

Adopting and implementing nutrition guidelines in recreational facilities: tensions between public health and corporate profitability

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Abstract

Objective: Little is known about how public entities can partner with industry to achieve public health goals. We investigated industry's perspective of factors that influenced their adoption and implementation of voluntary, government-issued nutrition guidelines (Alberta Nutrition Guidelines for Children and Youth, ANGCY) in recreational facilities.

Design: In-depth semi-structured interviews were conducted. Data were analysed using directed content analysis.

Setting: Food services in recreational facilities.

Subjects: Seven managers from industry participated; five from companies that had adopted and implemented the ANGCY (adopters) in recreational facilities and two from companies that had not (non-adopters).

Results: Industry views nutrition guidelines through the lens of profitability. Non-adopters were unwilling to implement the ANGCY for fear of sacrificing short-term profitability, whereas adopters adhered to them in an attempt to position themselves for long-term profitability. Adopters faced barriers including few resources, no training, complex guidelines, low availability of and demand for ANGCY-compliant products, competitive pressures and substantial declines in revenue. Managers believed widespread voluntary adoption of the ANGCY was unlikely without government incentives and/or a mandate, as the environmental context for voluntary action was poor. All managers supported government-mandated implementation of the ANGCY to level the playing field upon which companies compete.

Conclusions: Public–private partnerships in recreational facilities can embrace public health goals in the short term, provided industry perceives potential for long-term financial gain. Widespread uptake of voluntary nutrition guidelines in this setting is unlikely, however, as market mechanisms do not encourage industry to sell and promote healthier options. Government legislation may therefore be warranted.

Keywords
Nutrition guidelines
Childhood obesity
Public health
Corporate profitability
Recreational facilities

Recreational facilities are an important venue in which youth can engage in physical activities⁽¹⁾. Many of these facilities also serve food through vending machines and/or concessions (Alberta Recreation and Parks Association, personal communication, 12 January 2010). In Canada, food services within publicly funded recreational facilities are often delivered in partnership with the private sector. Recreational facilities provide the space and have input into food service activities through negotiated contracts, while the private sector delivers food services and returns a portion of revenues to facilities as commissions and/or leasing fees. Current partnerships exist primarily for the

purpose of generating profit and, as such, the majority of items available for sale within recreational facilities tend to be highly profitable, energy-dense, nutrient-poor items^(2–7). Ready availability of unhealthy foods in recreational facilities and other sports venues may partially explain why a recent systematic review found that youth involved in sport consume more fast food, sugar-sweetened beverages and energy, and have a similar weight status as non-participants⁽⁸⁾. Recommendations that children spend more time in recreational facilities to prevent obesity^(9–11) may therefore be counterproductive if children consume snacks and meals in this setting.

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To increase children's access to healthy foods and beverages within recreational facilities, the Alberta government released the Alberta Nutrition Guidelines for Children and Youth (ANGCY) in 2008. These voluntary guidelines categorize food and beverages according to their nutrient content as 'choose most often' (consume daily), 'choose sometimes' (≤ 3 servings/week) and 'choose least often' (≤ 1 serving/week), and recommend that healthier options be available at all times and fresh, convenient, visible and attractively packaged and priced⁽¹²⁾. Evidence suggests, however, that few recreational facilities are using them⁽⁴⁾.

Recently, we described factors underlying the low uptake of the ANGCY from the perspective of recreational facility managers⁽⁷⁾. Greater clarity regarding the barriers faced by industry in implementing voluntary nutrition guidelines is also essential, as little is known about how public entities can partner with industry to achieve public health goals. We investigated the food service industry's perspective of factors that influenced their adoption and implementation of the ANGCY in recreational facilities to inform the development of coherent, feasible obesity prevention policies that balance public health and corporate interests.

Methods

Study design

Theoretical framework

Greenhalgh *et al.*'s⁽¹³⁾ diffusion of innovations framework models the transfer of complex process-based innovations in organizations (Table 1). The model provided an ideal theoretical platform from which to investigate the factors influencing uptake of the ANGCY within the food industry.

Ethical approval

The study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects were approved by the Human Research Ethics Board at the University of Alberta. Written informed consent was obtained from all participants.

Data generation

Data generation and analysis were concurrent to permit exploration of emerging themes and adjustment of data-gathering instruments and procedures. We define 'adoption' as a one-time mental decision to follow the ANGCY, whereas 'implementation' refers to multiple acts that must be repeated over time to put the decision into practice⁽¹⁴⁾. Consistent with diffusion of innovations terminology⁽¹⁴⁾, we refer to companies and managers in terms of their adoption status as 'adopters' and 'non-adopters'.

Participant selection

The present study occurred within the context of a multiple case study of factors influencing adoption and implementation of the ANGCY in publicly funded recreational facilities⁽⁷⁾, defined as buildings where community members can engage in sporting activities. Cases for the multiple case study were purposefully selected and included a full adopter (one facility that had adopted the ANGCY in its concession and vending machines), a semi-adopter (one facility that had adopted the ANGCY in its vending machines, but not in its concessions) and a non-adopter of the ANGCY (two facilities that were managed by a single manager and that had not adopted the ANGCY in their vending machines or concessions). Each case included multiple food service organizations and managers. All six privately operated, for-profit food service companies present within the three cases agreed to participate.

Table 1 Major components of Greenhalgh *et al.*'s conceptual model for considering the determinants of diffusion, dissemination and implementation of innovations in organizations

Framework components	Description	Examples
Attributes of the innovation	Perceived attributes of the innovation explain much of the variance in adoption rates	Relative advantage, complexity, observability
Organizational antecedents for innovation	General features of the organization that make it more or less innovative	Receptive context for change, absorptive capacity
Organizational readiness for innovation	Readiness and/or willingness of the organization to adopt a particular innovation	Power balances, tension for change, innovation-system fit
Adopters and the adoption process	Influential aspects of adopters and of adoption as a process	Meaning of the innovation to potential adopters
Processes of assimilation	Organizations may move back and forth between initiation, development and implementation of the innovation	Complex, non-linear processes
Implementation process	Specific steps involved in putting a decision into practice	Effective management, feedback and monitoring
Communication and influence	Means of spreading the innovation	Champions, diffusion, dissemination
Outer context	External influences on the organization	Socio-political climate, environmental stability
Linkage between developers and users	Connections that facilitate movement of the innovation from developers to users	Effective knowledge transfer from developers to users

Source: Based on a systematic review of empirical research studies⁽¹³⁾.

Interviews

The theoretical framework guided development of a semi-structured interview guide which was pilot-tested with two managers and subsequently revised. Seven managers were interviewed, including four from companies that had adopted and implemented the ANGCY (adopters, two from the same company) and two from companies that had not (non-adopters). The seventh manager was from a company that had adopted and implemented the ANGCY in schools and was willing to, but had not yet adopted them in its recreational facility-based operations. Collectively, these managers represented all of the known food service organizations that had adopted and implemented the ANGCY within Alberta's recreational facilities. We were informed that there may have been another industry adopter; however, we were unable to confirm this information.

The same investigator interviewed each manager for 45–120 min, in person, on the company's premises ($n = 5$) or by telephone ($n = 2$). The investigator was knowledgeable of the context, as she performed the in-depth case studies of which the present study was a part. Informants were reminded to comment from the perspective of the organization. General questions were initially asked to open up each area of inquiry, followed by targeted probes to query the specific influence of factors within the theoretical framework (see Supplementary Materials). Interviews were digitally recorded and transcribed verbatim.

Data analysis

Interview data were analysed according to principles of directed content analysis⁽¹⁵⁾. Using this approach, the theoretical framework guided development of an initial coding and categorizing scheme and operational definitions for the codes⁽¹⁵⁾. Another member of the research team inspected the coding scheme to ensure congruence with the elements of the theoretical framework. A single investigator applied the identical coding and categorizing scheme to all study data using techniques of memoing, constant comparison and questions. NVivo software version 9 was used to organize the data during analysis. An audit trail documented the sequential steps that were followed and the reasoning behind analytical decisions.

Rigour

Data trustworthiness was ensured by interviewing all known adopters of the ANGCY, interviewing both adopters and non-adopters, pre-testing of the interview guide, application of a robust theoretical framework during data generation, analysis and interpretation, peer checking of the coding scheme, having all data coded by the same person, collecting and analysing data concurrently, maintaining an audit trail, data triangulation and prolonged engagement in the setting.

Results

Context

Table 2 presents selected characteristics of companies included in the study.

Factors that influenced adoption and implementation of the Alberta Nutrition Guidelines for Children and Youth

Themes are presented within six domains of the theoretical framework (Table 3), followed by representative quotes reflecting dominant participant responses.

1. Attributes of the guidelines

- *Complexity: 'I can't just ... read labels all day'*

Non-adopters did not perceive the ANGCY to be complex. By contrast, as those who had actually had to implement them, adopters expressed frustration with the complexity of the ANGCY's food rating system. It was difficult and time-consuming to find and source foods that met the ANGCY definition of 'choose most often', especially those that would also appeal to consumers: 'I just wish it was cut and dry and tell us – tell us what products we can put in it, you know? But right now I've got to go read every package and try and match it up. And I've got other things to do, you know? I can't just sit there and read labels all day... If they told me what I could put in, then it would be easier'. Companies sought the expertise of registered dietitians to assist them; however, dietitians too found aspects of the ANGCY challenging to work with.

- *Observability: 'Sales dropped 50%'*

Adopters experienced highly visible negative financial outcomes following ANGCY implementation, including reduced revenues, which for two adopters led to downsizing and staff layoffs (Table 2). These visible negative consequences discouraged further implementation of the ANGCY, although they did not cause adopters to rescind their original adoption decision. Managers indicated that they had not seen any positive outcomes from ANGCY implementation.

- *Augmentation: '[We have a dietitian who determines] how ... to adapt these recipes to have the nutrition work out'*

The government did not provide training and therefore potential adopters faced the barrier of having to determine how to implement the ANGCY on their own. Large franchises had registered dietitians working for them who could undertake this work; however, smaller organizations did not.

- *Compatibility: 'I'll be quite honest, the bag tastes better than the [baked] chips do'*

One of the most important barriers to use of the ANGCY was that ANGCY standards were not compatible with products available in the marketplace, with consumer

Table 2 Selected characteristics of participating food service organizations

Company type	Concession	Concession	Concession	Vending machine	Vending machine	Vending machine
Manager(s) interviewed	1. District manager 2. Unit manager	Nutrition consultant	Owner and manager	Owner and manager	Vending supervisor	Vending supervisor
ANGCY adoption status in recreational facilities	Adopter	Non-adopter but willing to adopt	Non-adopter	Adopter	Adopter	Non-adopter
Scale of operations	International franchise	International franchise	Single site	Provincial	Municipal	Municipal
Brand image	Popular for its fries and poutine but also has a proprietary nutrition programme	Well-established healthy brand image	Popular for its fast-food style menu	Known for its healthier snack food and beverage items	Popular for its traditional snack food and beverage items	Popular for its traditional snack food and beverage items
Contractual obligations	Contractually obligated to implement the ANGCY	None	None	None	Contractually obligated to implement the ANGCY	None
Availability of healthy food items*	16 %	24 %	8 %	4 %§	2 %	0 %
Availability of healthy beverages*	16 %	20 %	15 %	26 %	31 %	13 %
Perceived sales of healthier compared with less healthy items	'Whether we like it or not they don't want cucumbers with light organic dressing ... What sells is fries and poutine'	'I would say the majority [of the menu] is healthy'	'French fries is what I sell the most'	'I can't give a granola bar away ... I'll dust them off every 2 weeks. The regular chips ... [and] the chocolate bars ... sell'	'But no one buys [the healthier products], right? If they go to a machine and there's a choice between a [granola bar] and a [chocolate bar], they're going to take the [chocolate bar]'	'There's nobody in this business can make money [selling healthy foods] ... If you're offering the choices they're always going to go for the unhealthy choice'
Reported decline in revenue post-ANGCY implementation†	↓17 %	N/A	N/A	↓50 %	↓20 %	N/A
Perceived impact of the ANGCY on profitability‡	'It's devastating ... Horrible, our sales have been reduced'	N/A	N/A	'I had twenty-four staff and four partners. There's one partner and eleven staff left'	'It's tough on business .. We lost a full position so we had to fire someone'	N/A

ANGCY, Alberta Nutrition Guidelines for Children and Youth; N/A, not applicable.

*Represents availability of items that fit ANGCY criteria for 'choose most often'⁽¹²⁾ in the recreational facility that participated in the multiple case study.

†Although food vendors maintained that these reductions were primarily due to the ANGCY, it was not possible to verify this claim. Other possible explanations include the economic recession that was ongoing during the time of ANGCY implementation and reduced facility usage. Two concessions that had not adopted the ANGCY reported that their revenues declined by 5 % and 9 %, respectively, over the same time frame⁽⁷⁾ and their managers attributed these declines to reduced facility usage.

‡These comments reflect manager's perspectives of the combined outcomes of ANGCY implementation in recreational facilities and schools.

§This company had a much higher proportion of 'choose sometimes' food items compared with others, at 77 % of items. The proportion of 'choose sometimes' items in other companies did not exceed 24 %.

Table 3 Enabling and constraining factors to adopting and implementing the ANGCY by private industry in recreational facilities

Enabling factors	Theoretical domain*	Constraining factors
Relative advantage: Potential for long-term financial gain, financial advantage for one franchise with a successful healthy brand image	Attributes of the ANGCY	Complexity: Food rating system complex to use Observability: Highly visible negative outcomes, no visible positive outcomes Augmentation: No training provided Compatibility: ANGCY not compatible with product availability, consumer taste preferences or the prices consumers were willing to pay Relative advantage: Healthy items perceived as unprofitable
Meaning of the ANGCY: Managers personally supported healthy eating	Adopters and the adoption process	
Absorptive capacity for new knowledge: Previous experience implementing the ANGCY in schools	Organizational antecedents for the ANGCY Linkage	Technical capacity: High cost of refrigerated vending machines Centralization: lack of a single, national nutrition standard Design stage: Perception that the industry perspective was not adequately considered Implementation stage: Linkage agents not always familiar with industry concerns
Power balances: Adoption requests from recreational facility managers	Organizational readiness for the ANGCY	Power balances: Low market demand for healthier items Assessment of implications: Expectation of negative outcomes
Interorganizational norm-setting: Willingness to contravene industry norms to remain on the leading edge	Outer context	Socio-political context: Personal responsibility ethic, deflection of responsibility onto other sectors Competitive environment: Patrons could easily purchase unhealthy items elsewhere Interorganizational norm-setting: Fear of profit loss led to conformity with industry norms Incentives and mandates: ANGCY adoption was not mandatory, no financial incentives available for adopters

ANGCY, Alberta Nutrition Guidelines for Children and Youth.
*Based on Greenhalgh *et al.*'s diffusion of innovations framework⁽¹³⁾.

taste preferences or with the prices consumers were willing to pay. First, managers could not locate many 'choose most often' food items suitable for sale within unrefrigerated vending machines, and ANGCY sodium standards were so low that it took one franchise several months to find a suitable lean deli meat for use in menu items: '...the biggest disconnect is, we've got the regulations, but no availability of those ingredients'. Of even greater concern, however, was that no matter how many new 'choose most often' products some adopters introduced, their sales remained low because these items did not meet consumer taste expectations.

● *Relative advantage: 'At the end of the day, I've got to make some money'*

Relative advantage is the degree to which managers expect that following the ANGCY will confer advantages over previous practices. If potential adopters do not perceive a relative advantage they will often not consider an innovation further⁽¹³⁾. Profitability was the bottom line for industry. It was not as important what customers purchased, be it healthy or unhealthy, only that they purchased something. High sales volumes and profit margins on unhealthy items made their sale particularly advantageous, and therefore these items constituted the majority of items offered by adopters and non-adopters alike. Non-adopters

therefore perceived no net advantages to adhering to the ANGCY: 'We won't even bid on a piece of business that wants [to use the ANGCY] because we can't make money. There's nobody in this business can make money with it'. Adopters similarly perceived the ANGCY would not benefit them financially in the short term, but nevertheless agreed to implement them because they believed there was potential for long-term gain through positioning themselves at the forefront of the growing market for healthier items. Thus, they tolerated short-term risk in anticipation of long-term gain. A clear relative advantage was apparent for only one company, for whom ANGCY adoption was consistent with its brand image as a provider of healthier options.

2. *Adopters and the adoption process*

● *Meaning of the ANGCY to managers: 'I would way sooner sell a healthier product than an unhealthy product, but I'm still a business guy right?'*

Adopters felt healthy eating was important and wanted to support it. These personal beliefs did not, however, provide a sufficiently compelling motive for adoption, as non-adopters expressed similar sentiments.

3. *Organizational antecedents for the guidelines*

● *Technical capacity: 'If you want 60% "choose most often" into a vending machine, I have to have a*

refrigerated vending machine. So now my cost doubles for the investment'

The high cost of refrigerated vending machines was a barrier to offering healthier options in vending machines. Technical capacity was, however, not perceived to be a barrier in concessions: 'I can't say equipment is an issue. Like I don't think anybody could use that excuse. Like really, is it hard to pump out more salad than fries? Probably not. It's probably easier, actually. You could pre-make the salad and just throw them into containers, right?'

- *Centralization: 'It would have been a lot easier to have Canada-wide [standards]'*

The lack of a single, national nutrition standard was an important barrier to implementation of the ANGCY for franchised operations, which had to simultaneously comply with several different provincial standards.

- *Absorptive capacity for new knowledge: 'Well this is what we do in schools ... we could try it here too'*

Uptake of the ANGCY in recreational facilities was facilitated by the knowledge, skills and experience that adopters had acquired through implementing the ANGCY in schools. By contrast, non-adopters either had no school-based operations or were not using the ANGCY within their school-based operations.

4. *Linkage: 'At the end of the day, someone high up [made the] decision'*

Linkage refers to the mechanisms for knowledge exchange between the Alberta government and recreational facilities. Some adopters were frustrated that the government seemed not to have considered industry's perspective when formulating the ANGCY. In addition, those hired to support implementation did not always have the familiarity with their issues to provide meaningful support.

5. *Organizational readiness for the guidelines*

- *Power balances: 'I've got to be able to sell items in that machine that [customers] actually want to buy'*

The products offered by industry reflected the fact that patrons, through market forces, held the balance of power within these organizations. Managers were clear: 'It's all based on demand. What people are eating and what people are buying is going to support what [is being sold]. It's basic economics'. Non-adopters acceded to market forces, selling the unhealthy items that patrons demanded. Adopters, by contrast, struggled against market forces, providing healthier options despite low demand because they were trying to adhere to the ANGCY.

Managers also considered recreational facility managers to be an important constituency. As such, all food vendors who were asked to adopt the ANGCY by recreational facility managers agreed to do so, and indicated feeling forced to consent to this request. By contrast, a specific adoption request was never made of non-adopters.

- *Assessment of implications: 'We used to pay for all the scoreboards... sports programmes, basketballs, everything was coming ... out of the sales of [unhealthy foods] so the kids could get exercise'*

Managers were united in their expectation of negative financial outcomes following ANGCY implementation; however, adopters felt that negative impacts would be short lived. Some managers acknowledged that small improvements in children's dietary behaviours might also be achieved from ANGCY implementation. Their overall health impact was expected to be neutral, however, because profits from the sale of unhealthy foods would no longer be available to finance activities and infrastructure within recreational facilities, thereby reducing children's opportunities to be physically active.

6. *Outer context*

- *Socio-political context: 'Educate, don't eliminate'*

Managers indicated that patrons expected to be free to choose to consume unhealthy foods within recreational facilities, as it was part of the culture of sport spectatorship and of wider social norms: 'People are wanting healthier choices. But that's the whole thing. They still want a choice. They still want the junk, you know?' Industry, in turn, expected to be free to provide the unhealthy items that customers demanded, believing that the market should dictate product availability and that parents and schools should teach children to make healthy choices. Thus, the personal responsibility ethic was strongly held and deterred ANGCY adoption.

Managers recognized that implementing the ANGCY in recreational facilities would not create a culture of health within society and that more comprehensive measures would be needed: 'The vending industry is such a small little niche that it's irrelevant in terms of the scope of the big picture ... it has to be a societal change ... They're not going to start eating healthy 'cause it's in the vending machine'. However, in calling for more comprehensive measures, managers also attempted to deflect responsibility onto other sectors, using this as an excuse for inaction, or only limited action, on their part.

- *Competitive environment: 'They are just going to go across the street'*

Managers felt very susceptible to competitive pressures and were concerned that the ANGCY targeted a small number of sectors. If they could not sell the items their customers demanded, then patrons would simply purchase unhealthy items elsewhere. One manager questioned: 'Should I ... just be the good guy and other [restaurants] are just allowed to flourish and make their sales? ... If they're not doing it, why should I?' The problem was particularly salient for one vending machine company that had implemented the ANGCY in a facility where the concessions had not.

- *Interorganizational norm-setting: 'If they're not doing it, why should I?'*

Adopters stood out as those who were willing to contravene industry norms to remain on the leading edge. These managers led the way by offering healthier options in sectors dominated by the sale of unhealthy food. Non-adopters, fearing loss of profits, preferred to conform to prevailing industry norms by offering primarily unhealthy items.

- *Incentives and mandates: 'It has to be mandated... It can't be voluntary. There's no way it'll work'*

Most managers agreed that government-mandated adherence to the ANGCY was the only feasible means of achieving widespread adoption in recreational facilities, as voluntary adoption was not in their financial interests. A financial subsidy to compensate for losses incurred by following them was also deemed essential by some. Ideally, managers felt adherence should be mandatory for the entire food service sector, or at minimum for those businesses located within close proximity to recreational facilities. Nevertheless, although managers thought government regulation would be effective, they were reluctant to fully support such measures due to interference with personal and corporate autonomy.

Discussion

Multisectoral partnerships are essential to effective health promotion practice because the determinants of health are so broad that no single sector can fully control them⁽¹⁶⁾. Health-promoting public-private partnerships are uncommon, however, as many perceive that the profit motive of the private sector is incompatible with public health goals. We interviewed managers from companies that had adopted the ANGCY to discern factors that compelled them to voluntarily adopt nutrition guidelines and compared this perspective with that of non-adopters. Findings revealed that public-private partnerships can embrace public health goals in the short term, provided that industry perceives a potential for long-term financial gain. Our results provided the basis for constructing a typology of adopters and non-adopters. Non-adopters maintained a strong focus on short-term profitability. They focused on immediate, visible outcomes, had a low tolerance for risk and preferred to conform to industry norms. They were somewhat pessimistic in their evaluation of innovations. Adopters, on the other hand, were innovators. They took a long-term view of profitability and were willing to take small risks, sacrificing short-term profitability to remain on the leading edge of market trends.

Adopting and implementing nutrition guidelines were not easy for adopters, however. They lacked resources and training, found the guidelines complex, had difficulty locating suitable products, had to act in opposition to market forces, felt squeezed by competitive pressures, and

experienced highly visible reductions in revenue that threatened the viability of their businesses. Despite these barriers, adopters continued to implement the ANGCY, primarily because they felt forced to do so by recreational facility managers, and also because they perceived that remaining ahead of healthy eating trends offered potential for long-term financial gain. Similar barriers and motivations for transitioning to healthier products in response to nutrition guidelines were expressed by representatives from British Columbia's food industry⁽¹⁷⁾.

Our findings that industry views nutrition guidelines through the lens of profitability can inform strategies to enlist industry's cooperation in public health initiatives. While moral responsibility and improving community health may provide sufficient motivation for the public sector to engage in health promotion initiatives, these rationales are less compelling for industry, which exists primarily to generate profit⁽¹⁸⁾. Managers in our study failed to recognize, however, that escalating rates of chronic disease are one of the greatest threats to the global economy^(19,20), to the health of workers and consumers and, by extension, to industry. The challenge to stimulate uptake of nutrition guidelines, then, is to make the business case that support for chronic disease prevention will improve corporate profitability through access to a healthy workforce and clientele, and a productive economic climate⁽²⁰⁾.

Governments have often relied on the food industry to act voluntarily in the public interest to avoid interfering with market mechanisms^(21,22). Voluntary industry guidelines have proved relatively ineffective in ensuring responsible practices by the food industry⁽²³⁻²⁶⁾, however, as adherence places companies at a competitive disadvantage if their competitors do not also comply. Our findings in Alberta's recreational facilities suggest a similar conclusion, as few companies appeared to be using the ANGCY in their recreational facility-based operations. Increased uptake in the future may be unlikely, as non-adopters perceived no net benefit to them of adopting the ANGCY and adopters could not point to any positive outcomes of adoption. Notably, however, one company stood out as one that, by virtue of its successful healthy brand image, actively sought to adhere to the ANGCY, proving that private industry can behave in ways that are both socially and fiscally responsible. Thus, voluntary, fruitful partnerships may be formed with companies that are committed to producing healthier food⁽²⁷⁾.

All managers maintained that widespread voluntary adoption of the ANGCY was unlikely without significant government incentives and/or a mandate, as the environmental context for voluntary action was poor. Although industry typically opposes government regulation⁽²⁸⁾, managers in our study favoured it. Requiring all food service companies, or at minimum all of those within close proximity to recreational facilities to adhere to the ANGCY was seen as a means to level the playing field upon which all companies compete. Legislation may

therefore be an important and not unwelcome tool in stimulating adherence to nutrition guidelines. This was also the case in the USA with federal menu labelling legislation, which industry supported because it provided a consistent national standard⁽²⁹⁾.

The absence of a single, national nutrition standard was an important barrier to compliance with nutrition guidelines for franchised companies and also likely contributed to the difficulty in locating 'choose most often' items, as there is little incentive for industry to reformulate products to fit standards that differ by province. Limited availability of healthier options was also a barrier to implementing nutrition guidelines in recreational facilities⁽¹⁷⁾ and schools⁽³⁰⁾ in other Canadian provinces. These findings underline the importance of collaboration between levels of government to develop national nutrition standards and of ensuring public-private linkages at all stages, from guideline development to implementation. Governments, however, are often criticized for acceding to the demands of powerful industry lobby groups^(31,32), and therefore a balance must be maintained between what is feasible for industry and what is in the public interest.

Limitations of the study

Although the sample size was small, we captured the perspectives of all of the companies known to have adopted the ANGCY at the time of the study. Furthermore, the same themes were repeated in all interviews. Congruence of our findings with the theoretical framework is important, as it can provide a basis for transferring findings to other cases. It was not possible to thoroughly examine all aspects of the theoretical framework within the limited time frame allocated to interviews with managers, and therefore other factors might also be important. Future studies regarding factors within the linkage and communication and information domains would help to elucidate the role of individuals other than the manager, and of communication networks, in adoption of nutrition guidelines. Although we asked managers to comment from an organizational perspective, it is possible that other managers may have provided a different perspective. The study was undertaken in the Canadian context; however we believe that findings will be transferable to other nations with similar neo-liberal, market-based ideologies. It is not clear whether findings are relevant to contexts outside the recreational facility setting; however informants indicated similar, and even more negative outcomes of adherence to nutrition guidelines in their school-based operations.

Conclusions

It is difficult to envision how effective solutions to obesity can be forged without active involvement from the

corporations that control and shape the food supply⁽³³⁾. The ANGCY represent an attempt to leverage existing collaborative relationships between the private and public sectors within recreational facilities in a new, health-promoting direction. By partnering with industry, recreational facilities gained access to their food-related expertise, to their financial and material resources, and to the capacity they had built to implement the ANGCY in schools. Widespread uptake of voluntary nutrition guidelines in this setting is unlikely, however, as market mechanisms do not encourage industry to sell and promote healthier options. Government legislation may therefore be warranted.

Financial profitability is desirable and essential within market-based economies. Nevertheless, providing easy access to foods of poor nutritional quality to preserve corporate profitability is inconsistent with society's ethical obligations to provide benefit and avoid harm to children⁽³⁴⁾. Hancock has proposed a new form of capitalism that places human capital at the centre and uses natural, social and economic capital in its service⁽³⁵⁾. This model provides a useful heuristic for balancing public and private concerns, and predicts that successful businesses will be those that cultivate all four forms of capital simultaneously because they realize their success is predicated upon the health and productivity of their employees and clients, the social resources within their communities and the sustainability of the environmental resources upon which they draw⁽³⁵⁾. It also reminds the public sector that the economic capital generated by industry constitutes the means by which society finances its human and social goals. Each sector must be mindful of the other's constraints, such that respectful, trusting relationships are developed and maintained.

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and interpreted the data and wrote the manuscript. K.D.R. designed the study, interpreted the data and edited the manuscript. L.J.M. obtained funding for the study, designed the study, interpreted the data and edited the manuscript. All authors read and approved the final manuscript.

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