

Monitoring foods and beverages provided and sold in public sector settings

Online Supporting Information

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DETAILS OF PREVIOUS MONITORING ACTIVITIES OF SCHOOL FOOD PROGRAMS

Europe

United Kingdom

England has had compulsory food-based standards since September 2006 and compulsory nutrient-based standards since September 2008 for primary schools and since September 2009 for secondary schools ¹. **Food-based standards** are specific to school meals and include recommendations on portion size, preparation, and service for various food categories (e.g. fruit and vegetables, and dairy). Food-based standards are also compulsory in Scotland, Wales and Northern Ireland. In England, the **nutrient-based standards** cover energy and thirteen nutrients ¹. Different nutrient-based standards are also compulsory in Scotland.

Compliance to the standards was evaluated in England by the School Food Trust, which has conducted three recent evaluations, including the Primary School Food Survey (2009) (n = 136 schools, 47% response rate) ², the Secondary School Food Survey (2011) (n = 80 schools) ³, and the National Survey of Vending in Secondary Schools in England (2010) (n = 62 schools) ⁴. For all surveys, a representative sample of schools was randomly selected.

From the primary school survey, the majority of schools met most of the **food-based standards** based on both planned provision (data provided from full menu cycles - three weeks) and actual provision (5-day direct observations of school lunches). However, actual provision of vegetables and fruit was less likely to comply compared with planned provision. In contrast, the secondary school survey showed that compliance based on actual provision (1-week direct observation of school lunches), varied widely between standards. For example, standards met most often were for salt and condiments (met by 91% of schools), confectionery (90%) and snacks (89%), while standards for fruit and vegetables were met least often (23%).

Regarding **nutrient-based standards**, most primary schools (86%) met between 7 and 10 out of the 14 nutrient and energy standards for the average school lunch, calculated based on actual provision observed in the dining room. Adherence to both the nutrient-based and food-based standards was more likely to have reduced students' average intake of fat, saturated fat, percentage of energy from fat and saturated fat, and sodium from school lunches than had schools complied with the food-based standards alone ⁵.

In secondary schools, the average lunch met about 7 of the 14 standards. Only 18% of schools met the standard for sodium, no school met the standard for iron, and few schools met the standards for zinc and calcium. Unique challenges in secondary schools were proposed to be the different style of food service and the poorer nutritional quality of available food to begin with ³. The nutritional quality of products sold in secondary school vending machines had also improved. Drinks sold in vending machines that were mostly compliant with food-based and nutrient-based standards increased to 82% in 'Year 3' compared to 42% at baseline, although a

lower number of available foods were compliant (only 29% vs 14% at baseline)^{4,6}. Scotland has also monitored its standards⁷.

France

In France, an inter-ministerial circular¹ regarding food composition and food safety of school meals was introduced in 2001⁸. This circular set frequency guidelines for 12 food groups, including the minimum or maximum frequency that each food group should be offered across 20 consecutive meals⁹.

Both reported and actual compliance with regard to each food group frequency guideline and the number of food group guidelines met by each school were measured in a nationally representative sample of schools (servicing children aged 10 to 18)¹⁰. Self-reported compliance was high: 75% of schools reported frequent use of all 12 guidelines. However, actual compliance, as measured by menu analysis and calculated by the researchers, was much lower, with only five recommendations followed by more than 75% of schools and two other guidelines were followed by approximately half of the schools. Compliance was low for the remaining five guidelines for main courses and dairy products. Variations in compliance were also observed between lunches and dinners, and between the type of school surveyed (schools administered by the Ministry of Agriculture vs. the Ministry of Education).

Rome, Italy

In Italy, Roman Schools adopted the *All For Quality* food procurement principles in 2001. The principles include social and nutritional health as well as environmental considerations. Approximately 140,000 school lunches and midmorning snacks are provided daily by six companies. The contracts, which are awarded for a three year period, are based on a 100-point system. Fifty one points are allocated to the purchase price of the food. The remaining 49 points are awarded for supporting the infrastructure (improving canteens, kitchens, furniture, training courses, informational campaigns and organizational features) and the type or quality of food (place of origin, organic, fair trade etc.).

Currently, seventy nutritionists are employed to ensure that school meals meet national nutritional guidelines; a Parent Canteen Commission is elected to monitor food quality and taste using a checklist; and a company is contracted to ensure that food service providers meet the terms of their contracts (e.g. perform lab analyses, HACCP analyses, etc.)¹¹. This stringent monitoring program played a large role in changing Roman school meals since the principles were introduced. Monitoring visits rose from 160 in 2001¹¹ to 1,200 (2002-2004), which led to an increase in the number of sanctions on food companies for non-compliance from 7 to 450. Subsequently (2004-2007), monitoring visits increased to 3,500; while, sanctions for non-compliance decreased to 107, demonstrating success of the monitoring process in improving performance.

¹ A set of recommendations issued by a ministry intended for public officers for non-mandatory application.

North America

United States

The United States has two sets of school nutrition policies: the National School Lunch and Breakfast Programs (final nutrition standards released in 2012) and the IOM's Nutrition Standards for Foods in Schools (2007)¹², the latter applying to competitive foods – foods and beverages sold outside of the school programs. Several studies have evaluated policies specific to the National School Lunch Program (Colorado), the National School Breakfast Program (California), and competitive foods (California), however they were undertaken before the final standards and IOM standards were introduced.

The US government issued a mandate under the Child Nutrition and Women, Infants, and Children Reauthorization Act of 2004 requiring school districts participating in the National School Lunch Program to create a Local Wellness Policy (LWP) by June 2006¹³. An evaluation of rural, low income Colorado elementary schools showed that post-implementation (2007) of the LWP, more fruits were offered in the lunchroom and more schools were reported preparing poultry without the skin¹⁴. However, no changes were found in daily offerings of vegetables, or the percent of schools offering candy or high-fat snacks or fruits and vegetables in à la carte provisions.

California's Competitive Food and Beverage Nutrition Policies for Schools (Senate Bills 12 and 965), passed in 2005, are among the most stringent and comprehensive in the United States¹⁵. SB 12 regulates the amounts of fat, sugar, and calories in competitive foods while SB 965 phases out the sale of sweetened beverages. Several studies have evaluated California's legislation^{15,16,17}. Among a random sample of high schools in California (n=56), the average percent compliance to SB 12 standards for all food items sold was 64% (range from 32% to 90%)¹⁵. Compliance was higher for beverages (71% on average with a range of 31% to 100%)¹⁵. However, according to a review by Woodward-Lopez et al. (2011), improvements in the Californian school environment were modest as many of the compliant food products, despite being lower in fat, sugar, and calories were modified versions of highly processed foods and thus of low nutritional value (e.g. baked chips)¹⁷.

In 2005, California also introduced SB 281, the California Fresh Start Program (CFSP), a federally-funded initiative designed to encourage schools to provide additional servings of fresh, locally grown fruits and vegetables in the School Breakfast Program. A 2006-07 evaluation of the CFSP in a representative sample of schools (n=69) showed promising results¹⁸. The offerings of fresh fruits and vegetables doubled while offerings of fruit juice decreased. This pattern was also reflected in the actual amounts taken by students, as recorded by food service personnel. Although the program showed great promise for the future, a higher reimbursement rate is necessary in order to sustain the program¹⁸.

Canada

There are currently no national school nutrition standards in Canada but there are several Canadian provinces including Saskatchewan, New Brunswick, Nova Scotia, Prince Edward Island,

British Columbia (BC), and Ontario¹⁹ that have adopted healthy school food procurement standards. Though not recent, BC is the only province with published data regarding compliance to their nutrition guidelines.

In 2005, the BC government introduced the *Guidelines for Food and Beverage Sales in BC Schools*, which were revised in 2007 and in 2010. An evaluation of compliance to the guidelines was carried out in 2007²⁰. The report showed that in examining vending machine options, 65% of schools surveyed (n=868) reported that beverages that were 'not recommended' in the guidelines (and should be excluded) made up less than a quarter of the options available. However, schools were much less successful in eliminating 'not recommended' snacks.

Other provinces have monitored the foods available in schools but not compliance to school nutrition guidelines. Methodologically these studies are useful in understanding approaches to monitoring the school food environment, and for providing baseline data prior to the introduction of any policy. For example, a 2006 survey of Manitoba school foods showed that the top ten foods sold in school cafeterias were chocolate milk, sandwiches/wraps, cookies, pizza, french fries, soft drinks, soup, 100% fruit juice, water and plain milk²¹. A follow up survey in 2009, after the introduction of their Nutrition Guidelines²², showed that a number of unhealthy selections in 2006 were replaced by healthier selections in 2009; and 97% of schools followed some of the guidelines compared to 57% in 2006. However, compliance to these guidelines was not assessed²¹.

Australia

The *National Healthy School Canteens Project*, led by the Department of Health and Ageing was developed in 2011; implementation is the responsibility of the six states and two territory jurisdictions, although it is not mandatory²³. In Australia, meals are not provided in government schools, and foods must be brought from home or purchased at the school canteen. The National Project builds on existing food supply strategies that have been implemented by a number of State and Territory governments, starting in New South Wales (NSW) in 2005 with the Fresh Tastes @ School NSW Healthy School Canteen Strategy. In some instances the requirements of the National Project are less robust than those of jurisdictional strategies already in place, and the National Project may be most useful for those smaller states and territories which did not otherwise available strategies. It consists of three components: a national food categorisation system for school canteens; training materials for canteen staff; and an evaluation framework. An evaluation toolkit was developed in 2010 that was based on methods developed in NSW²⁴.

The evaluations carried out in NSW were based on self-reported data by canteen managers from participating schools (n = 513). Less than 12 months after introduction of Fresh Tastes, over half of the schools (56.3%) had made all of the changes required by Fresh Tastes while most others (41.3%) had made some of the changes²⁴. Primary school canteen managers were more likely to report having made all of the changes compared to secondary schools' canteen managers. Of those who reported making at least some of the changes, the majority of managers (82%) reported limiting the sale of all "RED foods" (least healthy products) and (87%)

reported that they had made sure that AMBER foods and drinks (moderately unhealthy products) did not dominate the menu and using smaller serving sizes where possible.

In Western Australia, a healthy food and drink policy was introduced in school canteens in December 2006 and evaluated two years later, with similar results to those in NSW²⁵. In Victoria, the Victorian Healthy Canteen Kit was released in 2005 and evaluated in 2007, although the results are no longer publically available.

In Queensland, a broader food supply strategy (Smart Choices) applies in all state schools in all situations where food and drinks are supplied in the school environment— ranging from tuckshops to vending machines to school excursions. The program was introduced in 2006, became mandatory in January 2007 and was evaluated later that year²⁶. Three concurrent surveys were administered to all school principals (n=1275), all Parent and Citizens' Associations (P&Cs) (n=1258) and a random sample of tuckshop convenors (n=526) throughout the state. Nearly all (>95%) of Principals, P&Cs, and tuckshop convenors reported that their school tuckshop had implemented Smart Choices in: school breakfast programs (98 and 92%); vending machine stock (94 and 83%); vending machine advertising (85 and 84%). The perceived success of this project prompted the extension of an improved version of the strategy to all Queensland Health Department owned facilities in 2007. Although this example did not evaluate the nutritional quality of foods relative to the nutritional standards, it is an important example of the school sector serving as a model for developing better strategies in other areas of the public sector.

China

In China, a pilot nutrition improvement plan for rural compulsory education students exists where the government provides subsidies for students in rural areas in 680 counties (one quarter of all counties). The Ministry of Health has developed recommendations for school dietary guidelines, including both nutrient-based and food-based standards. To evaluate this project, one centre of nutrition in China has set up an online recording information system website. The following link provides information on this nutrition improvement plan; however, the details are only available in Mandarin.

<http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/s6329/list.html>

Additional related information (in Mandarin) can be found on the following website of the National Institute for Nutrition and Food Safety, China CDC:

<http://www.chinanutri.cn/ShowListArticle.aspx?code=0010402>

Public Health Nutrition Special Issue on School Foods

After this paper was written and reviewed, an issue in *Public Health Nutrition* (Vol 16, Issue 6, 2013) was published on topics related to health and school meal programmes. The issue was the result of an international workshop held in January 2012 to examine the evidence base regarding school food and nutrition policy and to make recommendations for developing and linking evidence and policy. Participants included academics and policy makers from twenty middle- and high- income countries, as well as international agencies including the WHO, World Bank and World Food Programme.

Several articles from this issue are highly relevant to this paper. In particular, two articles within the issue demonstrate how school food monitoring and evaluation programmes have greatly influenced policies and guidelines in the US and the UK ^{27,28}. Additionally, two other articles review or comment on some of the existing monitoring of school feeding programmes (or lack thereof) in lower income countries, including sub-Saharan Africa ^{29,30}.

Importantly, the issue points out that international collaborations and research can build upon the evidence base to create effective monitoring and evaluation methodologies ³¹. However the authors also point out that it is important to recognize that when considering transnational policies, there are always local or specific country considerations to take into account ³¹.

Table S1: Guided Approach to Monitoring the Foods Provided or Sold in Publically Funded Institutions ¹

Guide to Completing Component I (Sections A to E): Policy and Program Assessment and Analysis

Status of Jurisdiction	Check (√) Applicable	Complete the following sections if checked:
No program or policy exists		A only
A policy exists but no nutrition standards or guidelines are in place		A and B only
Nutrition standards or guidelines exist and are either food-based or nutrient-based		A, B, C, and D (for food based) or E (for nutrient based), respectively
Nutrition standards or guidelines exist and are both food-based and nutrient-based		A, B, C, D, and E

Guide to Completing Component II (Sections F to I): Monitoring Policy and Program Implementation in Public Sector Settings (Note: can be completed whether or not a nutrition policy/program is in place)

Status of Jurisdiction	Check (√) Applicable	Complete the following sections if checked:
No monitoring data ² available		F only
Monitoring data are available but does not relate to a specific policy or program		F and G only
Participation monitoring data are available regarding the percentage of sites/individuals participating in or reporting compliance with the standards or guidelines		F, G and H
Nutritional quality of the foods planned, provided or sold (based on analysis of menus or actual foods) relative to nutrition standards or guidelines ³		F, G, H, and I

¹ Publically funded institutions for the purpose of this paper includes facilities such as daycares/child care centres, schools, hospitals, long-term care facilities for the elderly or infirm, military facilities, prisons, government owned or operated work sites or buildings, and public buildings such as sports facilities, recreation centres, community centres, etc.

² Data that has reported implementation of a food policy or program; or assessed the nutritional quality or "healthfulness" of foods provided or sold

³ If nutrition standards or guidelines do not exist within the jurisdiction, this may be an assessment of the nutritional quality of foods relative to the standards of a similar jurisdiction or other authoritative body or other appropriate standards used for defining "healthy".

Component I: Policy and Program Assessment and Analysis

Section A – Details regarding the Nutrition Policy or Legislative environment for Policies in Public Sector Settings

1	Legislative basis	Yes/No	Details (Include whether foods are provided or sold)
1a	Does any government department or agency have legislative authority for nutritional quality of foods? If so, which agency or which legislation? At what level (national, state/province, local)?		
1b	Are there existing nutritional quality standards/guidelines that can be used/adapted for application to nutritional quality of foods provided or sold by the public sector (e.g. national nutrition healthy eating guidelines, dietary or food guides, regulations governing nutrition labelling, nutrient content claims, health claims etc)?		
2	Are there current Policies/Programs/Legislation/Nutritional Standards/Guidelines in place to guide foods provided or sold in publically funded institutions? -At what level(s) of government (national, state/province, local)?		
	Are there any <u>general programs</u> in place governing the NQ of foods procured, served or sold in publically funded institutions?		
	Or specific programs regarding foods provided or sold in <u>daycares/child care centres</u> ?		
	Foods provided or sold in <u>schools</u> ? ¹ (at what level? primary, secondary, post-secondary)		
	Foods provided or sold to <u>patients in public hospitals</u> ?		
	Foods sold to staff or visitors, in <u>cafeterias, or commercial food outlets in hospitals</u> ?		
	Foods provided or sold in <u>long-term care facilities</u> for the elderly or infirm?		
	Foods provided or sold in <u>other government facilities</u> - military, prisons, other		
	Foods provided or sold in <u>government owned or operated work places</u> ?		
	Foods provided or sold in government owned or operated <u>other public facilities</u> e.g. sports facilities, recreation centres, community centres etc?		
3	Are there other related policies applicable to the setting?		
	Foods sold in <u>vending machines</u> located in any of the above facilities?		
	<u>Beverage policies</u> regarding safe drinking water, soft drink bans etc?		
	<u>Subsidized foods (e.g. fruits or milk) provided</u> ?		

¹ School sites can be as broad as school excursions, class parties, and school sponsored events.

Section B – Details of Food Nutrition Program or Policy (check applicable) ¹

Country or Jurisdiction	Program/ Policy	Sector (e.g. schools, hospitals etc	Nutrition Standards or Guidelines in Place		Participation		Implementation Support? (Resources Developed)		Monitoring Framework or monitoring data avail?	
			Yes (if Yes, see section C)	No	Mandatory (e.g. legislated by government or stated <i>mandatory</i> policy)	Voluntary	For foods purchased or sold	For food preparer, chef, caterer, consumer	Yes (if Yes, see section F)	No
	e.g. “Healthy Schools” Program	e.g. Primary schools	✓		✓		✓	✓	✓	

¹ ✓ indicates aspects of an ideal school food nutrition program

Section C – Details of Type of Nutrition Standards or Guidelines Used in Policy/Program (check all applicable) ¹

Program/ Policy	Web link (for details)	Basis ²		Type of nutrition standards/guidelines applied				Age Specific Reqmts		Application of nutrition standards ²		
		Per serving	Per 100 g	Food Guide Servings ⁴	Other food composition standards ⁵	Inclusion criteria	Exclusion criteria	Yes	No	In/Out ⁶	"Choose most/least" ⁷	Composite Score ⁸
e.g. "Healthy Schools" Program				✓	✓	✓	✓	✓				

¹ ✓ indicates aspects of an ideal school food nutrition program

² Ideally, the application of nutrition standards should be appropriate to the country's nutrition environment

³ Program lists nutrients and levels that are used for inclusion and/or exclusion of foods

⁴ Program is based on a minimum/maximum number of food guide servings (e.g. at least one serving of fruit or vegetables)

⁵ Other food compositional criteria are used (e.g. these might be limits on number of fruit juice vs fruit servings, number of whole grain products, restrictions on sugar sweetened beverages or candy sales, chicken to be served without skin etc)

⁶ Application of the nutrient standards in the program where foods with certain characteristics may not be served/sold, or only foods meeting certain criteria are permitted to be served/sold

⁷ Application of the nutrient standards in the program where a certain proportion of foods must meet the higher standards (e.g. "choose most")

⁸ Program uses a summary indicator, food scoring/traffic light or other composite score based program to include and/or exclude foods

Section D – Details of Food Group-based Standards or Guidelines Used in Policy/Program

Program/ Policy	Details of food group standards or guidelines		Basis of food group standards/guidelines	
	Quantity or proportion of food group servings	Healthfulness of foods within food groups	Relative to global or national nutrient intake recommendations	Relative to applicable national food group guidelines (if exists)
e.g. “Healthy Schools” Program	<p>e.g. Fruits and vegetables: At least 2 servings per day per pupil must be provided.</p> <p>Foods to encourage</p> <ul style="list-style-type: none"> • Fruits and vegetables • Milk and alternatives • Meat and alternatives • Grain products <p>Foods to limit</p> <ul style="list-style-type: none"> • Salt and condiments • Foods and beverages high in calories, sugar, fat, or salt (e.g. cakes, chocolates, candies, muffins, french fries, potato chips, alcohol, fruit flavoured drinks, soft drinks, etc.) 	<p>e.g. Fruits and vegetables: Vegetables and fruit must be prepared with little or no added fat, sugar or salt. Only 100% fruit or vegetable juices are permitted.</p> <p>Grain products: a certain proportion must be whole grains</p> <p>Limits or bans on sugar sweetened beverages, soft drinks, confectionary products, salty snacks etc</p>	e.g. WHO/FAO nutrient requirements	e.g. UK Food Plate, Canada’s Food Guide, or US “Choose My Plate”

Section E – Details of Nutrient-based Standards or Guidelines Used in Policy/Program

Program/ Policy	Details of nutrient standards/guidelines		Basis of nutrient standards/guidelines	
	If min/max levels are set for each nutrient for an average meal , detail here:	If nutrient levels differ within a food group , detail here:	Relative to global or national nutrient intake recommendations	Relative to national/provincial/state nutrient standards for school ¹ foods (if exists)
e.g. “Healthy Schools” Program	<p>e.g. An average primary school lunch must provide:</p> <ul style="list-style-type: none"> • Energy: 530 kcal ± 5% • Max fat: 20.6 g • Max sodium: 499 mg <p>Key nutrients: Energy, total fat, saturated fat, sodium, added sugars, important micronutrients (will vary by country)</p> <p>Other nutrients: Carbohydrates, fibre, protein, vitamins and minerals</p>	<p>e.g. Beverages: Generally, beverages provide no more than 35 percent of calories from total sugars per portion as packaged. Exceptions to the standard are:</p> <ul style="list-style-type: none"> • 100 percent fruit or vegetable juices without added sugars; • Unflavoured nonfat and low-fat milk. Flavoured nonfat and low-fat milk can contain no more than 22 grams of total sugars per 8-ounce portion. 	<p>e.g. The UK nutrient-based standards are derived from UK nutrient recommendations and were calculated based on typical mixed sex primary and secondary schools.²</p>	<p>e.g. US IOM’s <i>Nutrition Standards for Foods in Schools</i>.³</p>

¹ Or the public setting applicable to the program

² School Food Trust. *A Guide to Introducing the Government’s Food-based and Nutrient-based Standards for School Lunches*. 2009 [cited 2012 Oct. 26]; Available from: <http://www.schoolfoodtrust.org.uk/the-standards/the-nutrient-based-standards/guides-and-reports/guide-to-the-nutrient-based-standards>

³ Stallings, V.A., A.L. Yaktine, and Institute of Medicine (U.S.). Committee on Nutrition Standards for Foods in Schools., *Nutrition standards for foods in schools : leading the way toward healthier youth*. 2007, Washington, D.C.: National Academies Press.

Component II - Monitoring Policy and Program Implementation

Section F – Status of Monitoring

Monitoring Plan or Framework developed?		Monitoring data available?	
Yes	No	Yes	No
		See Section G	

Section G – Overview of Monitoring Data Currently Available

Reference Source/ Web link to data	Type of data		Sample description		Indicate Year (or time post implementation) or report frequency	Sanctions for non-compliance		Data reported		
	Self Report ¹	3 rd Party review	Full Sample	Subsample		Yes	No	Frequency of population/ sites that implemented a program or policy	Assessment of the nutritional quality or "healthfulness" of foods provided or sold...	
									...relative to nutrition standards or guidelines ²	...not relative to any nutrition standards or guidelines ³
			Specify n and population characteristics	Specify n and population characteristics		Specify		Yes (Complete Section H)	Yes (Complete Section I)	Yes (Detail here)

¹ e.g. Reported by school canteen managers or principals

² If nutrition standards or guidelines do not exist within the jurisdiction, this may be an assessment of the nutritional quality of foods relative to the standards of a similar jurisdiction or other authoritative body or other appropriate standards used for defining "healthy". (Provide reference to standard used)

³ For example, the assessment may be based on definitions of "healthy" or "unhealthy" foods developed by a research team or health organization or the assessment may report on the most common foods provided or offered for sale.

Section H – Assessment of the number or proportion of sites or individuals participating or complying with the Nutritional Standards or Guidelines

Program or policy (name, location and year established)	Percent of schools or other institutions that <u>implemented</u> policy or program		Percent of schools or other institutions <u>complying</u> with the policy or program	
	# and % of sites	# and % of individuals affected	# and % of sites	# and % of individuals affected

Section I – Assessment of the Nutritional Quality of Foods (food group based and nutrient based) Relative to Nutritional Standards or Guidelines ¹

	1. Foods planned ² and/or 2. Actual foods provided or sold [examples shown]			
	Food Group Based		Nutrient Based	
Quantitative Assessment (assess relative to each standard/guideline)	% of foods meeting food group based standards?	e.g. Overall, 23% (range: 8% to 62%) of food items (n=1,423) adhered to the food-based guidelines (12 schools sampled): -18% adherence in vending machines -25% adherence in school food service -27% adherence in school stores	% of foods meeting nutrient based standards?	-30% of foods sold in primary schools met the standard for sodium
	% of schools meeting food group based standards?	e.g. 89% of schools met the food-based standards for snacks (range of compliance varied between 32% and 100%)	% of schools meeting nutrient based standards?	-most primary schools (86%) met between 7 and 10 out of the 14 nutrient and energy standards for the average school lunch
	Foods or standards most or least compliant?	e.g. Within the dairy category, yogurt parfaits were most compliant (72%) with food based standards, while cheeses were least compliant (28%)	Foods or standards most or least compliant?	-low sodium deli meats were the least compliant (35%) -low fat dairy products were the most compliant (87%)
Qualitative Assessment	Self-report	e.g. canteen managers reported that the whole grain standards were the most difficult to meet, while low fat dairy were the least difficult	Self-report	e.g. Caterers/principals reported that the sodium standards were the most difficult to meet due to low availability of products meeting the standard
	3rd party	e.g. whole grain bread products were available in almost all schools inspected		

¹ If nutrition standards or guidelines do not exist within the jurisdiction, this may be an assessment of the nutritional quality of foods relative to the standards of a similar jurisdiction or other authoritative body or other appropriate standards used for defining "healthy". (Provide reference to standard used)

² For example, this could be an assessment of the nutritional quality of menus (e.g. evaluating a menu cycle between 1 and 4 weeks).

REFERENCES

1. Harper C, Wells L. School meal provision in England and other Western countries: a review. School Food Trust; 2007.
2. Haroun D, Harper C, Pearce J, Wood L, Sharp L, Poulter J. Primary School Food Survey 2009. Sheffield: School Food Trust; 2009 revised 2012.
3. Nicholas J, Wood L, Nelson M. Secondary school food survey 2011: School lunch: provision, selection and consumption. Sheffield: School Food Trust; 2012.
4. Matthews A, Doll H, Scarborough P, et al. National survey of vending in secondary schools in England, 2006-2009. Sheffield: School Food Trust; 2010.
5. Haroun D, Wood L, Harper C, Nelson M. Nutrient-based standards for school lunches complement food-based standards and improve pupils' nutrient intake profile. *Br J Nutr* 2011;106(4):472-4.
6. Matthews A, Nelson M, Kaur A, Rayner M, Kelly P, Cowburn G. Where has all the chocolate gone? A national survey assesses the effects of recent legislation to improve the nutritional quality of English secondary-school vending. *Public Health Nutr* 2011;14(8):1394-402.

7. HM Inspectorate of Education. Monitoring the Implementation of Hungry for Success: A Whole School Approach to School Meals in Scotland. Report on Progress. Livingston: HM Inspectorate of Education; October 2005.
8. Kelly B, Hughes C, Chapman K, et al. Consumer testing of the acceptability and effectiveness of front-of-pack food labelling systems for the Australian grocery market. *Health Promot Int* 2009;24(2):120-9.
9. Lobstein T, Davies S. Defining and labelling 'healthy' and 'unhealthy' food. *Public Health Nutr.* 2009;12(03):331-40.
10. Dubuisson C, Lioret S, Calamassi-Tran G, Volatier JL, Lafay L. School meals in French secondary state schools with regard to the national recommendations. *Br J Nutr* 2009;102(2):293-301.
11. Liquori T, Associates La. Rome, Italy: A Model in Public Food Procurement. What Can the United States Learn? Briefing Paper. 2006.
12. Stallings VA, Yaktine AL, Institute of Medicine (U.S.). Committee on Nutrition Standards for Foods in Schools. Nutrition standards for foods in schools : leading the way toward healthier youth. Washington, D.C.: National Academies Press; 2007.
13. Child Nutrition and WIC Reauthorization Act of 2004. 2004.
14. Belansky ES, Cutforth N, Delong E, et al. Early Effects of the Federally Mandated Local Wellness Policy on School Nutrition Environments Appear Modest in Colorado's Rural, Low-Income Elementary Schools. *J Am Diet Assoc* 2010;110(11):1712-7.

15. Samuels SE, Bullock SL, Woodward-Lopez G, et al. To What Extent Have High Schools in California Been Able to Implement State-Mandated Nutrition Standards? *J Adolescent Health* 2009;45(3):S38-S44.
16. Samuels SE, Hutchinson KS, Craypo L, Barry J, Bullock SL. Implementation of California State School Competitive Food and Beverage Standards. *J School Health* 2010;80(12):581-7.
17. Woodward-Lopez G, Gosliner W, Samuels SE, Craypo C, Kao J, Crawford PB. Lessons learned from evaluations of California's statewide school nutrition standards (vol 100, pg 2137, 2010). *Am J Public Health* 2011;101(10):1816-.
18. Woodward-Lopez G, Webb K. Evaluation of the California Fresh Start Program: Report of findings. University of California, Berkeley; June 2008.
19. L'Abbe MR, Sunohara D, Wan J. Environmental Scan of Public Food Procurement Policies related to Sodium. Prepared for the Public Health Agency of Canada; 2011.
20. Education Mo, Health Mo. School Food Sales and Policies Provincial Report II. March 2008.
21. Government of Manitoba. Manitoba School Nutrition Survey Report. 2009.
22. Government of Manitoba. Manitoba School Nutrition Handbook: getting started with guidelines and policies. Manitoba Health & Healthy Living. Available from: www.gov.mb.ca/healthyschools/foodinschools/index.html; 2006.

23. Australian Government Department of Health and Ageing. Nutrition and Healthy Eating: National Healthy School Canteens Project; 2011 [cited 2012 August 10]; Available from: <http://www.health.gov.au/internet/main/publishing.nsf/Content/phd-nutrition-canteens>.
24. Nutrition and Physical Activity Branch. NSW Healthy School Canteen Strategy Evaluation Report 2005. Sydney: NSW Department of Health; 2006.
25. Pettigrew S, Donovan RJ, Jalleh G, Pescud M, Cowie S. Addressing Childhood Obesity through School Canteens. Report to the WA Department of Education and Training. UWA Business School, the University of Western Australia, and the Centre for Behavioural Research in Cancer Control, Curtin University, Perth; 2009.
26. Dick M, Lee A, Bright M, et al. Evaluation of implementation of a healthy food and drink supply strategy throughout the whole school environment in Queensland state schools, Australia. *Eur J Clin Nutr* 2012;66(10):1124-9.
27. Hirschman J, Chriqui JF. School food and nutrition policy, monitoring and evaluation in the USA. *Public Health Nutr* 2013;16(6):982-8.
28. Adamson A, Spence S, Reed L, et al. School food standards in the UK: implementation and evaluation. *Public Health Nutr* 2013;16(6):968-81.
29. Gelli A, Espejo F. School feeding, moving from practice to policy: reflections on building sustainable monitoring and evaluation systems. *Public Health Nutr* 2013;16(6):995-9.

30. Bundy DA, Drake LJ, Burbano C. School food, politics and child health. *Public Health Nutr* 2013;16(6):1012-9.
31. Mikkelsen BE, Ohri-Vachaspati P. Hunger, overconsumption and youth: future directions for research in school-based public health nutrition strategies. *Public Health Nutr* 2013;16(6):953-5.