STUDY DESIGN AND ANALYSIS METHODS FOR EXAMINING THE IMPACT OF NUTRITION-AND PHYSICAL ACTIVITY-RELATED LAW AND POLICY ON PRACTICES, COMMUNITY ENVIRONMENTS, AND INDIVIDUAL BEHAVIORS/ATTITUDES

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CDC NOPREN/PAPRN+ Webinar

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PRESENTATION OBJECTIVES

- Review approaches and considerations when **"measuring" law and policy** for use in implementation and impact studies.
- Discuss the importance of **"conceptual matches" between the policy and outcome** measures.
- Highlight **study design considerations.**
- Identify **considerations when using existing or developing new policy data sources** for use in implementation and impact studies.

MEASURING LAW AND POLICY FOR USE IN EVALUATION/IMPACT STUDIES

EXAMPLES OF RESEARCH QUESTIONS

Source: "Vanderbilt Avenue, Brooklyn" by New York City Department of Transportation is licensed under CC BY 2.0. Available: https://www.flickr.com/photos/nycstreets/9009276038/

www.pedbikeimages.org/
Dan Burden

- Reduced SSB consumption
- Increased Water consumption

UIC

NOPREN Nutrition & Obesity Network POLICY RESEARCH + EVALUATION

PAPRN+ PHYSICAL ACTIVITY POLICY • RESEARCH • NETWORK • PLUS

SETTING THE CONTEXT: DEFINING POLICY EXPOSURES

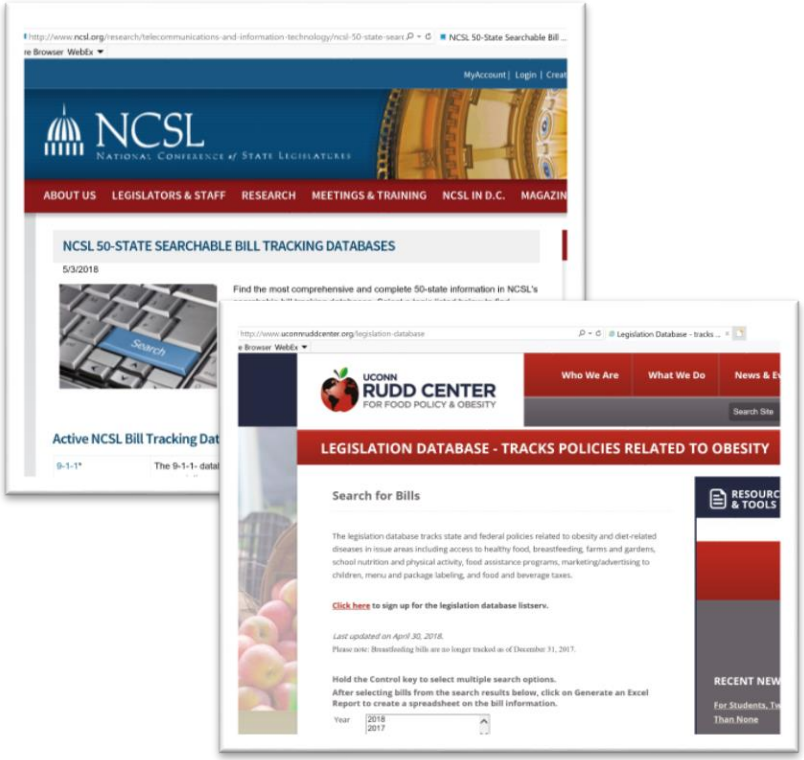
- **Public Policies:** Formal policies adopted and implemented by an official governing body
  - Federal, state, local (county and/or municipal), special governments (school districts, park districts, forest preserve districts)
  - Legislation (ordinances), regulations, court decisions, executive orders, plans (e.g.,, master/comprehensive, transportation, bike/pedestrian, food, etc.)
- **Organizational Policies:** Informal policies adopted by non-governing organizations such as companies, associations, voluntary and membership organizations (e.g., Y-USA), community-based organizations (e.g., community recreation centers), etc.

SETTING THE CONTEXT: MEASURING POLICY EXPOSURES

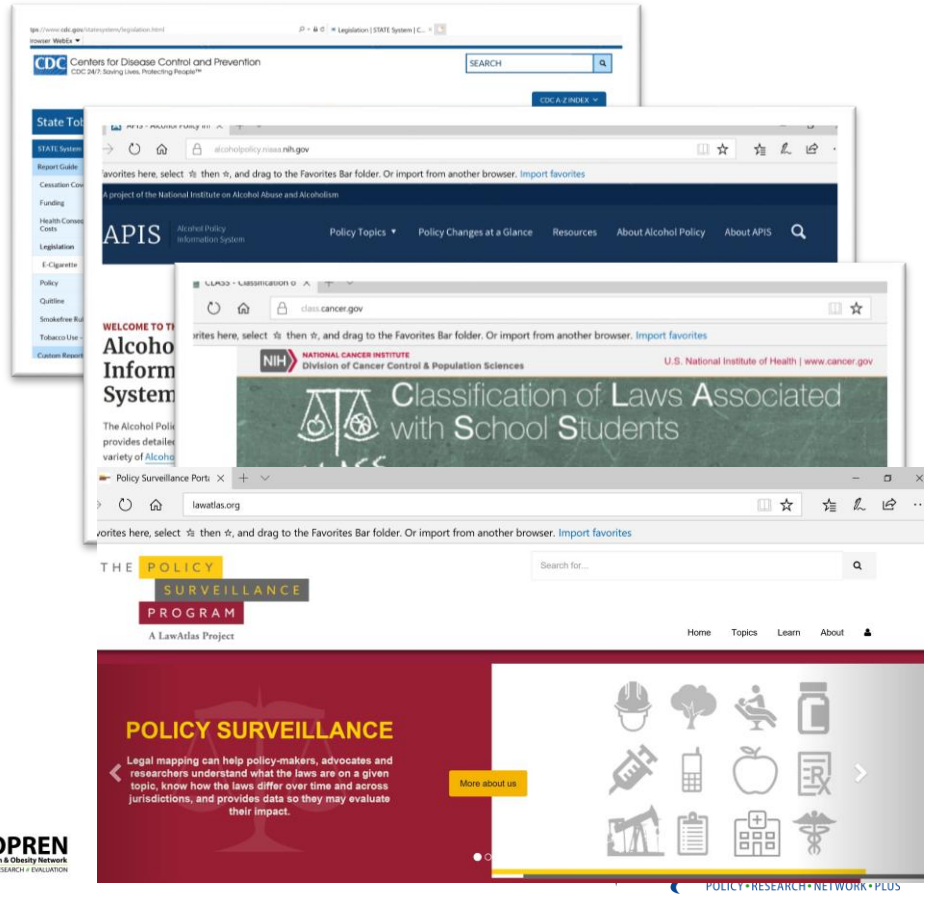
- **Policy "collection"/status**
  - Objective
    - Primary legal/policy research
      - Westlaw/LexisNexis; local code publishers
      - Government websites
      - Verification/follow up with jurisdicction
    - Crowd sourcing
  - Perceived/Self-report
    - Surveys of officials/self-reports of policy existence
      - Often aspirational/implementation-oriented rather than objective measure of "what exists")

POLICY SYSTEMS: TRACKING VS. SURVEILLANCE

Policy Tracking



Policy Surveillance



BILLS VS. STATUTES: WHY IT MATTERS FOR UNDERSTANDING

Bill Text

Section 39. Subsection (2) of section 595.407, Florida Statutes, is amende

595.407 Children's summer nutrition program.—

(2) Each school district shall develop a plan to sponsor or operate sites in the school district as follows:

(a) Within 5 miles of at least one ~~elementary~~ school that serves through 5 at which 50 percent or more of the students are meals ~~and~~ for the duration of 35 ~~consecutive~~ days betwe beginning of the next school year. School districts may exc

(b) Within 10 miles of each ~~elementary~~ school that serves a through 5 at which 50 percent or more of the students are meals, except as operated pursuant to paragraph (a).

Statute Text

§ 595.407. Children's summer nutrition program.

(1)This section may be cited as the "Ms. Willie Ann Glenn Act."

(2)Each school district shall develop a plan to sponsor or operate a summer nutrition program to operate sites in the school district as follows:

(a)Within 5 miles of at least one school that serves any combination of grades kindergarten through 5 at which 50 percent or more of the students are eligible for free or reduced-price school meals for the duration of 35 days between the end of the school year and the beginning of the next school year. School districts may exclude holidays and weekends.

(b)Within 10 miles of each school that serves any combination of grades kindergarten through 5 at which 50 percent or more of the students are eligible for free or reduced-price school meals, except as operated pursuant to paragraph (a).

(3)

(a)A school district may be exempt from sponsoring a summer nutrition program pursuant to this section. A school district seeking such exemption must include the issue on an agenda at a regular or special school district meeting that is publicly noticed, provide residents an opportunity to participate in the discussion, and vote on whether to be exempt from this section. The school district shall notify the department within 10 days after it decides to become exempt from this section.

(b)Each year, the school district shall reconsider its decision to be exempt from the provisions of this section and shall vote on whether to continue the exemption from sponsoring a summer nutrition program. The school district shall notify the department within 10 days after each subsequent year's decision to continue the exemption.

(c)If a school district elects to be exempt from sponsoring a summer nutrition program under this section, the school district may encourage not-for-profit entities to sponsor the program. If a not-for-profit entity chooses to sponsor the summer nutrition program but fails to perform with regard to the program, the school district and the department are not required to continue the program and shall be held harmless from any liability arising from the discontinuation of the summer nutrition program.

(4)The superintendent of schools may collaborate with municipal and county governmental agencies and private, not-for-profit leaders in implementing the plan. Although schools have proven to be the optimal site for a summer nutrition program, any not-for-profit entity may serve as a site or sponsor. By April 15 of each year, each school district with a summer nutrition program shall report to the department the district's summer nutrition program sites in compliance with this section.

(5)The department shall provide to each school district by February 15 of each year a list of local organizations that have filed letters of intent to participate in the summer nutrition program in order that a school district may determine how many sites are needed to serve the children and where to place each site.

BILLS VS. STATUTES: WHY IT MATTERS FOR UNDERSTANDING

Bill Text

Sec. 5. Minnesota Statutes 2014, section 120B.021, subdivision 3, is amended to read:

<< MN ST § 120B.021 >>

Subd. 3. Rulemaking. The commissioner, consistent with the requirements of this section and section
adopt statewide rules under section 14.389 for implementing statewide rigorous core academic standards
mathematics, science, social studies, **physical education,** and the arts. After the rules authorized under
are initially adopted, the commissioner may not amend or repeal these rules nor adopt new rules o
without specific legislative authorization. The academic standards for language arts, mathematics, and
implemented for all students beginning in the 2003–2004 school year. The academic standards for s
studies must be implemented for all students beginning in the 2005–2006 school year.

Statute Text

120B.021 REQUIRED ACADEMIC STANDARDS

Subdivision 1. ***Required academic standards.***

(a) The following subject areas are required for statewide accountability:

(1) language arts;

(2) mathematics;

(3) science;

(4) social studies, including history, geography, economics, and government and citizenship that includes civics consistent with section 120B.02, subdivision 3;

(5) physical education;

(6) health, for which locally developed academic standards apply; and

(7) the arts, for which statewide or locally developed academic standards apply, as determined by the school district. Public elementary and middle schools must offer at least three and require at least two of the following four arts areas: dance; music; theater; and visual arts. Public high schools must offer at least three and require at least one of the following five arts areas: media arts; dance; music; theater; and visual arts.

(b) For purposes of applicable federal law, the academic standards for language arts, mathematics, and science apply to all public school students, except the very few students with extreme cognitive or physical impairments for whom an individualized education program team has determined that the required academic standards are inappropriate. An individualized education program team that makes this determination must establish alternative standards.

(c) The department must adopt the most recent SHAPE America (Society of Health and Physical Educators) kindergarten through grade 12 standards and benchmarks for physical education as the required physical education academic standards. The department may modify and adapt the national standards to accommodate state interest. The modification and adaptations must maintain the purpose and integrity of the national standards. The department must make available sample assessments, which school districts may use as an alternative to local assessments, to assess students' mastery of the physical education standards beginning in the 2018-2019 school year.

(d) A school district may include child sexual abuse prevention instruction in a health curriculum, consistent with paragraph (a), clause (6). Child sexual abuse prevention instruction may include age-appropriate instruction on recognizing sexual abuse and assault, boundary violations, and ways offenders groom or desensitize victims, as well as strategies to promote disclosure, reduce self-blame, and mobilize bystanders. A school district may provide instruction under this paragraph in a variety of ways, including at an annual assembly or classroom presentation. A school district may also provide parents information on the warning signs of child sexual abuse and available resources.

SELECTED FACTORS THAT DIFFERENTIATE POLICY TRACKING SYSTEMS FROM LONGITUDINAL POLICY SURVEILLANCE SYSTEMS

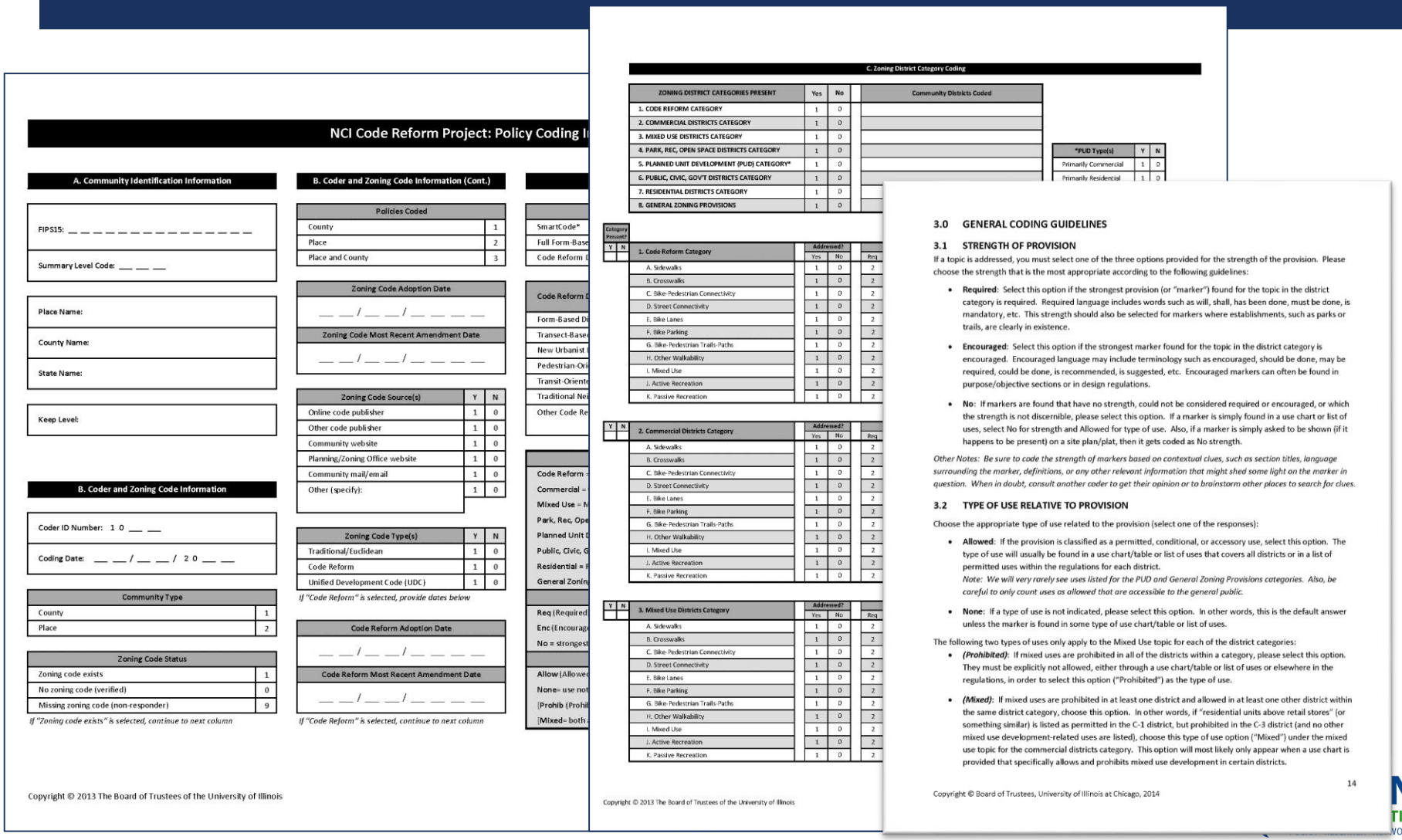
Policy Tracking/Reporting/Scans System	Longitudinal Policy Surveillance System
Reports on individual policy measures without linking to prior policy action -e.g., Bill level reporting of pending legislation	Examines **changes in policies over time**
Often text-based reporting of policy actions or yes/no type reporting	Can be **quantitative or qualitative** -Policy impact studies often rely on quantitative measures -Indicator/benchmarks often require "coded data"
New measures reported with certain frequency -e.g., Newly introduced or enacted legislation occurring during Q1 of yr	Policy data tied to specific **reference date** -e.g., Policies in effect as of January 1 of each year
Difficult to measure details of policy change over time, particularly if includes introduced and enacted measures	Easily **enables monitoring of changes in policy over time**
More advocacy/reporting oriented	More **evaluation-oriented**

NOT ALL POLICIES ARE CREATED EQUAL! ON THE NEED FOR SYSTEMATIC MEASUREMENT OF LAW AND POLICY

EXAMPLES OF "DATA" AVAILABLE FROM DIFFERENT POLICY ANALYSIS AND EVALUATION APPROACHES

Question	Approach 1: Text-based System	Approach 2: Does Law Exist ? (Yes/No)	Approach 3: Does Law Exist? (Detailed Coding Distinctions)	Difference in Understanding of Policy Status
Is there a state law governing availability of sugar-sweetened beverages in schools?	Only 100% juice, water, and skim/nonfat milk may be sold during the day EXCEPT at the HS level where….	1=Yes, law exists 0=No law	3-SSBs are banned in schools 2-SSBs are prohibited at certain times/ locations 1-SSB restrictions are encouraged 0-No law	Approach 1 provides the language of the law but requires the researcher to recode the information. Approach 2 simply tells whether a law exists or not but does not provide the nuances. Approach 3 tells both whether a law exists and how detailed the law is without recoding.
Is there a complete streets policy?	Whereas, XYZ jurisdiction believes that all users on the roadway should have safe and equitable access and ability to navigate the roadway.	1=Yes, policy exists 0=no policy	2-Complete streets design required for all reconstruction/redevelopment and new projects 1-Complete streets encouraged 0-No policy	

NOT ALL POLICIES ARE CREATED EQUAL: NEED FOR SYSTEMATIC RESEARCH



NCI Code Reform Project: Policy Coding I

A. Community Identification Information

FIPS15: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Summary Level Code: _ _ _

Place Name:

County Name:

State Name:

Keep Level:

B. Coder and Zoning Code Information

Coder ID Number: 1 0 _ _

Coding Date: _ _ / _ _ / 2 0 _ _

Community Type	
County	1
Place	2

Zoning Code Status	
Zoning code exists	1
No zoning code (verified)	0
Missing zoning code (non-responder)	9

If "Zoning code exists" is selected, continue to next column

B. Coder and Zoning Code Information (Cont.)

Policies Coded	
County	1
Place	2
Place and County	3

Zoning Code Adoption Date

_ _ / _ _ / _ _ _ _

Zoning Code Most Recent Amendment Date

_ _ / _ _ / _ _ _ _

Zoning Code Source(s)	Y	N
Online code publisher	1	0
Other code publisher	1	0
Community website	1	0
Planning/Zoning Office website	1	0
Community mail/email	1	0
Other (specify):	1	0

Zoning Code Type(s)	Y	N
Traditional/Euclidean	1	0
Code Reform	1	0
Unified Development Code (UDC)	1	0

If "Code Reform" is selected, provide dates below

Code Reform Adoption Date

_ _ / _ _ / _ _ _ _

Code Reform Most Recent Amendment Date

_ _ / _ _ / _ _ _ _

If "Code Reform" is selected, continue to next column

SmartCode*
Full Form-Base
Code Reform D
Code Reform D
Form-Based Di
Transect-Base
New Urbanist
Pedestrian-Ori
Transit-Orient
Traditional Nei
Other Code Re
Code Reform =
Commercial =
Mixed Use = M
Park, Rec, Ope
Planned Unit D
Public, Civic, G
Residential = F
General Zonin
Req (Required
Enc (Encourag
No = strongest
Allow (Allowe
None= use not
[Prohib (Prohi
[Mixed= both

C. Zoning District Category Coding

ZONING DISTRICT CATEGORIES PRESENT	Yes	No	Community Districts Coded
1. CODE REFORM CATEGORY	1	0	
2. COMMERCIAL DISTRICTS CATEGORY	1	0	
3. MIXED USE DISTRICTS CATEGORY	1	0	
4. PARK, REC, OPEN SPACE DISTRICTS CATEGORY	1	0	
5. PLANNED UNIT DEVELOPMENT (PUD) CATEGORY*	1	0	
6. PUBLIC, CIVIC, GOVT DISTRICTS CATEGORY	1	0	
7. RESIDENTIAL DISTRICTS CATEGORY	1	0	
8. GENERAL ZONING PROVISIONS	1	0	

*PUD Type(s)	Y	N
Primarily Commercial	1	0
Primarily Residencial	1	0

Category Present? Y	N	1. Code Reform Category	Addressed? Yes	No	Req
		A. Sidewalks	1	0	2
		B. Crosswalks	1	0	2
		C. Bike-Pedestrian Connectivity	1	0	2
		D. Street Connectivity	1	0	2
		E. Bike Lanes	1	0	2
		F. Bike Parking	1	0	2
		G. Bike-Pedestrian Trails-Paths	1	0	2
		H. Other Walkability	1	0	2
		I. Mixed Use	1	0	2
		J. Active Recreation	1	0	2
		K. Passive Recreation	1	0	2

Y	N	2. Commercial Districts Category	Addressed? Yes	No	Req
		A. Sidewalks	1	0	2
		B. Crosswalks	1	0	2
		C. Bike-Pedestrian Connectivity	1	0	2
		D. Street Connectivity	1	0	2
		E. Bike Lanes	1	0	2
		F. Bike Parking	1	0	2
		G. Bike-Pedestrian Trails-Paths	1	0	2
		H. Other Walkability	1	0	2
		I. Mixed Use	1	0	2
		J. Active Recreation	1	0	2
		K. Passive Recreation	1	0	2

Y	N	3. Mixed Use Districts Category	Addressed? Yes	No	Req
		A. Sidewalks	1	0	2
		B. Crosswalks	1	0	2
		C. Bike-Pedestrian Connectivity	1	0	2
		D. Street Connectivity	1	0	2
		E. Bike Lanes	1	0	2
		F. Bike Parking	1	0	2
		G. Bike-Pedestrian Trails-Paths	1	0	2
		H. Other Walkability	1	0	2
		I. Mixed Use	1	0	2
		J. Active Recreation	1	0	2
		K. Passive Recreation	1	0	2

3.0 GENERAL CODING GUIDELINES

3.1 STRENGTH OF PROVISION

If a topic is addressed, you must select one of the three options provided for the strength of the provision. Please choose the strength that is the most appropriate according to the following guidelines:

- **Required**: Select this option if the strongest provision (or "marker") found for the topic in the district category is required. Required language includes words such as will, shall, has been done, must be done, is mandatory, etc. This strength should also be selected for markers where establishments, such as parks or trails, are clearly in existence.
- **Encouraged**: Select this option if the strongest marker found for the topic in the district category is encouraged. Encouraged language may include terminology such as encouraged, should be done, may be required, could be done, is recommended, is suggested, etc. Encouraged markers can often be found in purpose/objective sections or in design regulations.
- **No**: If markers are found that have no strength, could not be considered required or encouraged, or which the strength is not discernible, please select this option. If a marker is simply found in a use chart or list of uses, select No for strength and Allowed for type of use. Also, if a marker is simply asked to be shown (if it happens to be present) on a site plan/plat, then it gets coded as No strength.

Other Notes: Be sure to code the strength of markers based on contextual clues, such as section titles, language surrounding the marker, definitions, or any other relevant information that might shed some light on the marker in question. When in doubt, consult another coder to get their opinion or to brainstorm other places to search for clues.

3.2 TYPE OF USE RELATIVE TO PROVISION

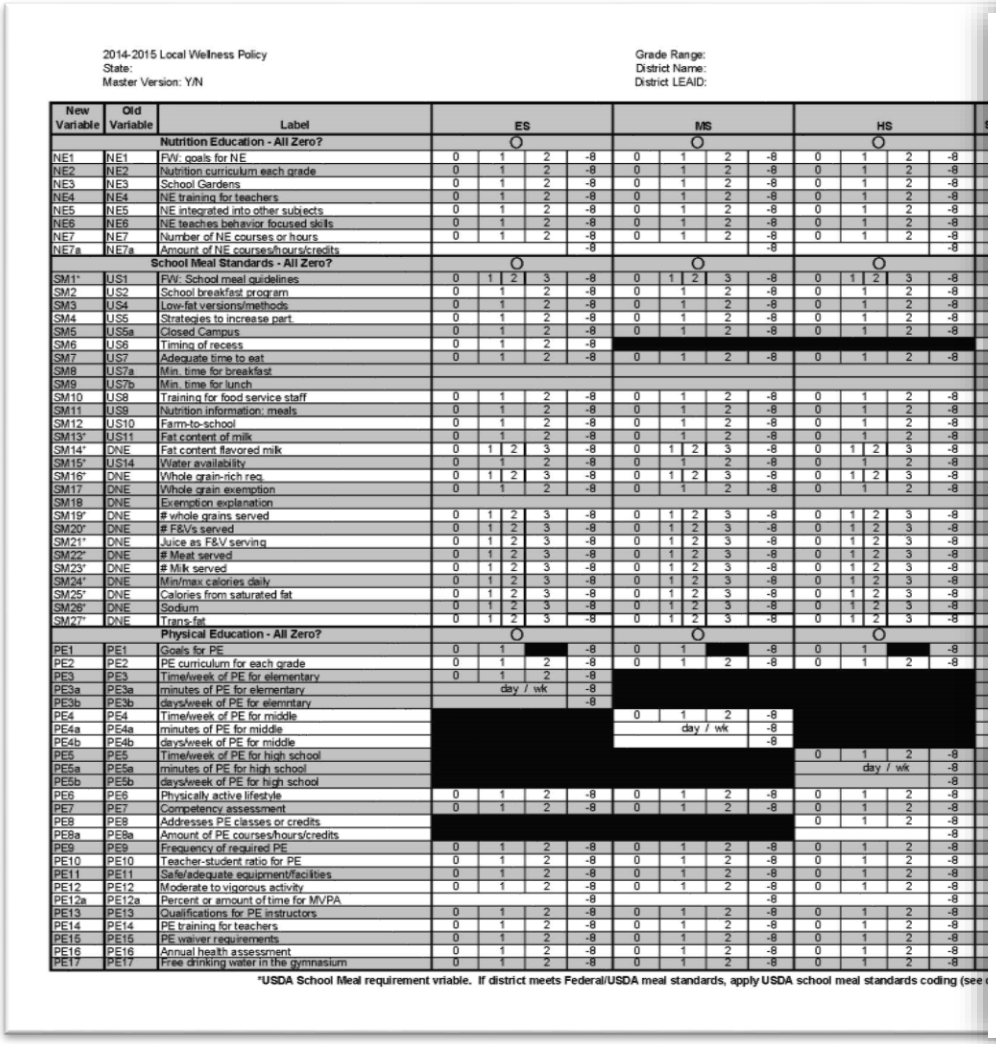
Choose the appropriate type of use related to the provision (select one of the responses):

- **Allowed**: If the provision is classified as a permitted, conditional, or accessory use, select this option. The type of use will usually be found in a use chart/table or list of uses that covers all districts or in a list of permitted uses within the regulations for each district.
  Note: We will very rarely see uses listed for the PUD and General Zoning Provisions categories. Also, be careful to only count uses as allowed that are accessible to the general public.
- **None**: If a type of use is not indicated, please select this option. In other words, this is the default answer unless the marker is found in some type of use chart/table or list of uses.

The following two types of uses only apply to the Mixed Use topic for each of the district categories:

- ***(Prohibited)***: If mixed uses are prohibited in all of the districts within a category, please select this option. They must be explicitly not allowed, either through a use chart/table or list of uses or elsewhere in the regulations, in order to select this option ("Prohibited") as the type of use.
- ***(Mixed)***: If mixed uses are prohibited in at least one district and allowed in at least one other district within the same district category, choose this option. In other words, if "residential units above retail stores" (or something similar) is listed as permitted in the C-1 district, but prohibited in the C-3 district (and no other mixed use development-related uses are listed), choose this type of use option ("Mixed") under the mixed use topic for the commercial districts category. This option will most likely only appear when a use chart is provided that specifically allows and prohibits mixed use development in certain districts.

POLICY SURVEILLANCE: AN ART AND A SCIENCE



2014-2015 Local Wellness Policy
State:
Master Version: Y/N

Grade Range:
District Name:
District LEAID:

New Variable	Old Variable	Label	ES					MS					HS				
		Nutrition Education - All Zero?			○					○					○		
NE1	NE1	FW: goals for NE	0	1	2	-8		0	1	2	-8		0	1	2	-8	
NE2	NE2	Nutrition curriculum each grade	0	1	2	-8		0	1	2	-8		0	1	2	-8	
NE3	NE3	School Gardens	0	1	2	-8		0	1	2	-8		0	1	2	-8	
NE4	NE4	NE training for teachers	0	1	2	-8		0	1	2	-8		0	1	2	-8	
NE5	NE5	NE integrated into other subjects	0	1	2	-8		0	1	2	-8		0	1	2	-8	
NE6	NE6	NE teaches behavior focused skills	0	1	2	-8		0	1	2	-8		0	1	2	-8	
NE7	NE7	Number of NE courses or hours	0	1	2	-8		0	1	2	-8		0	1	2	-8	
NE7a	NE7a	Amount of NE courses/hours/credits				-8					-8					-8	
		School Meal Standards - All Zero?			○					○					○		
SM1*	US1	FW: School meal guidelines	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM2	US2	School breakfast program	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM3	US4	Low-fat versions/methods	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM4	US5	Strategies to increase part.	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM5	US5a	Closed Campus	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM6	US6	Timing of recess	0	1		2	-8										
SM7	US7	Adequate time to eat	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM8	US7a	Min. time for breakfast															
SM9	US7b	Min. time for lunch															
SM10	US8	Training for food service staff	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM11	US9	Nutrition information: meals	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM12	US10	Farm-to-school	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM13*	US11	Fat content of milk	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM14*	DNE	Fat content flavored milk	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM15*	US14	Water availability	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM16*	DNE	Whole grain-rich req.	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM17	DNE	Whole grain exemption	0	1		2	-8	0	1		2	-8	0	1		2	-8
SM18	DNE	Exemption explanation															
SM19*	DNE	# whole grains served	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM20*	DNE	# F&Vs served	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM21*	DNE	Juice as F&V serving	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM22*	DNE	# Meat served	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM23*	DNE	# Milk served	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM24*	DNE	Min/max calories daily	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM25*	DNE	Calories from saturated fat	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM26*	DNE	Sodium	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
SM27*	DNE	Trans-fat	0	1	2	3	-8	0	1	2	3	-8	0	1	2	3	-8
		Physical Education - All Zero?			○					○					○		
PE1	PE1	Goals for PE	0	1			-8	0	1			-8	0	1			-8
PE2	PE2	PE curriculum for each grade	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE3	PE3	Time/week of PE for elementary	0	1		2	-8										
PE3a	PE3a	minutes of PE for elementary		day / wk			-8										
PE3b	PE3b	days/week of PE for elemntary					-8										
PE4	PE4	Time/week of PE for middle						0	1		2	-8					
PE4a	PE4a	minutes of PE for middle							day / wk			-8					
PE4b	PE4b	days/week of PE for middle										-8					
PE5	PE5	Time/week of PE for high school											0	1		2	-8
PE5a	PE5a	minutes of PE for high school													day / wk		-8
PE5b	PE5b	days/week of PE for high school															-8
PE6	PE6	Physically active lifestyle	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE7	PE7	Competency assessment	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE8	PE8	Addresses PE classes or credits											0	1		2	-8
PE8a	PE8a	Amount of PE courses/hours/credits															-8
PE9	PE9	Frequency of required PE	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE10	PE10	Teacher-student ratio for PE	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE11	PE11	Safe/adequate equipment/facilities	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE12	PE12	Moderate to vigorous activity	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE12a	PE12a	Percent or amount of time for MVPA					-8					-8					-8
PE13	PE13	Qualifications for PE instructors	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE14	PE14	PE training for teachers	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE15	PE15	PE waiver requirements	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE16	PE16	Annual health assessment	0	1		2	-8	0	1		2	-8	0	1		2	-8
PE17	PE17	Free drinking water in the gymnasium	0	1		2	-8	0	1		2	-8	0	1		2	-8

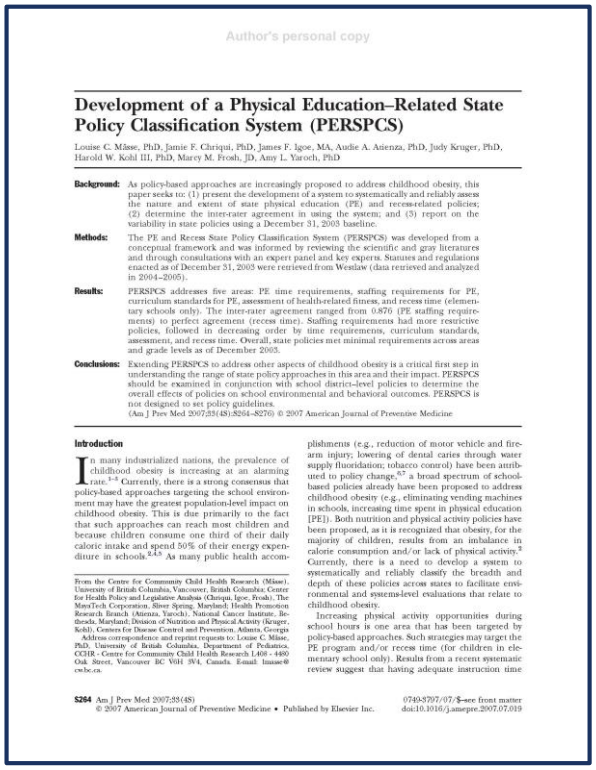
*USDA School Meal requirement vriable. If district meets Federal/USDA meal standards, apply USDA school meal standards coding (see

Section 2. Standards for USDA Child Nutrition Programs and School Meals

# Item	Value	Coding Description
SM13: Fat content of milk* Addresses limiting fat content of unflavored milk served in meals	0	**Either of the following:** • Not mentioned • Whole milk is allowed
	1	**Recommended/Limited** **Any of the following:** • Limiting milk to only low-fat (1%) or non-fat/skim is specified but suggested • Full-fat milk is prohibited, but reduced-fat milk (2%) is allowed • Policy mentions that non-fat/skim, low-fat (1%), or reduced-fat (2%) is "allowed," "offered," "served," or "provided" without specifying "only" • If there is an "allowed" and "not allowed" beverage list and fat free and low-fat milk (1%) appear on the "allowed" list but reduced fat milk (2%) and whole milk do not appear on the "not allowed" list. **Examples:** • *"All milk sold or served through school meals will be reduced fat (2%), low-fat (1%) or fat free milk."*
	2	**Any of the following:** • Meets USDA/IOM: only low-fat and non-fat milk is allowed • Only low-fat (1%) or non-fat/skim milk is allowed (i.e., reduced fat (2%) and full-fat is prohibited) • Policy requires or assures that the district meet federal/USDA school meal regulations/standards • If there is an "allowed" and "not allowed" beverage list, fat free and low-fat milk (1%) must appear on the "allowed" list while reduced fat milk (2%) and whole milk must appear on the "not allowed" list. **Examples:** • *"All milk sold or served through school meals will be either low-fat (1%) or fat free milk."* • *"Only low-fat (1% or less) and fat-free milk will be offered in the school meal programs for all children above the age of two."*
SM14: Fat content of flavored milk*NEW Addresses fat content of flavored milk served in meal	0	Not mentioned
	1	Recommended/limited **Example:** • "Fat free and low fat (1%) flavored milk is served to students." • "Only fat free flavored milk should be served or sold."
	2	Meets USDA: Flavored milk is limited to non-fat **Example:** • "Only fat free flavored milk will be served or sold."
	3	Flavored milk ban **Example:** • "Only non-flavored milk will be served on campus." • "No flavored milk will be served or sold on campus."
SM15: Water availability* Water available free of charge during meal service	0	Not mentioned
	1	Vague and/or suggested **Example:** • "Students and staff should have access to free, safe, and fresh drinking water places where meals are served during meal service."
	2	Meets USDA: Specific and required **Example:** • *"Students and staff will have access to free, safe, and fresh drinking water places where meals are served during meal service."*
SM16: Whole grain-rich requirement*NEW Specifies all grains must be whole grain-rich" Note: This is a change from previous language "at least half of grains are whole grains*	0	Not mentioned
	1	**Any of the following:** • Recommended/limited • Specifies Dietary Guidelines for Americans and no other standards **Example:** • "At least half of the grains served should be whole grains."
	2	Required but less than USDA standards (i.e., fewer than all grains must be whole grain rich) **Example:** • "At least half of the grains served will be whole grains."
	3	Meets USDA: ALL grains must be whole grain-rich (Whole grain rich = Grain product containing ≥50% whole grains by weight or have as 1st ingredient a whole grain)
SM17: Whole grain exemption NEW Exemptions allowed for whole grain-rich requirement? (district level)	0	Not mentioned
	1	Exemptions Allowed **Example:** • "All grains served must be whole grain-rich except for one dessert type item daily."
	2	No Exemptions Allowed
SM18: Exemption explanation NEW	N/A	Fill-in - Whole grain rich exemption: How many/what type?

UIC v.8: Updated: 3/15/2016 for use in SY2014-2015
Source: Institute for Health Research and Policy, University of Illinois at Chicago

SCIENTIFICALLY INFORMED POLICY MEASUREMENT: C.L.A.S.S. NUTRITION AND PHYSICAL ACTIVITY



Development of a Physical Education–Related State Policy Classification System (PERSPCS)

Louise C. Mâsse, PhD, Jamie F. Chriqui, PhD, James F. Igoe, MA, Audie A. Atienza, PhD, Judy Kruger, PhD, Harold W. Kohl III, PhD, Marey M. Frosh, JD, Amy L. Yaroch, PhD

Background: As policy-based approaches are increasingly proposed to address childhood obesity, this paper seeks to: (1) present the development of a system to systematically and reliably assess the nature and extent of state physical education (PE) and recess-related policies; (2) determine the inter-rater agreement in using the system; and (3) report on the variability in state policies using a December 31, 2003 baseline.

Methods: The PE and Recess State Policy Classification System (PERSPCS) was developed from a conceptual framework and was informed by reviewing the scientific and gray literatures and through consultations with an expert panel and key experts. Statutes and regulations enacted as of December 31, 2003 were retrieved from Westlaw (data retrieved and analyzed in 2004–2005).

Results: PERSPCS addresses five areas: PE time requirements, staffing requirements for PE, curriculum standards for PE, assessment of health-related fitness, and recess time (elementary schools only). The inter-rater agreement ranged from 0.870 (PE staffing requirements) to perfect agreement (recess time). Staffing requirements had more restrictive policies, followed in decreasing order by time requirements, curriculum standards, assessment, and recess time. Overall, state policies met minimal requirements across areas and grade levels as of December 2003.

Conclusions: Extending PERSPCS to address other aspects of childhood obesity is a critical first step in understanding the range of state policy approaches in this area and their impact. PERSPCS should be examined in conjunction with school district–level policies to determine the overall effects of policies on school environmental and behavioral outcomes. PERSPCS is not designed to set policy guidelines.

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Introduction

In many industrialized nations, the prevalence of childhood obesity is increasing at an alarming rate.[1–3] Currently, there is a strong consensus that policy-based approaches targeting the school environment may have the greatest population-level impact on childhood obesity. This is due primarily to the fact that such approaches can reach most children and because children consume one third of their daily caloric intake and spend 50% of their energy expenditure in schools.[2,4,5] As many public health accomplishments (e.g., reduction of motor vehicle and firearm injury; lowering of dental caries through water supply fluoridation; tobacco control) have been attributed to policy change,[6,7] a broad spectrum of school-based policies already have been proposed to address childhood obesity (e.g., eliminating vending machines in schools, increasing time spent in physical education [PE]). Both nutrition and physical activity policies have been proposed, as it is recognized that obesity, for the majority of children, results from an imbalance in calorie consumption and/or lack of physical activity.[8] Currently, there is a need to develop a system to systematically and reliably classify the breadth and depth of these policies across states to facilitate environmental and systems-level evaluations that relate to childhood obesity.

Increasing physical activity opportunities during school hours is one area that has been targeted by policy-based approaches. Such strategies may target the PE program and/or recess time (for children in elementary school only). Results from a recent systematic review suggest that having adequate instruction time being considered as an incentive to structure the school environment to support healthy behaviors. As children consume a significant proportion of their daily food intake in schools, the school environment is a prime target for nutrition-related policy initiatives.[1] To date, recommendations for policy changes in schools have been made based on "best-available" evidence and their effectiveness as it relates to school practices is just beginning to be evaluated.

The use of policy strategies to regulate the school nutrition environment is not new. For example, the nutritional content of meals sold as part of the National School Lunch Program (NSLP) and School Breakfast Program (SBP) is regulated at the federal level to conform to the United States Dietary Guidelines.[3] However, federal regulations are limited for foods and beverages sold outside the NSLP and SBP (termed competitive foods).[4,5] Only a portion of the competitive foods, those defined as Foods of Minimal Nutritional Value (FMNV) cannot be sold in school cafeterias or other food service areas during meal times.[6,7] However, it is well documented that students have easy access to

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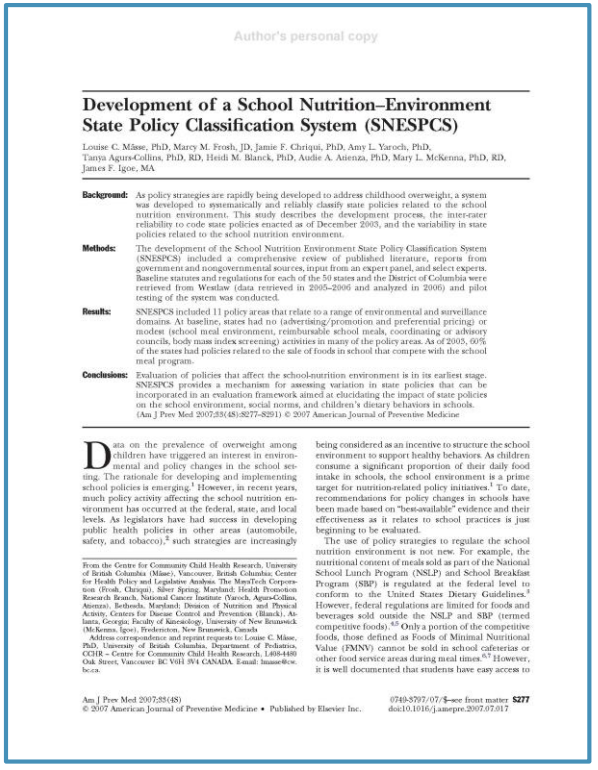

Development of a School Nutrition–Environment State Policy Classification System (SNESPCS)

Louise C. Mâsse, PhD, Marey M. Frosh, JD, Jamie F. Chriqui, PhD, Amy L. Yaroch, PhD, Tanya Agurs-Collins, PhD, RD, Heidi M. Blanck, PhD, Audie A. Atienza, PhD, Mary L. McKenna, PhD, RD, James F. Igoe, MA

Background: As policy strategies are rapidly being developed to address childhood overweight, a system was developed to systematically and reliably classify state policies related to the school nutrition environment. This study describes the development process, the inter-rater reliability to code state policies enacted as of December 2003, and the variability in state policies related to the school nutrition environment.

Methods: The development of the School Nutrition Environment State Policy Classification System (SNESPCS) included a comprehensive review of published literature, reports from government and nongovernmental sources, input from an expert panel, and select experts. Baseline statutes and regulations for each of the 50 states and the District of Columbia were retrieved from Westlaw (data retrieved in 2005–2006 and analyzed in 2006) and pilot testing of the system was conducted.

Results: SNESPCS included 11 policy areas that relate to a range of environmental and surveillance domains. At baseline, states had no (advertising/promotion and preferential pricing) or modest (school meal environment, reimbursable school meals, coordinating or advisory councils, body mass index screening) activities in many of the policy areas. As of 2005, 60% of the states had policies related to the sale of foods in school that compete with the school meal program.

Conclusions: Evaluation of policies that affect the school-nutrition environment is in its earliest stage. SNESPCS provides a mechanism for assessing variation in state policies that can be incorporated in an evaluation framework aimed at elucidating the impact of state policies on the school environment, social norms, and children's dietary behaviors in schools.

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Data on the prevalence of overweight among children have triggered an interest in environmental and policy changes in the school setting. The rationale for developing and implementing school policies is emerging.[1] However, in recent years, much policy activity affecting the school nutrition environment has occurred at the federal, state, and local levels. As legislators have had success in developing public health policies in other areas (automobile, safety, and tobacco),[2] such strategies are increasingly

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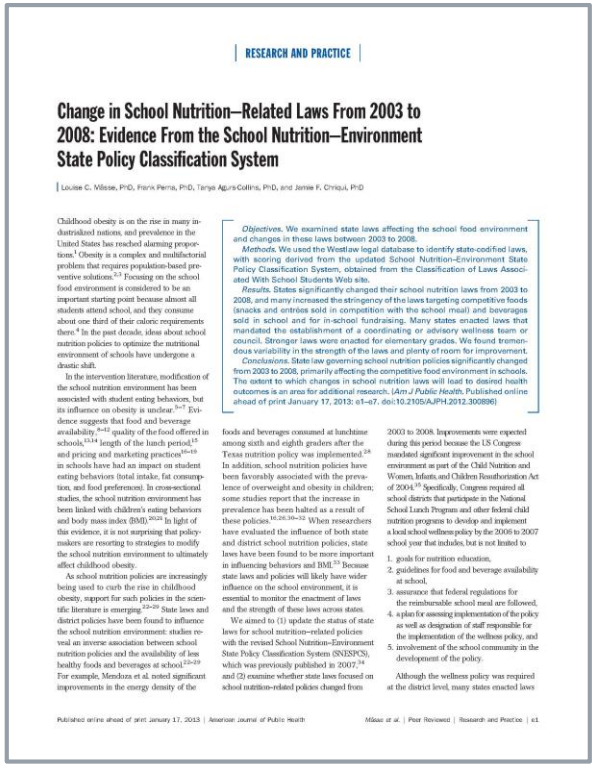


Change in School Nutrition–Related Laws From 2003 to 2008: Evidence From the School Nutrition–Environment State Policy Classification System

Louise C. Mâsse, PhD, Frank Perna, PhD, Tanya Agurs-Collins, PhD, and Jamie F. Chriqui, PhD

Objectives. We examined state laws affecting the school food environment and changes in these laws between 2003 to 2008.

Methods. We used the Westlaw legal database to identify state-codified laws, with scoring derived from the updated School Nutrition–Environment State Policy Classification System, obtained from the Classification of Laws Associated With School Students Web site.

Results. States significantly changed their school nutrition laws from 2003 to 2008, and many increased the stringency of the laws targeting competitive foods (snacks and entrées sold in competition with the school meal) and beverages sold in school and for in-school fundraising. Many states enacted laws that mandated the establishment of a coordinating or advisory wellness team or council. Stronger laws were enacted for elementary grades. We found tremendous variability in the strength of the laws and plenty of room for improvement.

Conclusions. State law governing school nutrition policies significantly changed from 2003 to 2008, primarily affecting the competitive food environment in schools. The extent to which changes in school nutrition laws will lead to desired health outcomes is an area for additional research. (*Am J Public Health.* Published online ahead of print January 17, 2013: e1–e7. doi:10.2105/AJPH.2012.300896)

Childhood obesity is on the rise in many industrialized nations, and prevalence in the United States has reached alarming proportions.[1] Obesity is a complex and multifactorial problem that requires population-based preventive solutions.[2,3] Focusing on the school food environment is considered to be an important starting point because almost all students attend school, and they consume about one third of their caloric requirements there.[4] In the past decade, ideas about school nutrition policies to optimize the nutritional environment of schools have undergone a drastic shift.

In the intervention literature, modification of the school nutrition environment has been associated with student eating behaviors, but its influence on obesity is unclear.[5–7] Evidence suggests that food and beverage availability,[8–12] quality of the food offered in schools,[13,14] length of the lunch period,[15] and pricing and marketing practices[16–18] in schools have had an impact on student eating behaviors (total intake, fat consumption, and food preferences). In cross-sectional studies, the school nutrition environment has been linked with children's eating behaviors and body mass index (BMI).[20,21] In light of this evidence, it is not surprising that policymakers are resorting to strategies to modify the school nutrition environment to ultimately affect childhood obesity.

As school nutrition policies are increasingly being used to curb the rise in childhood obesity, support for such policies in the scientific literature is emerging.[19–28] State laws and district policies have been found to influence the school nutrition environment: studies reveal an inverse association between school nutrition policies and the availability of less healthy foods and beverages at school.[12–19] For example, Mendoza et al. noted significant improvements in the energy density of the foods and beverages consumed at lunchtime among sixth and eighth graders after the Texas nutrition policy was implemented.[28] In addition, school nutrition policies have been favorably associated with the prevalence of overweight and obesity in children; some studies report that the increase in prevalence has been halted as a result of these policies.[16,26,30–32] When researchers have evaluated the influence of both state and district school nutrition policies, state laws have been found to be more important in influencing behaviors and BMI.[19] Because state laws and policies will likely have wider influence on the school environment, it is essential to monitor the enactment of laws and the strength of these laws across states.

We aimed to (1) update the status of state laws for school nutrition–related policies with the revised School Nutrition–Environment State Policy Classification System (SNESPCS), which was previously published in 2007,[24] and (2) examine whether state laws focused on school nutrition–related policies changed from 2003 to 2008. Improvements were expected during this period because the US Congress mandated significant improvement in the school environment as part of the Child Nutrition and Women, Infants, and Children Reauthorization Act of 2004.[33] Specifically, Congress required all school districts that participate in the National School Lunch Program and other federal child nutrition programs to develop and implement a local school wellness policy by the 2006 to 2007 school year that includes, but is not limited to

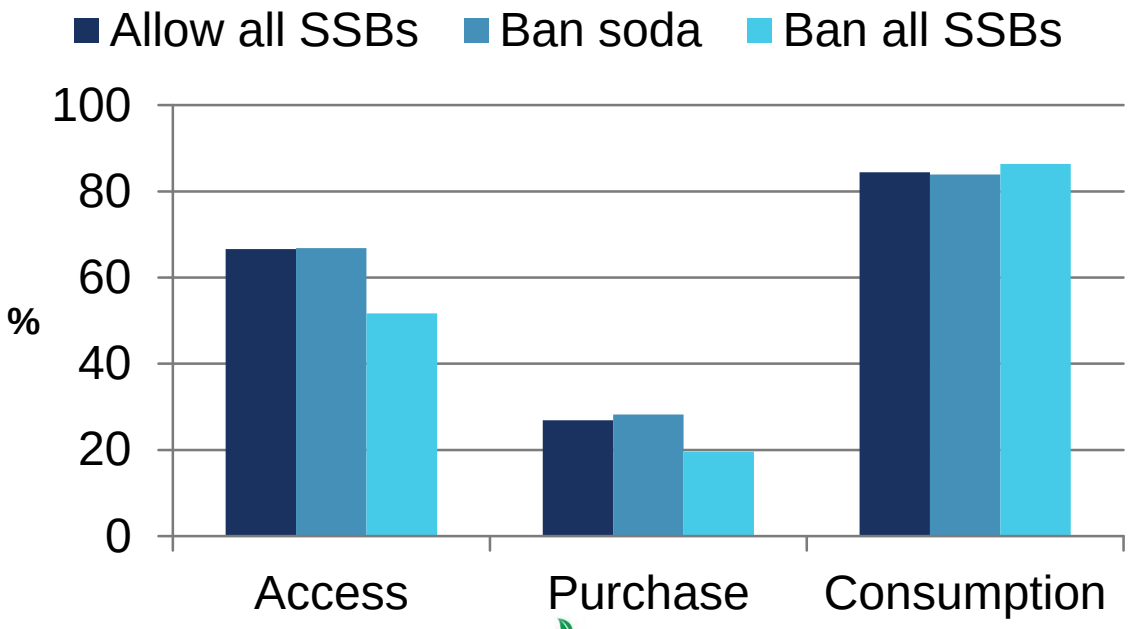
1. goals for nutrition education,
2. guidelines for food and beverage availability at school,
3. assurance that federal regulations for the reimbursable school meal are followed,
4. a plan for assessing implementation of the policy as well as designation of staff responsible for the implementation of the wellness policy, and
5. involvement of the school community in the development of the policy.

Although the wellness policy was required at the district level, many states enacted laws

NOT ALL POLICIES ARE THE SAME…

For example, banning soda alone is not sufficient to reduce sugar-sweetened beverage (SSB) access or purchasing; **must apply to all SSBs**.

State laws that prohibit all SSBs reduce the prevalence of middle school student in-school SSB **access** and **purchasing**, but do not reduce overall **consumption**



Source: Taber, Chriqui, Powell, and Chaloupka, *Arch Ped and Adol Med*, 2012

ADOLESCENTS CONSUME MORE SSBS IF THE STATE LAW ONLY BANS SODA

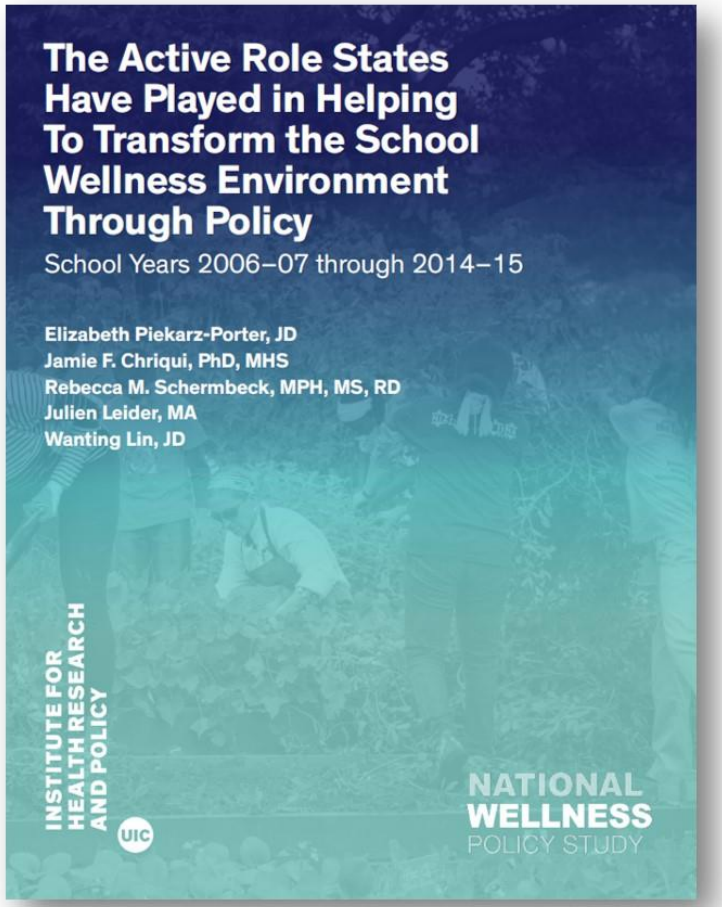
- If state law ONLY bans soda, then HS still sell SSBs in vending machines, and students consumed more sports drinks, energy drinks, and coffee/tea

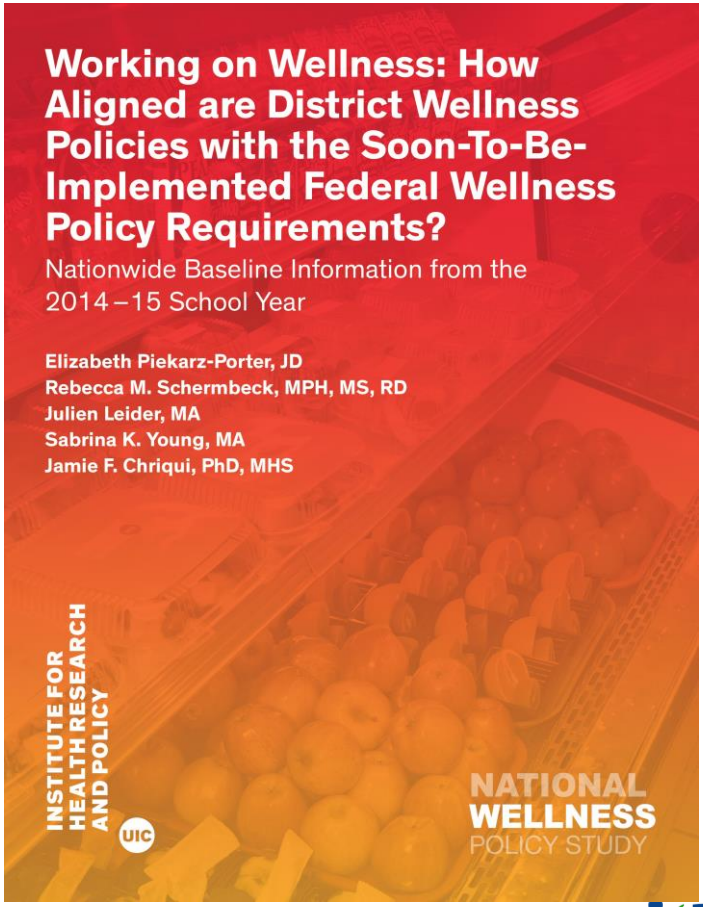
SSB	RR*	95% CI	p
Sports drink	1.25	1.03, 1.45	.001
Energy drink	1.33	1.03, 1.71	.03
Coffee/tea	1.27	1.03, 1.56	.02
Other SSB	1.12	0.94, 1.33	.19

* Ratio of the number of servings per week, relative to students in states that did not ban soda, adjusted for race, sex, grade, state median income, region, and home food access

Taber et al., *IJBNPA 2015*

UNDERSTANDING POLICY CONTEXT





NOPREN Nutrition & Obesity Network POLICY RESEARCH + EVALUATION

PAPRN+ PHYSICAL ACTIVITY POLICY • RESEARCH • NETWORK • PLUS

UNDERSTAND THE NEED FOR CONCEPTUAL MATCHES BETWEEN POLICY AND EXPOSURE/OUTCOME

NEED TO ENSURE "CONCEPTUAL MATCHES"* BETWEEN POLICY, EXPOSURE, AND OUTCOMES

Source: https://phil.cdc.gov/Details.aspx?pid=13653
Amanda Mills

Source: https://phil.cdc.gov/Details.aspx?pid=14403
Deborah Cartagena

And NOT

Source: https://phil.cdc.gov/Details.aspx?pid=13622
Amanda Mills

*See Ding & Gebel, Health & Place, 2012

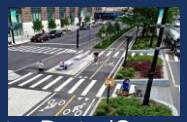
CONCEPTUAL "MIS"MATCH AND MATCH EXAMPLES

Zoning for Passive Recreation→ Activity Outcomes

Pedbikeimages.com/Dan Burden

- % Workers taking active travel to work (Coeff=0.50, 95% CI: -0.41, 1.42) **versus**
- Reduced rates of adult inactivity (Coeff=-0.12, 95% CI: -0.15, -0.08)

Zoning for Bike Lanes→ Built Env. Measures



Center for Active Design/Queens Plaza, New York City

- Google Street View (GSV) data on playgrounds/active recreation spaces (AOR: 1.01, 95% CI: 0.73, 1.39) **versus**
- GSV data on bike lanes (AOR=2.22, 95% CI: 1.74, 2.84)

District Wellness Policy Restrictions on **Calories** in A la Carte Snacks→Food Purchasing Standards

- District-level food purchasing standards governing **total fats** (AOR=1.71, 95% CI: 0.42, 7.00) **versus**
- District-level food purchasing standards governing **total calories** (AOR=4.48, 95% CI: 1.08, 18.64)

Research Center

NOPREN Nutrition & Obesity Network POLICY RESEARCH + EVALUATION

PAPRN+ PHYSICAL ACTIVITY POLICY • RESEARCH • NETWORK • PLUS

STUDY DESIGN CONSIDERATIONS

EXAMPLES OF STUDY DESIGNS USED WHEN STUDYING NATURAL EXPERIMENTS

- Pre/post with comparison jurisdictions
  - Helps to have multiple comparisons
  - Replication across jurisdictions with policy change
- Time series
- **Difference-in-difference**
- Regression discontinuity

Source: Wagenaar & Komro, 2013

OTHER DESIGN CONSIDERATIONS WHEN STUDYING THE IMPLEMENTATION/IMPACT OF LAW AND POLICY

- Time lag for implementation
  - Need to understand likely implementation timeline
    - E.g., Taxes vs. infrastructure change
- Understand the effective date of the policy change
  - For policy surveillance studies, need to identify a standard reference date
- Whether outcomes will likely vary over time
- Need for consistent measurement of outcomes over time (at the same time points)
  - E.g., beverage purchasing is seasonal so may not need to do weekly but definitely monthly or by season to account for seasonal effects

Source: Wagenaar & Komro, 2013

DATA CONSIDERATIONS

PRIMARY REASONS WHY DIFFERENT POLICY SYSTEMS REPORT DIFFERENT INFORMATION

- Underlying system purpose
- Policy analysis and reporting methodology(ies)
- "Sources" of policy information
- Level of experience/expertise with legal/policy research and analysis and subject matter
- Primary intended "aim"/use of the system
- Resources

CHALLENGES WITH MEASURING POLICY AND ON-THE-GROUND OUTCOMES

- Beyond the complexity of how and what to "measure"
- Validity and reliability of measurement
  - Content validity
  - Inter-rater/coder reliability/validity
  - Developing scores from "big" and/or complex data sets
  - Comparability (or lack thereof) of measures across studies to allow for meaningful comparisons

CHALLENGES: GEOCODES FOR LINKING TO OUTCOME DATA

- Geocodes in large, national data sets
  - Often county level or larger geographies
    - Data may be individual level but for linking to policy and environmental exposures, often restricted to linking on county level geocodes which makes the conceptual match difficult
      - Example with zoning study
        - Zoning data for all jurisdictions located in largest 496 US counties. BRFSS geocode was restricted to county-level identifiers in the public use files up to and including 2012; starting in 2013, identifiers removed from public use files

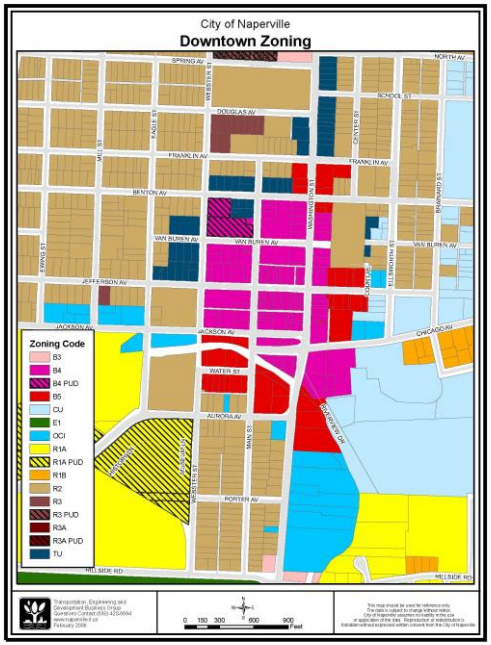
OTHER CONSIDERATIONS

- **Do it right!**
  - Policy data take time to compile correctly; build that into your study timeline and design
  - Historical policies hard to obtain depending on jurisdiction and type of policy
  - Requires expertise in both methods and content

- **Exposure**
  - How do we know whether people are actually exposed to the law/policy?

- **Endogeneity**
  - Need for longitudinal data on exposures and persons
  - Need to account for self-selection

- **Implementation/Impact Lags**
  - Need to allow time for policy implementation
  - Lag varies by policy type and infrastructure changes required "on the ground"
  - Lag from policy to environment to behavioral change/outcomes



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QUESTIONS?