Appendix A: Methods

Sample Selection

Our sampling strategy aimed to identify a stratified, random sample of 480 public school districts and charter LEA within 20 states strategically selected for this study. These 20 states were chosen to reflect the four largest states by population size (California, Florida, New York, and Texas); states with the highest (Mississippi and South Carolina) and lowest (New Jersey and Oregon) childhood obesity rates; states with the highest (Idaho and Nebraska) and lowest (District of Columbia and Rhode Island) bullying rates; states with the highest (Alaska and Washington) and lowest (Indiana and North Dakota) chronic absenteeism rates; and four strategically selected states (Colorado, Michigan, Missouri, and New Mexico) identified through our partners on the Robert Wood Johnson Foundation's Together for Healthy and Successful Schools Initiative. If a state that was first selected in one category (e.g., population size) was also eligible for selection in a different category (e.g., obesity), we moved to the next state in that group so as to select 20 unique states.

Once the states were selected, we then went about the process of selecting the 480 districts and charter LEAs across the 20 states. The district selection process used data from the 2014-15 Public Elementary/Secondary School Universe Survey available from the Common Core of Data (CCD) database. The CCD's "Directory," "Membership," "Geographic Data," and "Lunch Program Eligibility" data files were used for the selection of districts.[1]

Only public and charter LEAs were considered when selecting districts. These LEAs were separated by LEA type (public or charter) and then split into sextiles by the number of students within each LEA for each LEA type. The bottom sextile of LEAs for each LEA type (those with the smallest number of students) were excluded when selecting LEAs. Policies are often not readily available (e.g. offered online) for the smallest LEAs, so *a priori* exclusion of these districts was applied.

After identifying this initial sample, we derived the following variables to separate districts into strata: family income level, student diversity, and urbanicity.

- **Family income level.** Family income level was measured using data on the total number of students eligible for free or reduced-price lunch (FRL) in an LEA from the CCD's "Lunch Program Eligibility" file and dividing that number by the total number of students in an LEA from the CCD's "Membership" file to generate the percentage of FRL-eligible students in each LEA. A binary variable was then created by state (1 = Low Income, 0 = High Income) using the mean LEA percentage of FRL eligibility within each state as the cutoff point between the two categories.
- **Student diversity.** Diversity was measured by determining Simpson's Diversity Index[2] for each LEA using data on the number of students within each racial/ethnic category, as well as the total number of students in an LEA, from the CCD's "Membership" file, and then creating a binary variable by state (1 = High Diversity, 0 = Low Diversity) using the mean LEA value of the Diversity Index within each state as the cutoff point between the two categories.
- **Urbanicity.** Urbanicity was measured using data from the CCD's "Geographic Data" file on whether an LEA was in an urban or rural geographic area, and a binary variable was created (1 = Urban, 0 = Rural) using this information.

The LEAs for each of the strategically selected states except for the District of Columbia (DC) were separated into eight strata based on an LEA's family income level, student diversity, and urbanicity. LEAs were then randomly sampled so that there would be three LEAs in each stratum within each state and 24 LEAs in total for each state. LEAs were also selected based on the ratio of charter LEAs to public LEAs within each stratum of each state so that the percentage of charter LEAs sampled for each state would be

proportionate to percentage of charter LEAs within each state (out of all public and charter LEAs). Charter LEAs were given higher weighting when sampling to ensure that enough charter LEAs would be drawn to reach proportionality with the state. For each state, the percentage of charter LEAs in the selected sample was within 6 percentage points of the percentage of charter LEAs in that state.

The DC sample was drawn separately since DC is entirely urban and because there is only one public LEA in DC. Therefore, LEAs in DC were separated into four strata based on the family income level and student diversity of each LEA. Additionally, the public LEA was automatically included in the sample. The charter LEAs were randomly sampled so that there were six LEAs in each of the four strata, including the public LEA.

Finally, once the LEAs were randomly selected, some LEAs had to be resampled because 1) in certain strata for some states, there were not enough LEAs to sample from; 2) LEAs were sampled that only offered pre-K or adult education; or 3) the grade-level distribution of the selected LEAs in some states was not proportionate to the state distribution. The following processes were used for resampling LEAs based on each of these issues:

- **Lack of LEAs in strata.** For Alaska, Florida, Nebraska, Rhode Island, South Carolina, and North Dakota, there were fewer than three LEAs available for sampling in certain strata, so LEAs were sampled from other strata with the aim of drawing from each of the remaining strata equally (e.g., one from each of the remaining strata). If more or fewer LEAs needed to be sampled than the number of strata that could be sampled from, priority was first given to strata with the most LEAs. LEAs were resampled until there were 24 in each state.
- **Wrong grades in LEA.** Three charter LEAs needed to be resampled for DC because they did not offer education for grades K-12. Two of these LEAs only offered pre-K, and one only offered adult education.
- **Disproportionate grade-level distribution.** If the grade-level distribution of selected LEAs for a state was not proportionate to the state's distribution, LEAs were randomly selected that offered the grade levels necessary for the sample to conform to the state's grade-level distribution. These newly selected LEAs replaced those that most heavily biased the sample's grade-level distribution. For charter LEAs, LEAs were resampled for states if there was a 15 percentage-point difference between the sample distribution of grade levels and the state distribution for more than one grade within each level of schooling (grades 1-5, grades 6-8, and grades 9-12). California was an exception, since only one charter LEA was sampled. Charter LEAs were resampled in DC, Idaho, Indiana, Michigan, Missouri, New Jersey, New Mexico, Rhode Island, and Texas. For public LEAs, LEAs were resampled for states if there was a 7.5 percentage-point difference between the sample distribution of grade levels and the state distribution for more than one grade within each level of schooling (grades 1-5, grades 6-8, and grades 9-12). Public LEAs were resampled in New Jersey and Rhode Island. The percentage-point difference threshold required for resampling was lower for public LEAs than charter LEAs because there is more uniformity in the grade levels offered by public LEAs.

Policy Collection

LEA policies were collected for the sampled public school districts and charter LEAs. “LEA policies” was defined to include board-adopted policies, administrative regulations, codes of conduct, student handbooks, charters (where applicable), and state laws and physical/health education standards that were incorporated by reference.

The research team collected policies via internet research with telephone and email follow-up. Forty-eight districts either declined to participate or did not respond to repeated requests for documents. Policies were deemed relevant if they were in effect as of the start of the 2017-18 school year. Ultimately, 432 LEAs’ policies (90%) were collected (368 public school districts, 92%; 64 charter LEAs, 79%). Table A.1 summarizes the policy collection by state, LEA type, and by policy type.

Table A.1. Summary of Policy Collection by State, LEA Type, and Policy Type

State Name	# LEAs for Which Policies Were Collected		Total # of Policies (Handbooks) Analyzed		Average # Policies (Handbooks) Collected Across LEAs within State	
	Public LEAs (# missing)	Charter LEAs (# missing)	Public LEAs Policy (Handbook) n	Charter LEAs Policy (Handbook) n	Public LEAs Policy (Handbook) n	Charter LEAs Policy (Handbook) n
Alaska	24 (0)	0 (0)	2599 (35)	0 (0)	108.3 (1.5)	0.0 (0.0)
California	18 (5)	1 (0)	2682 (1)	148 (0)	149.0 (0.1)	148.0 (0.0)
Colorado	19 (4)	1 (0)	1519 (1)	16 (0)	79.9 (0.1)	16.0 (0.0)
District of Columbia	1 (0)	22 (1)	1 (0)	27 (22)	1.0 (0.0)	1.2 (1.0)
Florida	24 (0)	0 (0)	854 (3)	0 (0)	35.6 (0.1)	0.0 (0.0)
Idaho	17 (0)	7 (0)	1083 (50)	53 (4)	63.7 (2.9)	7.6 (0.6)
Indiana	14 (6)	3 (1)	1410 (32)	0 (3)	100.7 (2.3)	0.0 (1.0)
Michigan	15 (1)	5 (3)	1790 (21)	10 (5)	119.3 (1.4)	2.0 (1.0)
Mississippi	21 (3)	0 (0)	1636 (8)	0 (0)	77.9 (0.4)	0.0 (0.0)
Missouri	21 (0)	2 (1)	1819 (40)	2 (1)	86.6 (1.9)	1.0 (0.5)
Nebraska	22 (2)	0 (0)	1113 (48)	0 (0)	50.6 (2.2)	0.0 (0.0)
New Jersey	19 (1)	2 (2)	1376 (31)	67 (1)	72.4 (1.6)	33.5 (0.5)
New Mexico	15 (0)	6 (3)	1014 (14)	7 (8)	67.6 (0.9)	1.2 (1.3)
New York	17 (1)	2 (4)	1151 (11)	1 (6)	67.7 (0.6)	0.5 (3.0)
North Dakota	17 (7)	0 (0)	933 (19)	0 (0)	54.9 (1.1)	0.0 (0.0)
Oregon	21 (0)	3 (0)	2448 (24)	273 (2)	116.6 (1.1)	91.0 (0.7)
Rhode Island	17 (1)	6 (0)	501 (0)	23 (5)	29.5 (0.0)	3.8 (0.8)
South Carolina	23 (0)	0 (1)	1922 (20)	0 (0)	83.6 (0.9)	0.0 (0.0)
Texas	19 (0)	4 (1)	633 (3)	36 (4)	33.3 (0.2)	9.0 (1.0)
Washington	24 (0)	0 (0)	2089 (44)	0 (0)	87.0 (1.8)	0.0 (0.0)
Totals	**368 (31)**	**64 (17)**	**28573 (405)**	**663 (61)**	**77.6 (1.1)**	**10.4 (1.0)**

Policy Coding

District and charter policies were coded by teams of trained coders using the qualitative coding software Dedoose, and the coding scheme presented in Coding Appendix. The coded items were based on a subset of priority variables from the coding scheme that was developed by Child Trends, the University of Illinois at Chicago, and EMT Associates, which is presented in our companion state law report and included in the National Association of State Boards of Education (NASBE) State Policy Database on School Health.

Within each state, two public school districts were double-coded and then reviewed by a master coder for consistency. Since many school districts within the same state adopt similar versions of a model policy (e.g., state school board model), any applicable codes were applied by the first coder to all such policies and districts. Any unique (non-model) policies and handbooks and all charter LEA policies were double-coded. Embedded language from state law was applied as appropriate per the district policy text. Coding was conducted on a state-by-state basis to ensure within-state consistency.

Analysis of Coded Policy Data

Once coding was completed, district weights for public LEAs were generated by state and sampling stratum so as to weight the public LEAs in the final sample to reflect the total number of public LEAs in each state and stratum. In the case of North Dakota, no rural, high-diversity, low-income public LEAs remained in the final sample, so it was not possible to represent that stratum, which included 16 of 83 (19%) public LEAs in the state. With that exception, the weighted public LEA data are representative of public LEAs in each of the 20 states in our sample, excluding LEAs in the bottom sextile of student enrollment. Due to their smaller sample size, it was not possible to generate state-representative estimates for charter LEAs, and weights were only generated for public LEAs.

For the weighted district data, we determined the percentage of the topics addressed, on average, across the districts within each state as well as overall, for all districts studied across the 20 states. The district data

for each state and overall were assigned to one of four categories based on the percentage of topics addressed by the districts (within a state or across the 20 states): none, low, moderate, or comprehensive (see Table A.2 for details on cut-points within each domain and category). The data were not weighted for the charter LEA data. Like the district data, the charter data are presented as the percentage of topics addressed. Notably, this assessment does not speak to the prescriptiveness of LEA policies; policies that include mandates or merely encourage a focus within a given topic area counted equally toward the extent of focus on a given topic within each state.

Table A.2. Cut-points for categorization of district policy data by domain

Domain	Low	Moderate	Comprehensive
Health Education	< 39%	39% to < 72%	≥ 72%
Physical Education and Physical Activity	< 42%	42% to < 75%	≥ 75%
Nutrition Environment and Services	< 36%	36% to < 71%	≥ 71%
Health Services	< 38%	38% to < 75%	≥ 75%
Counseling, Psychological, and Social Services	< 40%	40% to < 80%	≥ 80%
Social and Emotional Climate	< 35%	35% to < 70%	≥ 70%
Physical Environment	< 39%	39% to < 72%	≥ 72%
Employee Wellness	< 38%	38% to < 75%	≥ 75%
Family Engagement	< 44%	44% to < 78%	≥ 78%
Community Involvement	< 40%	40% to < 80%	≥ 80%
WSCC Overall	< 50%	50% to < 83%	≥ 83%

Districts in each state were then rated on the breadth and depth of their coverage of all domains (except WSCC overall): **deep** (six or more comprehensive domains), **broad** (eight or more moderate or comprehensive domains), **limited** (three to five low/none domains), or **weak** (at least six low/none domains).

For comparative purposes, we also examined and present a comparison of the district data with comparable state statutory and regulatory law data for the same domains and sub-topics for each of the 20 states. The same categorizations of none, low, moderate, and comprehensive were used to present the state data for purposes of this report.

Due to not all grade levels being present in all public school districts and charter LEAs, analyses of grade-specific variables were based on 350-363 public school districts and 34-51 charter LEAs, rather than the full samples of 368 public school districts.

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[1] National Center for Education Statistics. Public Elementary/Secondary School Universe Survey Data. 2014-15. Retrieved from: https://nces.ed.gov/ccd/pubschuniv.asp.

[2] McLaughlin, J.E., McLaughlin, G.W., McLaughlin, J.S., White, C.Y. (2016). Using Simpson's diversity index to examine multidimensional models of diversity in health professions education. International Journal of Medical Education, 7, 1-5. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4715903/.