

# Going soft drink free in YMCA Victoria aquatic and recreation centres: policy evaluation



Prepared for VicHealth

September 2016

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## Table of Contents

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Executive Summary.....	2
Research Brief.....	4
Background.....	5
Methods.....	8
Extent of Policy Implementation.....	12
Findings: Potential Health Impact.....	14
Findings: Potential Financial impact.....	19
Discussion and Recommendations.....	20
Conclusion.....	23
Acknowledgments.....	24
References.....	25

## Tables and Figures

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Table 1: YMCA Healthy Food and Beverage Policy Targets.....	6
Table 2: Aims and data sets.....	8
Table 3: Data presented in this report.....	10
Table 4: Centre characteristics.....	10
Table 5: Analysis undertaken.....	11
Figure 1: Change in food and beverage availability 2014 – 2016.....	12
Figure 2: Change in the display of ready-to-drink beverages 2014 – 2016.....	13
Figure 3: Volume of ready-to-drink beverage purchases per 100 attendees.....	14
Figure 4: Change in proportion of ready-to-drink beverage volume sold over summer period.....	15
Figure 5: Breakdown of ready-to-drink beverage sales summer 2014/15.....	16
Figure 6: Breakdown of ready-to-drink beverage sales summer 2015/16.....	16
Figure 7: Food and beverages consumed at the centre according to whether they were purchased at the centre or brought to the YMCA centre from home.....	18

## Executive Summary

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### Overview

YMCA Victoria is the state's largest provider for community recreation, managing local aquatic and recreation centres on behalf of approximately 24 local governments across the state. Collectively these centres attract 17 million visits every year, with approximately 58,000 children participating in swimming lesson each week. In late 2014, YMCA Victoria announced the introduction of a Healthy Food and Beverage Policy that would be phased into the kiosks, cafes and catering services attached to their sport, recreation and aquatic centres across the state. The aim of this policy was to create a healthier nutrition environment for their patrons and staff members. As part of this policy YMCA promoted and supported a 'Soft Drink Free Summer', aiming for the removal of regular soft drinks during the summer of 2015/16. Here we capitalise on that opportunity to evaluate the impact of that policy on customer behaviour and retail sales.

In this report we focus on ready-to-drink beverages – all drinks that are not made onsite at the centres, and including soft drink, diet soft drink, iced teas, mineral waters, juices, sports drinks, flavoured waters, and pure and sweetened milk drinks.

### Objective

We aimed to analyse the impact of the YMCA Healthy Food and Beverage Policy's Soft Drink Free Summer on availability of unhealthy drinks, customer purchases of unhealthy drinks and total drink sales.

### Methods

We used a combination of customer surveys, drink availability photo audits and retail sales from nine YMCA Victoria centres across metropolitan Melbourne. We used the Victorian government guidelines to classify drinks into best choices ('green'), choose carefully ('amber') and limit intake ('red'). We analysed changes in availability of unhealthy drinks, customer purchases of unhealthy drinks and total drink sales prior to and post the Soft Drink Free Summer of December 2015-January 2016, taking into account changes in attendance rates over time. While we focussed on the category of ready-to-drink beverages we also looked at availability and dollar sales across all beverages sold at the centres.

### Findings

In June 2016 (compared to June 2014), across the nine YMCA Victoria sites examined, the proportion of all available food and beverages that were best choices ('green') had increased from 14% to 28%, with the proportion 'red' decreasing from 71% to 45%.

The impact of the Soft Drink Free Summer was evident, with the proportion of available ready-to-drink drinks that were 'green' increasing from 32% to 66% and the proportion 'red' decreasing from 62% to 25% (comparing June 2014 to February 2016) within the same 9 centres.

The YMCA's Soft Drink Free Summer appeared to have its intended effect, with the volume of ready-to-drink 'red' beverages sold decreasing by 55% after the campaign was introduced, the equivalent of 2,000 cans of soft drinks less per month across the nine centres.

Surveys of YMCA Victoria customers found no evidence that customers have responded to the healthier food provision by bringing their own 'red' food and drink from home.

We found no change in total dollar sales for all beverages, despite a small decrease in dollar sales of ready-to-drink beverages after the campaign was introduced.

### **Conclusions**

All YMCA Victoria centres analysed in this report were successful in their aims of removing all 'soft drink' and increasing the availability of more 'green' and 'amber' options. To meet their end of 2016 goal of less than 10% of fridge space filled with 'red' drinks, YMCA Victoria will need to continue to work with its centres to reduce the availability of sports drinks. While not examined in-depth in this report, it is likely that different centres require different food offerings, with different food outlet set-ups and different customers with varying preferences and budgets.

Furthermore, the analysis of dollar sales suggests that within the context of the variety of drinks sold across the nine YMCA Victoria centres, customers are willing to switch to healthier drink options with no decrease in overall dollar sales to the centres themselves.

A large reduction in the unhealthiest drink choices was seen – 2,000 fewer cans of soft drink purchased over the nine centres, per month.

YMCA Victoria should be commended for the leadership and enthusiasm they have demonstrated through the implementation of their Healthy Food and Beverage Policy.

Evidence gathered will be used to translate policy to practice, create public debate and generate public support for the broader roll out of these/similar policies across the state.

We recommend broad consideration of these findings by other stakeholders alongside the continuous building of this evidence base, capitalising on the increasing implementation of healthy food policies across Victoria and internationally.

## Research Brief

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This report is one element of a broader project evaluating the economic and health costs and benefits of implementing healthy eating policies in two key public settings: healthcare and aquatic & recreation centres. Evidence gathered will then be used to translate policy to practice, create public debate and generate public support for the broader roll out of these or similar policies across the state. This project also fills a gap in knowledge relating to VicHealth's 3-year priority '*More people choosing water and healthy food options*'.

In late 2014, YMCA Victoria announced the introduction of a Healthy Food and Beverage Policy that would be phased into the kiosks, cafes and catering services attached to their sport, recreation and aquatic centres across the state. The aim of this policy was to create a healthier nutrition environment for their patrons and staff members. As part of this policy, YMCA initiated a 'Soft Drink Free Summer' campaign, which aimed to phase out regular soft drinks by December 2015. A secondary aim for this campaign was to encourage centres to also phase out other 'red' drinks from their refrigerators (such as iced teas, mineral waters and large fruit juices) and retain only a small range of sports drinks. Removal of sports drinks will become the major focus in 2017. All the above drinks are collectively known as 'ready-to-drink' and include any beverage product that is not made on-site at the YMCA centre. Ready-to-drink drinks include soft drink, diet soft drink, iced teas, mineral waters, juices, sports drinks, flavoured waters, and packaged milk drinks, and are the primary focus of this report.

In this report we capitalise on the opportunity presented by the YMCA Victoria's 'Soft Drink Free Summer' campaign to evaluate the impact of removing soft drinks on customer behaviour and retail sales.

This project had three aims:

1. To assess the extent of implementation of the Healthy Food and Beverage Policy within a select number of YMCA Victoria aquatic and recreation centres, with a focus on the changes made to the ready-to-drink beverages.
2. To assess the potential health impacts of the changes to ready-to-drink beverage availability as part of the Healthy Food and Beverage Policy at selected YMCA Victoria aquatic and recreation centres through changes in customer drinks purchases.
3. To assess the potential financial impact of the Healthy Food and Beverage Policy, specifically on total dollar sales of ready-to-drink beverages, and beverages overall at selected YMCA Victoria aquatic and recreation centres.

## Background

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There is increasing consensus that improving food environments is a critical strategy in improving population health through improved nutrition and decreased obesity [1, 2]. A number of government strategies have been proposed, and recently many have been implemented, but the role of the food retailer in improving the food environment has not been a common focus. The food retailer, along with organisations that auspice them, have a number of potential levers to improve diet quality, including improving products on offer, placement of products, public information and labelling and pricing strategies. However, there has been little work to date to synthesise the opportunities provided by food outlets, or to evaluate their effects on population health. Furthermore, there has been almost no work to understand the impact of such strategies from the point of view of the retailer. As small food outlet retailers are business owners and managers first and foremost, it is critical to identify information relevant to their perspective, such as ease of implementation, customer satisfaction, sales and profitability if potential strategies are to be implemented by retailers and sustained.

In Victoria, Australia, there has been a range of resources produced by the state government to support food outlets and organisations that include them, to provide and promote healthier foods. The Victorian Government has developed the *Healthy Choices: policy guidelines for sport and recreation centres* (henceforth referred to as 'Healthy Choices Guidelines') to help ensure that healthy foods and drinks are offered and promoted in places like hospitals, health services, sport and recreation centres, parks and workplaces [3].

YMCA Victoria is a large not-for-profit community organisation and operates out of 150 locations across Victoria, including aquatic and recreation centres and outdoor pools, childcare, youth services, disability services and camps. YMCA Victoria is the state's largest provider for community recreation, managing local aquatic and recreation centres on behalf of 24 local governments across the state. Collectively these centres attract 17 million visits every year, with approximately 58,000 children participating in swimming lesson each week and are located in metropolitan Melbourne, large regional towns, and surrounding regions. Although aquatic and recreation centres in Australia encourage and facilitate healthy living through the promotion of physical activity and community connectedness, traditionally these settings typically provide food and drinks that are high in sugar, fat and salt with little or no nutritional value. Offering healthier food and beverage offerings within these centres has the potential to positively influence the nutrition of their communities.

In late 2014, YMCA Victoria announced the introduction of a Healthy Food and Beverage Policy that will be implemented over three years across the entire organisation including the kiosks, cafes and catering services attached to their 70 aquatic and recreation centres across the state. The aim of this policy was to create a healthier nutrition environment and model healthy eating behaviours and patterns for their customers, staff and volunteers. As part of this policy, YMCA initiated a 'Soft Drink Free Summer' campaign, which aimed to phase out regular soft drinks by December 2015. A secondary aim for this campaign was to encourage centres to also phase out other 'red' drinks from their refrigerators (such as iced teas, mineral waters and large fruit juices) and retain only a small range of sports drinks. All the above drinks are collectively known as 'ready-to-drink' and include any beverage product that is not made on-site at the YMCA centre. Ready-to-drink drinks include soft drink, diet soft drink, iced teas, mineral waters, juices, sports drinks, flavoured waters, and packaged milk drinks, and are the primary focus of this report.

NOT FOR FURTHER DISSEMINATION

The implementation has been pro-actively driven from the Health Promotion and Advocacy Team at the YMCA Victoria head office, with the ongoing implementation process being widely communicated and disseminated amongst interested stakeholders (other recreation centres, councils), through media, invited talks and conferences.

Here we capitalise on the removal of soft drinks within YMCA Victoria centres to evaluate the extent to which it has positively influenced the nutrition of their customers. The Health Promotion and Advocacy Team at the YMCA Victoria head office

Background to implementation of the Healthy Choices guidelines across YMCA Victoria centres

### Healthy Choices Guidelines

YMCA Victoria has used the Healthy Choices Guidelines [3] to develop their Healthy Food and Beverage Policy. This involves making changes to the food and beverages available on its premises through cafes, kiosks and vending machines, to provide a greater number of healthier choices, and reduce unhealthy options for its customers, staff and volunteers. The Healthy Choices Guidelines use a traffic light system to classify foods and drinks as 'green' (best choices), 'amber' (choose carefully) or 'red' (limit intake) based on nutrient composition and serving size. YMCA Victoria has developed a 3-year implementation plan, with benchmarks for each year – detailed in Table 1.

**Table 1: YMCA Healthy Food and Beverage Policy Targets**

<b>POLICY COMPONENTS</b>	<b>2015*</b>	<b>2016*</b>	<b>2017*</b>
<b>OVERALL POLICY GOAL</b>			'Green' food and drink increased to 50% and 'red' food and drink decreased to <10%
<b>DRINK FRIDGE SPECIFIC GOAL</b>	Soft drinks removed, sugary drinks reduced to only Gatorade	Drink fridges = 10% sugary drinks (Gatorade only)	No sugary drinks
<b>FOOD SPECIFIC GOAL</b>		'Red' food significantly reduced.	'Green' food increased to 50% and 'red' food decreased to <10%
<b>VENDING GOAL</b>	Unhealthy vending removed, healthy vending introduced		
<b>CAMPAIGN</b>	Soft Drink Free summer: All soft drink removed (summer 15/16)	Cut the Junk: junk food removed/ significantly reduced	Sports Drinks – all sports drinks removed

\*Changes to be implemented by the end of year

The implementation of the Healthy Food and Beverage Policy 2014-2017 by YMCA Victoria has been gradual, with a focus on encouraging centres to take ownership over the policy. Resources in the form of toolkits, recommended product lists and communication and marketing collateral have been provided to centres, with additional help available if needed. While all centres will eventually need to comply with the overarching aims of the policy, they have been given the autonomy to make changes at their own pace to encourage ownership of the policy's implementation and the long-term

profitability of the kiosk or café. Additionally, YMCA Victoria engaged both existing and new suppliers to ensure the suppliers understood and supported the key objectives of the policy through the range of food and beverage products they supplied to YMCA centres. The Health Promotion and Advocacy Team at the YMCA Victoria head office supported the implementation through the provision of general toolkits and advice to centres on a case by case basis.

#### Soft Drink Free Summer campaign

Between October 2015 and February 2016, YMCA Victoria ran a 'Soft Drink Free Summer' campaign in 60 of its aquatic and recreation centres and skate parks in metropolitan Melbourne, as well as regional and rural Victoria. These centres were encouraged to concurrently phase-out soft drinks and increase their range of healthier ready-to-drink beverages (such as water and smaller varieties of milk and pure fruit juice). Diet soft drinks were not required to be removed as they contain very little sugar, however a number of the centres assessed in this report chose to also remove diet soft drinks as well as regular soft drinks. The removal of soft drinks began in November 2014 in order for centres to be soft drink free by December 2015, however some centres were still in the process of selling small amounts of excess stock during the 'Soft Drink Free Summer' period.

To support centres with the changes, approved product lists and planograms (fridge layouts) were developed in conjunction with the beverage supplier and were disseminated to the centres via internal communication channels as well as through the beverage supplier's sales network. Advertising collateral highlighting the sugar content of soft drinks was also made available to centres to help educate customers on the rationale for the changes to availability of soft drinks.

A secondary aim of the campaign was to encourage centres to phase out all other 'red' ready-to-drink beverages, such as iced teas, large fruit juices and flavoured milks, and reduce the range of sport drinks to no more than 10% of refrigerator space. While some centres have already decided to adopt these measures along with the removal of soft drinks, this aim will become the focus of the 2016/17 summer. The complete removal of sports drinks is expected to occur during 2017, in conjunction with an awareness campaign regarding the sugar content and health risks associated with sports drinks and the promotion of healthier alternatives for rehydration post exercise.

## Methods

A number of different data sources have been used to address the aims of this report (Table 2).

**Table 2: Project aims and associated data sets**

AIM	DATA SETS
1. Extent of policy implementation	Photo data
2. Potential health impacts	Beverage sales data; Attendance data; Customer survey data
3. Potential financial impacts	Beverage sales data; Attendance data

The data detailed below focuses on nine centres (see Table 4 for more details). Included centres met the following criteria: the presence of a café or kiosk within the centre, available sales data from 2013 to 2016, and a commitment to remove soft drink by the 2015/16 summer. We targeted large centres with year-round children's swimming lessons. Table 3 gives a summary of the time-points of data collection.

### Photo data

Photographs of food and beverages on display, as well as menus, were taken at all nine centres before the policy was implemented (June 2014), and following the Soft Drink Free Summer campaign (February 2016).

### Sales data

Monthly itemised sales data between January 2013 and May 2016 was obtained for all nine centres detailed in Table 3.

### Attendance data

Monthly attendance data was obtained for all nine centres for the time period of January 2013 and May 2016. This was used in the sales analyses to explore the impact of a potential change in foot-traffic through the centres. While centres vary in their methods used to collect centre attendance data, each centre's method remained consistent during the data collection phase.

### Survey data

Brief surveys were conducted on exiting YMCA customers of three of the centres included in the evaluation study. Every third exiting customer was approached, and asked multiple choice answer questions regarding the activities undertaken at the centre and demographic information, as well as open-ended questions regarding food and beverages consumed within the centre (both purchased at the centre and brought from outside the centre). The surveys were created using the 'QuickTap Survey' application, and the researchers entered answers directly into the application using an electronic tablet. Surveys took 30-120 seconds per individual surveyed. Baseline surveys were conducted during summer and winter, and the follow up survey was conducted in winter. Results presented in this report are from a comparison of the winter baseline (May and June 2014) and follow-up (May and June 2016) only. Further surveys are planned for summer and winter 2016 and 2017.

Centres were chosen based on the presence of a pool that conducted year-round swimming classes, and the presence of a sit-down café (rather than a kiosk). A total of 1,300 surveys were conducted at baseline, and 1,183 at follow-up.

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## Coding process

All beverage (and food) items (in the sales, survey and photo data) were classified as 'green', 'amber' or 'red' using the *'Healthy choices: food and drink classification guide'* [4]. This guide uses nutrition, ingredient and size criteria to determine classification of foods and beverages. An additional classification ('N/C' or 'not-classified') was introduced by YMCA Victoria, which was used for products that were not relevant for classification (i.e. protein drinks, which are considered a supplement product rather than food for classification purposes). These drinks were included in total dollar sales value analyses, but were excluded from all other analyses.

Ready-to-drink beverages were classified using the nutrition information panel (either visible in photos, or identified through information online), while drinks made on site were classified based on information provided by YMCA Victoria. Classifications were done by a dietitian, and 25% of items were cross-coded by a second dietitian. Discrepancies were resolved through discussion. Classifications were further cross-checked with in-depth menu assessments completed by YMCA Victoria.

**Table 3: Summary of data presented in this report**

	2013												2014												2015												2016					
DATA	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
PHOTO AUDITS																																										
SALES DATA	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
ATTENDANCE DATA	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
SURVEYS																																										

Policy finalised

Soft drink removed by

**Table 4: Summary of centres included in this evaluation, according to key characteristics and data collection activities**

	CENTRE CHARACTERISTICS			DATA COLLECTED			
	Pool	Kiosk or cafe	Socioeconomic position	Photo audits	Sales data	Attendance data	Surveys
CENTRE 1	Indoor	Sit-down café	High	Jun '14; Feb '16	Jan '13 – May '16	Jan '13 – May '16	
CENTRE 2	Indoor	Sit-down café	Low				Jun '14; Jun '16
CENTRE 3	Indoor	Sit-down café	High				Jun '14; Jan '15; Jun '16
CENTRE 4	Indoor	Sit-down cafe	High				Jun '14; Jun '16
CENTRE 5	Outdoor	Kiosk	High				
CENTRE 6	Outdoor	Kiosk	Low				
CENTRE 7	Indoor	Kiosk	Low				
CENTRE 8	Indoor	Kiosk	High				
CENTRE 9	N/A	Kiosk	Low				

[Type here]

## Analysis methods

### Photos

Analysis of the contents of the drinks refrigerators was done according to the number of drink slots that were occupied when the photographs were taken. The number of 'green', 'amber' and 'red' occupied drink slots were then used to determine the proportion of ready-to-drink on display by drink category, as recommended by the Healthy Choice Guidelines.

### Sales and attendance data

We analysed changes in drink sales between January 2013 and May 2016. For each centre we had monthly sales data, for all drinks overall, all cold drinks and all ready-to-drink drinks, as volume and dollar sales and overall and by traffic light classification. As each of the nine centres removed soft drinks progressively during 2015 we used December 2014–November 2015 as the policy implementation period and compared sales at May 2016 to what would have been expected based on sales trends prior to this implementation period. We used an interrupted time series method to analyse the average sales across the nine centres taking into account seasonal changes (for example, higher drink sales over the summer months) and average monthly attendance data across the nine centres.

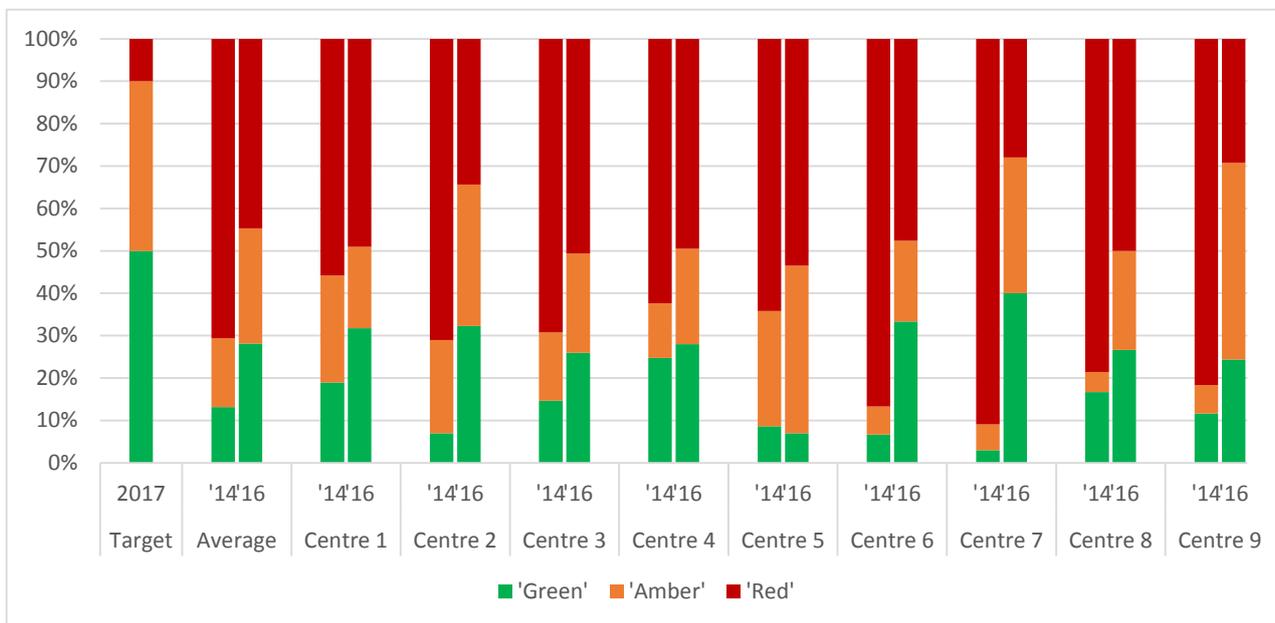
**Table 5: Summary of the analyses performed within this evaluation**

INDICATOR OF	UNIT OF ANALYSIS	UNIT OF MEASURE	LEVEL OF ANALYSIS
POLICY IMPLEMENTATION	All food and beverage on display; Ready-to-drink beverages only	Percentage of shelf space	'Red', 'amber', 'green'
POTENTIAL HEALTH IMPACT	Ready-to-drink beverages	Volume sold	'Red', 'amber', 'green'
POTENTIAL HEALTH IMPACT	Customer surveys	Item numbers; Number of people consuming items	'Red', 'amber', 'green'
POTENTIAL FINANCIAL IMPACT	Ready-to-drink beverages; All drinks	Dollar sales	Total

# Extent of Policy Implementation

## Overall policy implementation

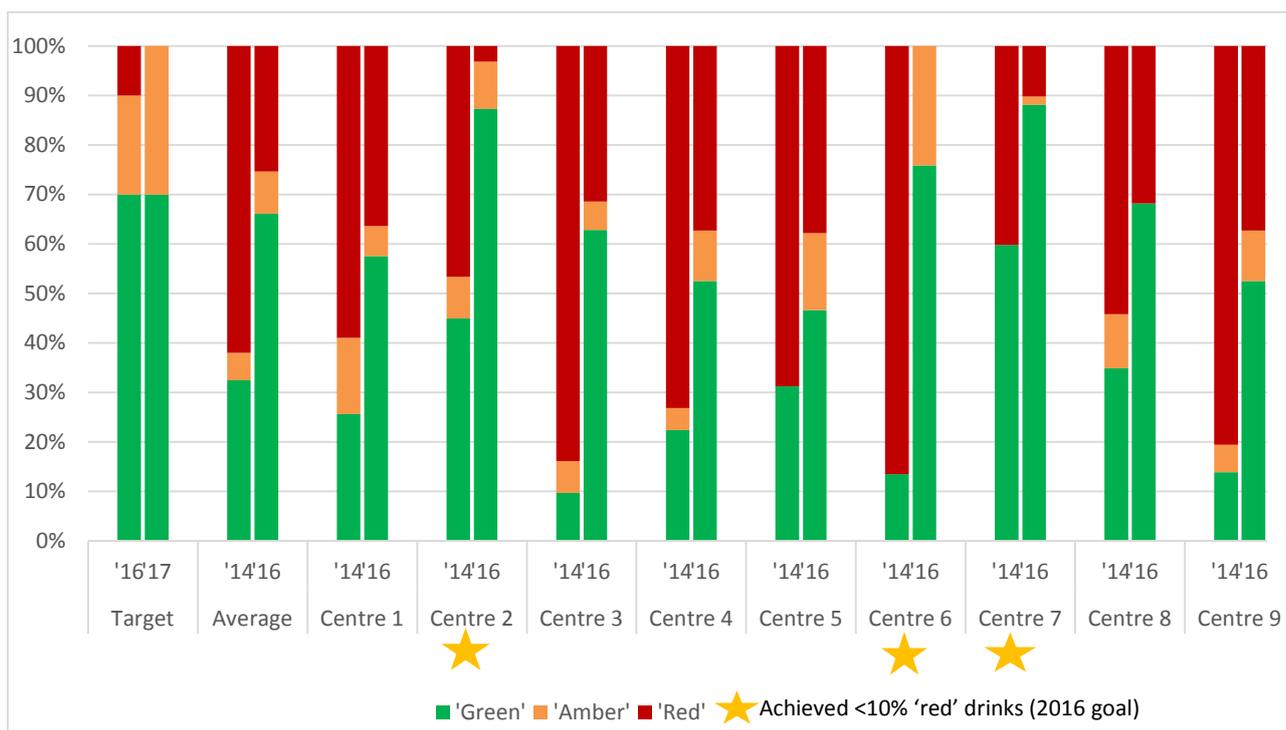
We found clear progress for all centres in terms of a reduction in the availability of 'red' food and drink and an increase in the availability of 'green' food and drink, with variation in implementation across the nine centres. Figure 1 shows the 2017 final policy target, along with the proportion of 'red', 'amber' and 'green' food and beverages available by centre (includes food and beverages) in June 2014 compared to June 2016. Across all nine centres the proportion of available 'red' items decreased from 71% to 45%, while the proportion of 'green' items increased from 13% to 28%. Most centres have a greater proportion of 'green' items and a lesser proportion of 'red' items in 2016 compared to 2014. However, similar to 2014, 'red' items dominate the proportion of items available across centres in 2016 with a few exceptions (Centre 7 and 9). An audit by YMCA Victoria of the changes across 38 YMCA centres reported similar changes.



**Figure 1: Change in food and beverage availability 2014 to 2016**

## Removal of soft drinks

All centres assessed in this report had achieved the campaign goal of removing all soft drinks from display, when assessed in February 2016. In addition to centres being soft drink free, they had all also included more healthy choices in their drink fridges. Figure 2 shows the range of 'green', 'amber' and 'red' ready-to-drink beverages in the fridge display in 2014 and 2016 across the centres. There was a large decrease in the availability of 'red' drinks, as well as a moderate increase in 'green' drinks, and a small increase in 'amber' drink availability. Across all nine centres the proportion of available 'red' drinks decreased from 62% to 25%, while the proportion of 'green' drinks increased from 32% to 66%. Furthermore, three centres had met the end of 2016 policy target of 10% fridge space allocated to 'red' drinks, with another three centres close to reaching 70% 'green' beverage display goal.



**Figure 2: Change in the display of ready-to-drink beverages 2014 to 2016**

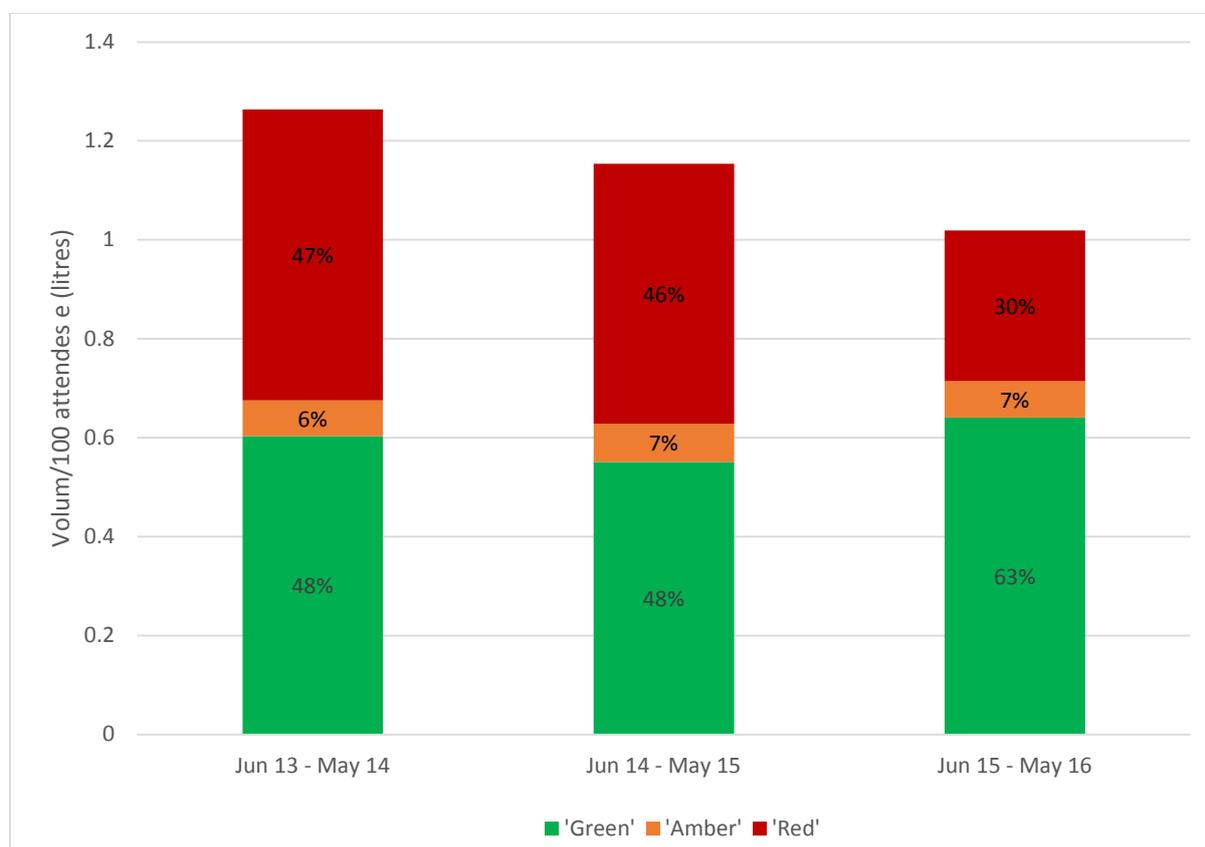
Fridge drink availability according to socioeconomic position of centre

While all centres achieved their goal of removing soft drink, there were varying degrees of removal of the remaining 'red' drinks (all sugar-sweetened beverages including sports drinks) and inclusion of more 'green' options. We found good progress in implementation across all centres independent of socioeconomic position. The three centres that had achieved the 2016 goal were all from low or middle socioeconomic position suburbs. Only centres that had aimed to remove soft drink by the summer of 2015/16 were included in this report, so it will be important to continue to evaluate implementation across centres with different socioeconomic position.

## Findings: Potential Health Impact

### Volume of ready-to drink beverages sold

The analysis of change in volume of ready-to-drink beverages purchased showed a clear decrease in the volume of 'red' ready-to-drink beverages purchased in the most recent year, where volume sales of 'green' drinks clearly outstrip those of 'red'. Between June 2013-May 2014 just under half of all ready-to-drink beverages sold were 'red' and just under half were 'green'. Between June 2015 and May 2016 the proportion that were 'red' had decreased to around 30% of all ready-to-drink volume sold, with an increase in the proportion of 'green' sold to around 63%. The small volume sales of 'amber' appear to be stable during this three year period. Figure 3 shows the change in the volume of ready-to-drink beverages purchased, according to the health-rating category between June 2013 and May 2016. In addition to the changes in 'red' and 'green' proportion seen after the Soft Drink-Free Summer campaign (summer of 2015/16) there appears to be a small decrease in overall sales of ready-to-drink beverages over time, independent of the Soft Drink-Free Summer campaign. These changes are accounted for in the analyses quantifying the degree of change below.

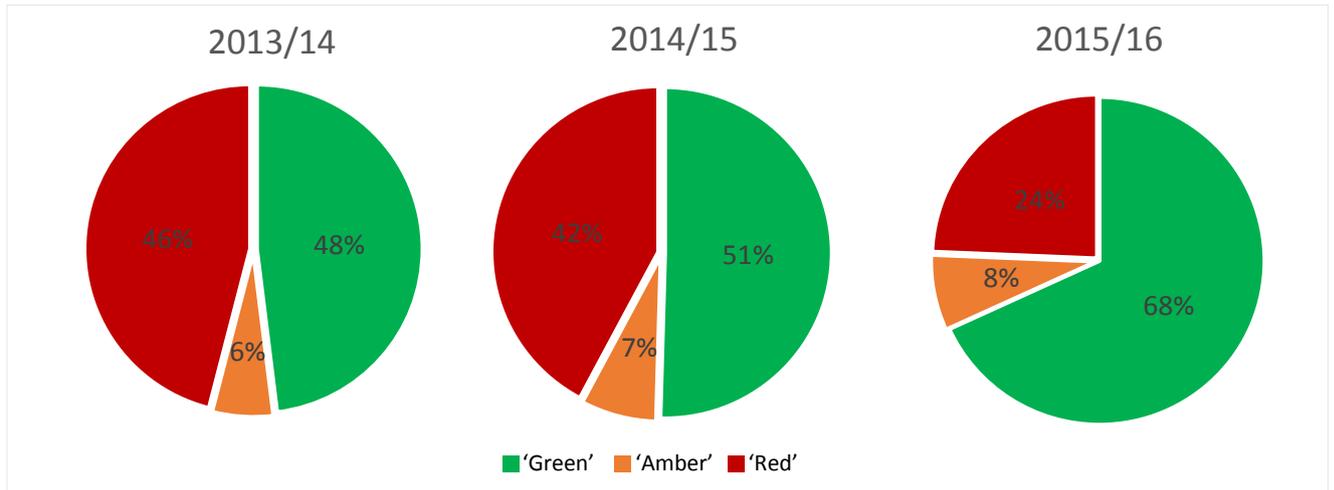


**Figure 3: Volume of ready-to-drink beverage purchases per 100 attendees**

We quantified the predicted change in volume sales of ready-to-drink beverages after the Soft Drink Free summer campaign, comparing sales in May 2016 to what would have been expected if no policy change had been implemented (n=9). There was a significant large decline in 'red' ready-to-drink volume sales of 55%, no significant change in 'amber' ready-to-drink volume sales, and an increase in the volume sales of 'green' drinks by 24%.

The reduction in 'red' ready-to-drink volume sales equates to 757 litres less of 'red' drinks sold over the nine centres per month. This is the equivalent of 2,000 fewer cans of soft drink consumed on a monthly basis.

Examining the change exclusively over the summer months (Figure 4), there is a clear decrease in the proportion of 'red' ready-to-drink beverages purchased, with a corresponding increase in proportion of 'green' cold drinks purchased. 'Amber' drinks did not appear to change as a proportion of beverages purchased.

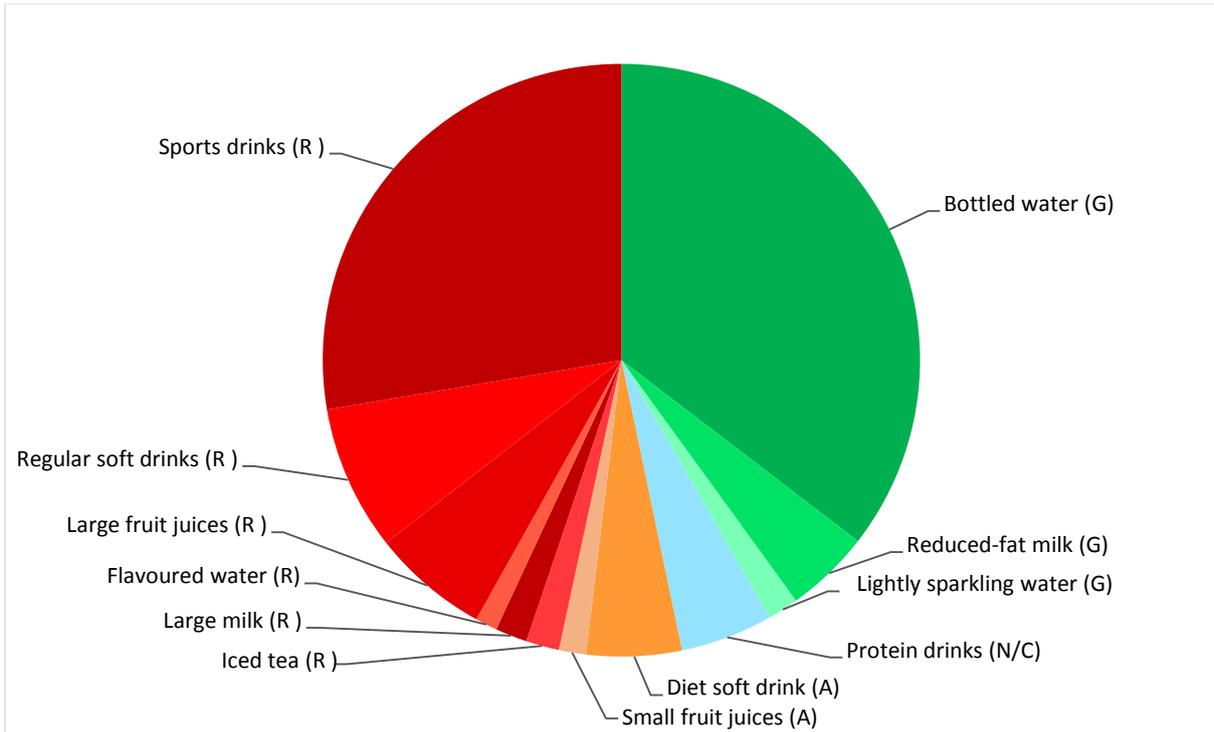


**Figure 4: Change in proportion of ready-to-drink beverage volume sold over the summer period (December, January, February)**

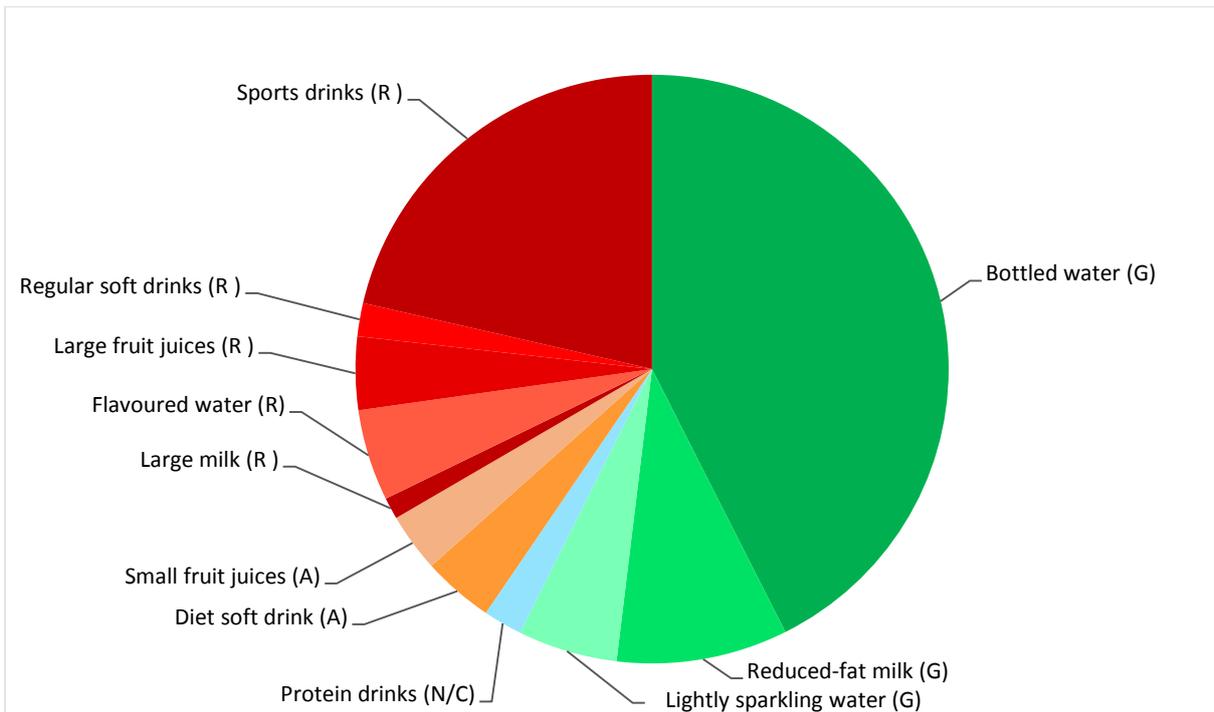
### Changes in ready-to-drink beverage sales by product type

We analysed the changes in the top-selling ready-to-drink beverages between the summer of 2014/15 and the summer of 2015/16 according to dollar sales of specific product categories. Regular soft drink sales dropped from 9% to 1% of overall ready-to-drink beverage sales between the two summer periods. Bottled water was the top-selling ready-to-drink beverage in both summer periods, accounting for more than one-third of overall ready-to-drink beverage sales. Following the removal of soft drinks, 'green' drinks clearly dominate sales. Although all regular soft drinks were to be removed by December 2015, some centres still had some stock remaining which was being sold off, which accounts for a small amount of soft drink sales during the 'Soft Drink Free Summer' period.

These data are presented in Figure 5 and Figure 6, demonstrating the dollar sales of ready-to-drink beverages, by category and product type, over the summer periods of 2014/15 and 2015/16, respectively. The classification of each category is denoted by the letter beside the category name; 'G' ('green'), 'A' ('amber'), 'R' ('red'), or 'N/C' (not classified).



**Figure 5: Distribution of ready-to-drink beverage dollar sales summer 2014/15. Colours represent the Healthy Choices 'red', 'amber', 'green' and 'unclassified' classifications.**



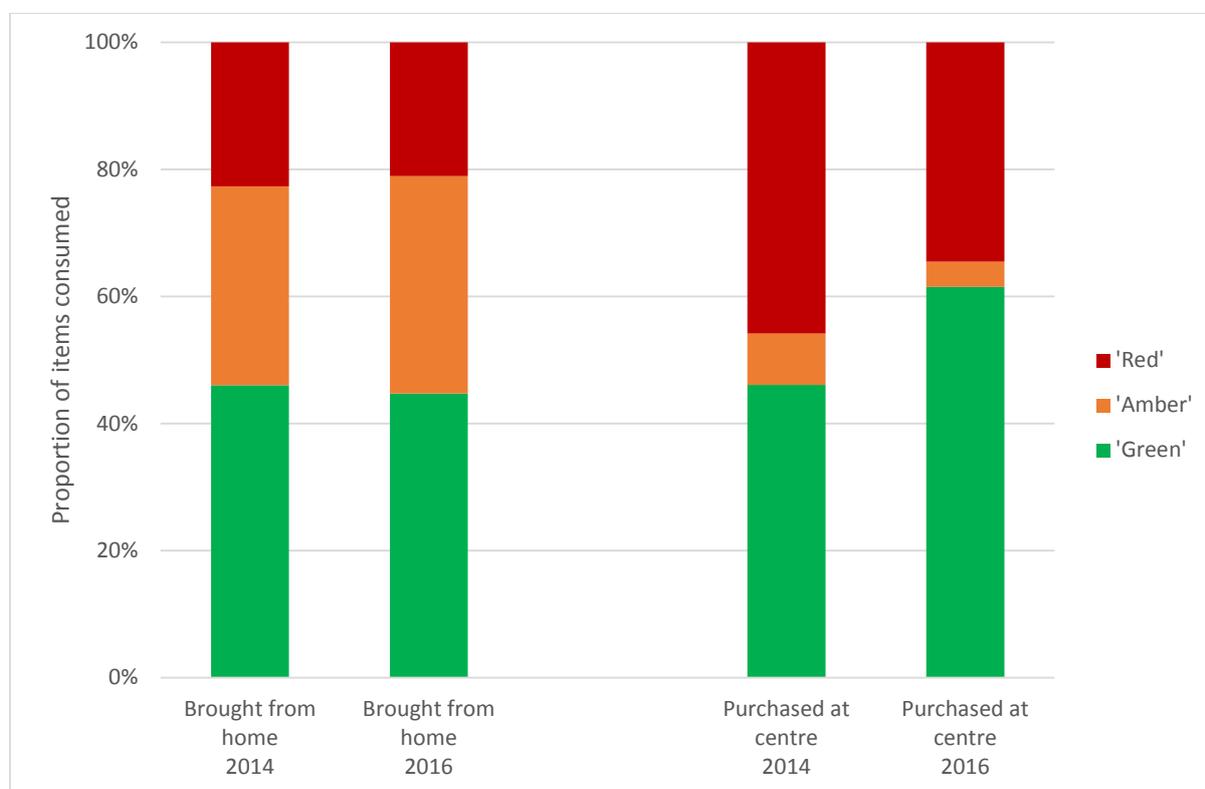
**Figure 6: Distribution of ready-to-drink beverage dollar sales summer 2015/16. Colours represent the Healthy Choices 'red', 'amber', 'green' and 'unclassified' classifications.**

We also analysed the top-selling 'green' and 'amber' drinks during summer 2015/16 (after the Soft Drink Free Summer campaign) across all the nine centres. Those products with the greatest dollar sales were identified as:

1. Bottled water– 'green'
2. Reduced-fat milk varieties – 'green'
3. Bottled lightly sparkling water – 'green'
4. Diet soft drink – 'amber'
5. Bottled lightly sparkling water flavoured with natural fruit essences – 'green'

## Customer consumption of food and drink at the YMCA centre

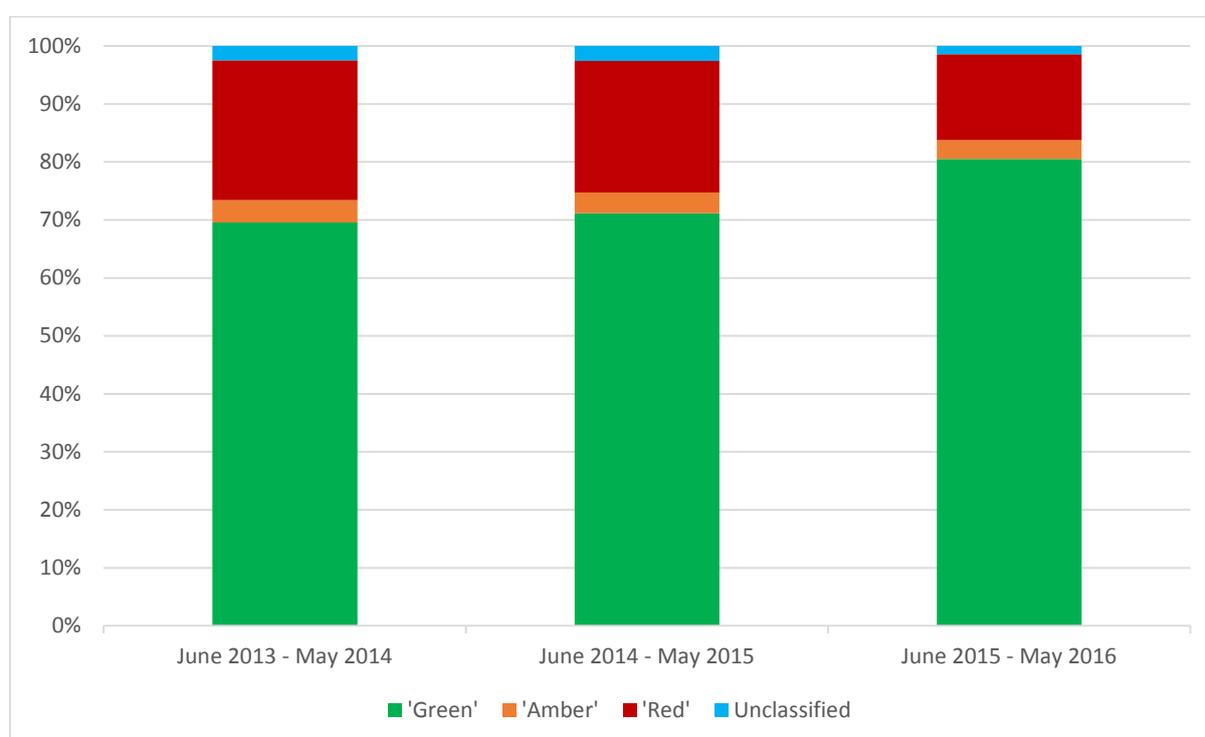
We conducted customer surveys at three YMCA Victoria centres to explore the range of food and drink consumed at the centres, and to analyse what proportion of this was purchased from the centre itself and what proportion was brought from outside the centre. For this evaluation we analysed changes in the food and drink consumed at the centre between the winter of 2014 and the winter of 2016. We analysed changes in the proportion of food and drink across the three health categories according to food and drink bought at the centre versus brought from outside the centre to identify whether the Healthy Food and Drink Policy may have led to compensation, whereby customers may bring more unhealthy food and drink from home if it is no longer available at the YMCA centres. We found that while there has been little change occurring in the proportion of people bringing 'red', 'amber' or 'green' items from home, there has been a moderate decrease in 'red' food and drink purchased at the centre, and an increase in 'green' item purchases (Figure 7). While limited to three centres, these results support the idea that customers have not responded to the healthier food provision by bringing their own 'red' food and drinks from home.



**Figure 7: Food and beverages consumed at the centre according to whether they were purchased at the centre or brought to the YMCA centre from home**

## Findings: Potential Financial impact

We quantified the predicted change in dollar sales of ready-to-drink beverages after the Soft Drink Free summer campaign, comparing sales in May 2016 to what would have been expected if no policy change had been implemented. There was a 15% decrease in the dollar sales of ready-to-drink beverages associated with the Soft Drink Free Summer campaign, adjusted for attendance and season. Due to the number of beverages sold across the centres in addition to the ready-to-drink beverages we also analysed the effect of the Soft Drink Free Summer campaign on overall beverage sales, including all drinks prepared on site and hot drinks such as coffees. We found that while there was a clear decrease in the total beverage dollar sales for 'red' drinks, there was no change in overall beverage dollar sales (Figure 8). It is important to note that these analyses do not capture other potential costs or true profit margins from beverages.



**Figure 8: Proportion of overall beverage dollar sales according to Healthy Choices Guidelines classification over time**

## Discussion and Recommendations

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### Key findings

In this evaluation of nine YMCA Victoria centres we identified large changes in availability and purchase of the unhealthiest drink options after the introduction of the YMCA's Healthy Food and Drink Policy and their Soft Drink Free Summer campaign.

1. In June 2016, across the nine YMCA Victoria centres examined, the proportion of available food and beverages that were best choices ('green') increased from 13%, to 28%, with the proportion 'red' decreasing from 71% to 45%.
2. The impact of the Soft Drink Free Summer campaign was evident, with the proportion of available ready-to-drink beverages that were 'green' increasing from 32% to 66% and the proportion 'red' decreasing from 62% to 25% (comparing June 2014 to February 2016).
3. The YMCA's Soft Drink Free Summer campaign appeared to have its intended effect, with the volume of ready-to-drink 'red' beverages sold decreasing by 55% after the campaign was introduced, representing 2,000 cans less of soft drink consumed over the nine centres every month.
4. The YMCA's Soft Drink Free Summer campaign also led to an increase in the volume sales of 'green' ready-to-drink drinks by 24%.
5. The customer surveys found no evidence that customers are now bringing more of their own 'red' food and drink from home due to its lack of availability at the centres.
6. The YMCA's Soft Drink Free Summer campaign was associated with a small decrease in dollar sales for ready-to-drink beverages. However, there was no change in dollar sales of all beverages sold across the nine YMCA centres.

### The broader context

This evaluation of the YMCA Victoria's recent policy implementation demonstrates the potential for such policies to support healthier diets for the customers of aquatic and recreation centres. The combination of a broader policy framework with a specific summer campaign appears to have measurable benefits for customers. With the YMCA providing approximately 58,000 children's swimming lessons per week, and 17 million annual visits, a shift to healthier food and beverage offerings within these centres has the potential to positively influence the nutrition of their communities. In addition, the experience of YMCA Victoria has the potential to positively influence the policy and practice of aquatic and recreation centres more broadly, both in Australia and internationally.

With increasing consideration of the community food retailer as a potential lever to improve population diets the actions and evaluation of YMCA Victoria are timely. There are few evaluations of the health and financial impact of the removal of unhealthy drink options from sale.

It is important to recognise that while this evaluation uses customer sales as an indicator of both the potential health impacts and the potential financial impacts of the removal of soft drinks they remain indicators. The overall impact of the policy on health depends on the role of soft drink purchases at aquatic and recreation centres in the individual's overall diet, and whether other dietary behaviours

change in response to the policy. These changes may limit the effect of the policy, for example through bringing soft drink into the centre from outside, or may enhance the effect of the policy, for example through driving broader social change to healthier drink provision, purchase and consumption. While it is not possible to conclude on these broader dietary impacts from the current evaluation, our customer surveys did not find any evidence of customers bringing more unhealthy food or drink into the centre to compensate. However, these customer surveys were limited to three centres and the winter months so it will be important to continue them in future evaluation waves.

It is also important to recognise the limits to the generalisability of the current evaluation. The YMCA Victoria centres selected for evaluation were all from metropolitan Melbourne and almost all have year round swimming lessons. Many were also the early adopters of the YMCA's Healthy Food and Beverage Policy, with all having committed to remove soft drinks by December 2015 (with small amount of left over soft drink being sold over the following months). So while the overall changes in sales indicate the potential success of this policy and campaign, they may not reflect the changes across all YMCA Victoria centres. It will be important to continue to evaluate these outcomes across a wide range of centres. In addition, it will be important to explore how these findings relate to other food retailers in community settings. YMCA Victoria has demonstrated a strong commitment over a number of years to the creation of a healthy nutrition environment. They may differ from some food retail outlets through their buying power, their in-house commitment to health promotion staff and resources, the presence of water drinking fountains at all centres, and the potential for coordination across sites. However, they still represent variability across food retail outlets due to differences across YMCA centres in the size of each individual YMCA centre and the varying degrees of cooking and preparation facilities.

Finally, it is important to understand that the evaluation, while focussing primarily on the Soft Drink Free Summer campaign, includes changes that the centres have made as a response to the more general Healthy Food and Beverage Policy. Similarly, without explicit control centres we cannot attribute all the changes we identify solely to this combination of this policy and campaign. However, the strength of the interrupted time series analysis is to implicitly account for any gradual changes happening over time.

### Further work and recommendations

YMCA Victoria and their centres should be commended on their achievements and commitment to the 'Soft Drink Free Summer'. It is likely that centres will require ongoing support to meet their end of year goals to reduce 'red' drinks to 10% or less of fridge space, as well as towards the long-term goal of complete removal of sugar-sweetened beverages. Furthermore, three of the nine centres analysed here have already achieved part of the 2017 goal of providing 70% or more of fridge space with 'green' beverages, by February 2016. The variation we identified in the degree and rate of implementation of both the policy overall and the soft drink free initiative suggest that it is likely that centres will require ongoing support to meet their end of year goals to reduce 'red' drinks to 10% or less of fridge space, as well as towards the long-term goal of complete removal of sugar-sweetened beverages. While not examined in-depth in this report, it is likely that different centres require different food offerings, as they have different food outlet set-ups and different customers with varying preferences and budgets. It will be important to analyse differences across centres in future evaluations.

A campaign to remove the remaining 'red' sports drinks will be the focus of 2017– this has the potential further substantially reduce the consumption of unhealthy beverages within YMCA Victoria centres given that they made up 21% of ready-to-drink beverage sales during the most recent summer period (Figure 6). This is alongside the continuous improvements being made in the healthiness of the food on offer at YMCA Victoria centres. It will be essential to conduct long-term evaluations of these changes, in order to continuously build on lessons learnt, as well as providing feedback iteratively to YMCA Victoria and other aquatic and recreation centres considering similar policies. The long term evaluation planned by this evaluation team will continue to analyse these changes using similar methodology to that which is described in this report.

Long term and detailed evaluation will be particularly important when evaluating the impact of changes to food items. Ongoing research evaluating a range of healthy food retail initiatives conducted by these authors has identified difficulties in sourcing healthier packaged food items, when compared to healthier drinks [5]. In the current evaluation, despite a large reduction in sales of 'red' ready-to-drink beverages, overall ready-to-drink sales decreased only marginally due to the concurrent increase in 'green' beverages purchased. At the level of the centre the finding that there was no overall change in dollar sales income from beverages indicates the potential of 'green' drinks prepared on site to provide acceptable alternatives for customers. Further investigation into customer's preferred 'green' beverage options would be useful.

We identified a number of 'green' and 'amber' substitutes that may be acceptable to YMCA Victoria customers based on their current sales, including different bottled water sizes, small flavoured and unflavoured milks, diet soft drink, and bottled lightly sparkling water. To meet their end of 2016 goal of less than 10% of fridge space filled with 'red' drinks, YMCA Victoria will need to continue to work with centres to reduce the amount of sports drinks available. In addition to continuing to identify healthier options to sugar-sweetened beverages to offer consumers some variety, similar analysis of healthier food 'swaps' will be critical.

## Conclusion

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As a result of the YMCA's Healthy Food and Beverage Policy and its recent Soft Drink Free Summer campaign, YMCA Victoria centres have made substantial reductions in the availability of 'red' food and beverages, and should be commended for the initiative and leadership in creating healthy food environments for adults and children. The pro-active, and widely communicated nature of their policy and aims has no doubt had an effect on numerous councils, health services, and other aquatic and recreation organisations following suit. We recommend further dissemination of their policy, processes and findings to support others to initiate similar changes. It is clear that central support and availability of acceptable 'amber' and 'green' items are critical for the success of this policy.

All YMCA Victoria centres analysed in this report were successful in their aims of removing all 'soft drink' and increasing the availability of more 'green' and 'amber' options, demonstrating that a substantial change to the beverage product offerings is achievable to increase the healthiness of beverages available. A large reduction in the unhealthiest drink choices was seen – 2,000 fewer cans of soft drink consumed per month, across the nine centres. Furthermore, the lack of change in the dollar sales received for all beverages implies that customers are willing to switch to healthier options, potentially without a negative financial impact on the organisation itself.

YMCA Victoria should be commended for the leadership and enthusiasm they have demonstrated through the implementation of their Healthy Food and Beverage Policy. We recommend broad consideration of these findings by other stakeholders alongside the continuous building of this evidence base, capitalising on the increasing implementation of healthy food policies across Victoria.

## Acknowledgments

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### Funding

AP is supported by an NHMRC Career Development Fellowship and Deakin University. TBR is supported by an Australian Postgraduate Award and a Monash Faculty Postgraduate Excellence Award. This project was supported in part by VicHealth.

### Participants

We would like to extend our thanks to YMCA customers that participated in the surveys, Ari Kurzeme, Alethea Jerebine, Stephen Bendle and Stella Cifone from YMCA Victoria for all their work in gathering and sharing information with us, and all centre managers and staff who aided us in collecting data.

### Research group

We would like to acknowledge Kathryn Backholer, Alexandra Chung, Oliver Huse, Miranda Blake, Rory Wolfe and Chris Stevenson for their intellectual contribution to the results of this report, and to thank the Obesity and Population Health Unit at Deakin University for their feedback and support.

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