 7 is a low priority, of those who received funding, 68% ranked funding as 1 or 2, with 25% ranking as 3. Fifty per cent of councils that did not receive funding ranked funding as 1–2, with 42% ranking funding as 3.

## Discussion

In this study identifying policies, attitudes and practices of Victorian LGs relating to obesity prevention and provision of healthy food and drink options in LG-owned sport and recreation facilities, we found that LGs reported obesity prevention and the provision of healthy options to be a moderate to high priority. The majority of LGs also reported that the priority given to healthy food promotion had increased over the previous year. Most LGs had begun to improve the provision of healthy food and drinks in sport and recreation facilities, but more work is required for these offerings to align with the facilities' healthy lifestyle message. Those LGs with a higher SEP, located in major cities, with a larger population, and with more facilities within their LGA appeared to be closer to completing desired changes at their facilities. Fewer than half the responding LGs reported having a healthy food and drink policy. Support from key stakeholders was ranked as the most important enabler to implementing healthy changes.

A similar 2012 pilot study in two US states (n=210 municipalities) captured local-level policy support for healthy eating and active living.<sup>11</sup> Similar to our own study, that

study found most local governments had community Public Health and Wellbeing Plans related to healthy eating (78%) and active living (86%), and these were more likely to be present in LGs with larger populations. A 2012 study conducted with 11 key informants from LG identified regulatory options for LG in Victoria and found high support for policies to create supportive environments for physical activity.<sup>12</sup> However, little support was demonstrated for policy changes to promote healthy eating. These opinions did not translate to formal policy priorities in The Municipal Public Health and Wellbeing Plans. By contrast, in our study, both healthy eating and active living priorities were seen in a high number of the Public Health and Wellbeing Plans. This discordance between previous stakeholder interviews and current Public Health and Wellbeing Plans may be due to several factors, including public opinion within the municipality, or time differences between when the interviews were conducted and the current Public Health and Wellbeing Plan was developed.

In our study, we found that just over half of LGs had a policy to increase the availability of drinking water and reduce the availability of sugary drinks. The development of healthy food policies and nutrition

**Table 1: Priority given to obesity prevention and food and drink changes in local government-owned sport and recreation facilities stratified by local government socio-economic position, remoteness, population size and number of sport and recreation facilities.**

Priority given to:	Overall results (n=49)	Socio-economic position		Remoteness <sup>a</sup>			LGA <sup>b</sup> population size		Number of sports and recreation facilities	
		Low <sup>c</sup> (n=27)	High <sup>d</sup> (n=22)	Outer regional Australia (n=6)	Inner regional Australia (n=22)	Major cities of Australia (n=21)	Low <sup>e</sup> (n=24)	High <sup>f</sup> (n=25)	<32 <sup>g</sup> (n=23)	≥32 <sup>g</sup> (n=26)
Promoting healthy eating/drinking <sup>h</sup>	7 [5, 8]	<b>6 [5, 8]</b>	<b>7 [6, 9]</b>	5 [2, 8]	6 [5, 7]	8 [7, 9]	6 [5, 8]	7 [6, 9]	6 [5, 8]	7 [5, 8]
Reducing the prevalence of obesity <sup>i</sup>	7 [5, 9]	7 [5, 8]	8 [5, 10]	4.5 [2, 7]	7.5 [5, 8]	8 [5, 10]	7 [5, 8]	8 [5, 10]	7 [6, 9]	6.5 [5, 9]
Increasing the availability of healthy food/drink in LG owned sport and recreation facilities <sup>j</sup>	5 [4, 7]	<b>5 [4, 6]</b>	<b>7 [5, 8]</b>	<b>4.5 [1, 5]</b>	<b>5 [4, 6]</b>	<b>7 [5, 9]</b>	5 [4, 6]	6 [5, 8]	5 [4, 6]	6.5 [4, 8]
Reducing the availability of sugary drinks for sale in LG owned sport and recreation facilities <sup>k</sup>	5 [4, 8]	5 [3, 7]	6 [4, 8]	3.5 [1, 7]	5 [3, 6]	7 [4, 10]	4.5 [3, 6.5]	6 [4, 8]	<b>4 [3, 5]</b>	<b>7 [4, 8]</b>

### Notes:

Results with significant difference between subgroups are indicated in bold

a: Remoteness classified according to the Australian Bureau of Statistics classifications, which makes use of Accessibility and Remoteness Index of Australia (ARIA+). ARIA+ is derived by measuring the road distance from a point to the nearest Urban Centres and Localities in five separate population ranges. The Australia Statistical Geography Standard (ASGS) Statistical Area Level 1 (SA1) boundaries are overlaid onto the ARIA+ grid and an average score is calculated based upon the grid points that are contained within each SA1. The resulting average score determines which remoteness category is allocated to each SA1. The five categories are: Major Cities of Australia, Inner Regional Australia, Outer Regional Australia, Remote Australia, Very Remote Australia (7, 8)

b: LGA, local government area

c: Socio-Economic Indexes for Areas ≤5th decile (6)

d: Socio-Economic Indexes for Areas ≥6th decile (6)

e: Low <39,351 residents, based on median population size

f: High ≥39,351 residents, based on median population size

g: Median number of sport and recreation facilities reported 32 [21, 62]

h: Within your LGA would you say promoting healthy eating/drinking is a: (rank priority) (11-point priority scale: 0= low priority, 10= high priority)?

i: What is your local government's position on taking action to reduce the prevalence of obesity in your LGA? (11-point priority scale: 0= we have not thought about it, 10= it is a major focus)

j: What is your local government's position on taking action to increase the availability of healthy food/drink in LG owned sport and recreation facilities? (11-point priority scale: 0= we have not thought about it, 10= we have completed all changes to increase availability of healthy offerings)

k: What is the local government's position on taking action to reduce the availability of sugary drinks for sale in your LG-owned sport and recreation facilities? (11-point priority scale: 0= we have thought about it, 10= we have fully removed sugary drinks)

standards have emerged as key strategies to address unhealthy food environments; however, implementing these guidelines requires dedicated resources, investments in stakeholder relationship building, and introducing these changes over a long period of time.<sup>13</sup> Given the numerous barriers to implementing high-level policy for healthy eating, it may be more effective to incorporate specific healthy provisions into relevant facility food service contracts. A recent study conducted in Canada examined incorporating stipulations into contracts at sport and recreation facilities, specifically into vending machine contracts to improve the healthiness of the products.<sup>14</sup> This study found that those facilities with specific healthy vending contracts had a larger decrease in unhealthy products sold compared to those that did not have a healthy vending contract. Incorporating specific clauses into vending or drink fridge contracts may help facilities implement a healthy change without requiring high-level policy.

The engagement of Australian LGs in health promotion has increased over the past twenty years. A repeated cross-sectional Australian study (1995: n=650 LGs; 2007: n=600) on the presence of LG policies relating to 29 food and nutrition areas found a general increase in food and nutrition-related activities by local governments between 1995 and 2007.<sup>15</sup> Activities such as programs to promote healthy eating practices for LG staff and monitoring of school canteen compliance with food standards increased by 16% and 14%, respectively, over this time. Our own findings suggest that this trend towards

increasing health promotion in Australian LGs is continuing.

Despite 69% of LGs making changes to food and/or drinks for sale in their facilities, more change is required for the food and drink availability to align with the health-promoting message that sports and recreation facilities aim to send. LGs with a higher SEP, located in major cities, with a larger residential population and with fewer facilities were more advanced in improving the food and drink environment. Approximately half of LG funding is collected via property taxes.<sup>16</sup> LGs with a larger population, and particularly those with dense populations in major cities, are likely to receive greater revenue overall and per square kilometre, and therefore have more resources to allocate to improving their LGA's health and wellbeing. These findings, and the observation that those LGs with a higher SEP reported being closer to completing desired changes at their facilities, run counter to the observed need, with overweight and obesity more prevalent in rural and lower SEP areas.<sup>17</sup>

Our study identified barriers and enablers for the provision of healthy food and drinks, with the most prominent enabler identified as adequate support from key stakeholders, whereas a range of barriers were recognised with none being clearly most important. This aligns with a previous study that examined key barriers and enablers in the adoption and implementation of nutrition guidelines in recreational facilities in Canada.<sup>18</sup> That study similarly noted stakeholder support (including customers and managers) as an important facilitator and both the lack of resources and training

and an inability to source appropriate healthy food and drink alternatives as key barriers to implementation.<sup>18</sup> A recent study interviewing 11 aquatic and recreation managers in Victoria, Australia also identified stakeholder (including staff and management) support as key to implementing a healthy retailer intervention.<sup>19</sup> The lack of hierarchy in barriers in our study may be due to the fact that all successful changes require similar key elements, whereas progress may be inhibited due to a variety of different context-specific reasons. Even though no barriers appeared to be more important than another, identifying and addressing barriers is clearly important for effective implementation of policies and healthy changes.<sup>19,20</sup> In order to manage barriers, capacity building has been identified as the behind-the-scenes work needed to increase the likelihood of a sustainable healthy change initiative. This includes the development of skills and resources, gathering organisational commitment and establishing key infrastructure required for the healthy change initiative. Further, lessons can be learnt from other settings, including progress in hospital food environments. Key recommendations to successfully implementing a healthy food and beverage policy in a hospital setting were identified in a 2016 evaluation summary released by The Victorian Health Promotion Foundation.<sup>21</sup> These key recommendations included using consistent messaging relating to the change, establishing trusting relationships between stakeholders and attempting small, short-term trials to develop retailers trust, and identifying and addressing specific barriers to change before making a larger change.<sup>21</sup>

**Table 2: Barriers and enablers to making the food and/or drink environment healthier in sports and recreation facilities [sorted from most (1) to least important (7)] (n=49 LGs<sup>a</sup>).**

Domain	Enablers			Barriers		
	Enabler	Importance ranking <sup>b</sup> (Median, [interquartile range])	Proportion of LGs <sup>a</sup> identifying enabler (%)	Barrier	Importance ranking <sup>b</sup> (Median, [interquartile range])	Proportion of LGs identifying barrier (%)
Stakeholder support	Support from key stakeholders	1 [1,2.5]	90	Inadequate support from key stakeholders	3 [1,5]	78
Funding	Appropriate funding	2 [2,3]	80	Inadequate funding	3 [2,5]	78
Control over facilities	Adequate control over facilities	3 [2,4]	82	Inadequate control over facilities	3 [2,4]	84
Time	Adequate time	4 [3,4]	78	Inadequate time	3 [2,4]	78
Ability to source appropriate healthy alternatives (e.g. healthier drink options)	Ability to source appropriate healthy alternatives (e.g. healthier drink options)	4 [3,5]	76	Inability to source appropriate healthy alternatives (e.g. healthier drink options)	5 [3,6]	67
Suppliers	Agreeable suppliers	5 [4,6]	59	Disagreeable suppliers	5 [4,6]	59

Notes:

a: LG, local government

b: Ranked from 1 to 7 where 1=most important and 7=least important. When an option was not considered a barrier/enabler it was left blank or marked as 0

### Strengths and limitations

This study may be useful for monitoring changes to healthy food and drink policies in government-owned sport and recreation facilities over time. Further, the study could help national or state governments target particular LGs that are likely to require additional assistance in this area – smaller and lower SEP LGAs in particular.

Although the majority of LGs responded (62%), a potential limitation of our study is that the 49 LGs who completed the survey may not be representative of Victorian LGs. Responding LGs had on average slightly smaller populations with somewhat lower SEP compared to non-responding LGs. Additionally, as only one person per LG completed the survey, responses may not fully represent the views of the LG.

### Conclusion

Our study demonstrates that the majority of Victorian LGs are addressing, or intend to address, the obesogenic environments in sports and recreation facilities by changing the healthiness of food and drink availability. Most LGs report that further action is required to achieve healthier food environments.

### Implications for public health

Monitoring changes to healthy eating policies within LG facilities is essential to understand how and where LG actions are contributing to obesity prevention. Greater support for smaller LGs and those in socioeconomically disadvantaged areas appears to be required, particularly given the close association between socioeconomic position and obesity.

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### Supporting Information

Additional supporting information may be found in the online version of this article:

**Supplementary File A:** Survey of food and drink policies and provision in Victorian sports and recreation facilities

**Supplementary File B:** Supplementary tables.