



Development and implementation of a local government survey to measure community supports for healthy eating and active living

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ABSTRACT

The ability to make healthy choices is influenced by where one lives, works, shops, and plays. Locally enacted policies and standards can influence these surroundings but little is known about the prevalence of such policies and standards that support healthier behaviors. In this paper, we describe the development of a survey questionnaire designed to capture local level policy supports for healthy eating and active living and findings and lessons learned from a 2012 pilot in two states, Minnesota and California, including respondent burden, survey sampling and administration methods, and survey item feasibility issues. A 38-item, web-based, self-administered survey and sampling frame were developed to assess the prevalence of 22 types of healthy eating and active living policies in a representative sample of local governments in the two states. The majority of respondents indicated the survey required minimal effort to complete with half taking <20 min to complete the survey. A non-response follow-up plan including emails and phone calls was required to achieve a 68% response rate (versus a 37% response rate for email only reminders). Local governments with larger residential populations reported having healthy eating and active living policies and standards more often than smaller governments. Policies that support active living were more common than those that support healthy eating and varied within the two states. The methods we developed are a feasible data collection tool for estimating the prevalence of municipal healthy eating and active living policies and standards at the state and national level.

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1. Introduction

In the United States, poor diet and physical inactivity are leading contributors to death and health loss (US Burden of Disease Collaborators, 2013). Over 75% of people do not consume adequate amounts of healthier foods such as fruits, vegetables, whole grains, and low fat dairy and 86% exceed fat, sugar, and salt intake recommendations (National Cancer Institute, Division of Cancer Control and Population Sciences, Applied Research Program, 2015; U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010). In 2013, about a third of adults were inactive and 79% did not meet aerobic and muscle-strengthening physical activity guidelines (HP2020 Objective Data by Topic Area, 2017a, 2017b).

Changing the places where people live to support healthy choices may be needed to improve diet and physical activity (Khan et al., 2009; Story et al., 2008; Frieden, 2010). Over 80% of the U.S. population

lives in incorporated cities and towns with at least 2500 people (urban areas) (U.S. Census Bureau, 2013a) and expert bodies suggest that policies and standards enacted by local governments that govern these areas may be one way to support and promote healthy choices (Khan et al., 2009; Institute of Medicine and National Research Council, 2009). The remainder of the population lives in areas not governed by their own local municipal corporation, but may be administered as part of a township, parish, borough, county, city, canton, state, province, or tribal government. Although strategies that local governments can use to support healthier lifestyles have been recommended (Khan et al., 2009; Institute of Medicine and National Research Council, 2009) and the Centers for Disease Control and Prevention funds state and local health public actions across the U.S. to support healthy eating and active living, little is known about how prevalent policy supports are and no systems are available to systematically assess how changes occur over time. To better understand local policies and standards that support healthy eating and active living, we developed a survey of local governments, the Community Based Study of Supports for Healthy Eating and Active Living (CBSS).

CBSS was designed to assess the feasibility of collecting state and nationally representative data on local government policies and

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standards that support healthy eating and active living among residents. Policies and standards were defined in the survey as any written codes or standards, including regulations, ordinances, organizational policies, resolutions, and formal rules. Local governments include cities, boroughs, towns, and villages as defined by the U.S. Census Bureau (U.S. Census Bureau, 2016). We conducted a pilot study to address key methodological issues including 1) survey applicability to local governments of various population sizes; 2) response burden; 3) feasibility of collecting state and nationally representative data; and 4) impact of study recruitment methods and nonresponse follow-up on response rates. In this paper, we describe the development of the survey questionnaire, survey sample design and administration, findings, and lessons learned from a 2012 pilot in two states: Minnesota and California. Results from this pilot informed the development of a protocol used to conduct a national study of how supportive communities are of healthy eating and active living across the U.S. (Onufrak et al., 2016; Carlson et al., 2016; Omura et al., 2017) and can be used in future state level follow up studies.

2. Methods

2.1. Development of a web-based survey questionnaire

A self-administered survey was developed based on prior literature reviews, (Khan et al., 2009; Institute of Medicine and National Research Council, 2009; Centers for Disease Control and Prevention, 2009; Freudenberg et al., 2010) scans of existing national policy databases, input from state health departments grantees (Centers for Disease Control and Prevention, 2016), and input from an expert panel of nine individuals. Experts were selected from 8 state and local governments and academic institutions due to their expertise in municipal policy, food and nutrition, physical activity, built environment, local government, city management, urban planning, and public health based on publication and work history with state and local health departments and national organizations such as the American Planning Association and National Association of County and City Health Officials. Many survey items were included in previous Institute of Medicine and CDC reports on strategies local governments can use to support healthy eating and active living (Khan et al., 2009; Institute of Medicine and National Research Council, 2009; Centers for Disease Control and Prevention, 2009). Survey item topics were selected based on the ability of a local government to implement the indicator, the degree to which the indicator is applicable across local governments of different sizes and geographic areas, the potential for seeing change in prevalence over time, and the feasibility of the collection of the indicator. Items were cognitively tested among city managers, planners, and individuals with similar job titles and duties. Initial burden testing estimated the instrument would require 60 min to complete.

The two-part 38-item survey inquired about 1) policies and standards local governments can implement to influence healthy eating and physical activity and 2) respondents' experiences in completing the survey (see Appendix A). In the first section, respondents were asked whether their local government had 22 types of policies and standards (yes/no) divided into three sub-sections: community-wide planning documents ($n = 3$ questions), physical activity ($n = 8$), and healthy eating ($n = 11$ questions). Additional follow-up questions were asked as needed ($n = 10$ questions). Response options included "I tried and could not obtain this information", or "I do not understand this question" to assess item burden and feasibility in post-hoc analyses. Respondents' experiences in completing the pilot survey was assessed via six items that asked about the types of local government staff who helped complete the survey, the level of effort and time required, and the potential utility of the findings from the survey.

The three questions on community-wide planning documents include whether the local government has 1) a comprehensive/general plan or 2) master plans related to health. The third question asks

whether the local government has selected nutrition and physical activity related objectives in their planning documents among those with comprehensive or master plans. The physical activity section included whether the local government has: bike/pedestrian friendly design policies; a formal Complete Streets policy; a policy to install bicycle racks at public facilities; pedestrian friendly policies for new or retrofit development; policies or budget provisions to support activity in parks and recreation areas; a joint-use agreement to allow public use of school recreational facilities; a planning/zoning commission; and a bicycle and/or pedestrian advisory committee. In the healthy eating section, policies included whether the local government has pricing incentives to promote healthier food and beverage purchases, nutrition standards for foods sold in government buildings or worksites, incentives to encourage the availability of healthier foods at food retailers, policies related to transportation to food retailers, funding for Electronic Benefits Transfer (EBT) in farmers' markets, and a food policy council. Breastfeeding friendly policies were also included in this section.

2.2. Pilot survey sampling and administration methods

State health department grantees were solicited to participate in the survey (Centers for Disease Control and Prevention, 2016). California and Minnesota were selected based on their prior experience implementing policies and standards that support healthy eating and active living, their diversity of local governments in the state (e.g. various population sizes, rural vs. urban areas, townships versus local governments), and geographic diversity. The California and Minnesota state health departments provided letters of support for the survey.

A sample of 200 local governments from each pilot state were selected using the 2007 Census of Governments (U.S. Census Bureau, 2013b) for a total of 400 governments. This sample size was determined to account for expected response rates and yield 95% confidence intervals within ± 5 percentage points for all survey wide estimates. The sample size calculation assumed a design effect of 2.0 or less. In Minnesota, townships were excluded from the frame to avoid double-counting populations covered geographically by both a municipal and township government. Local governments within each state were classified into 5 strata based on total population per the Census of Governments and sampled with unequal probabilities of selection. Stratum 1 local governments included the most populated jurisdictions in the state and were selected with certainty into the sample to capture policies that impact the largest population centers. Sampling rates decreased with each successive stratum. Local governments in stratum 2 had a probability of selection of 0.67. Local governments in strata 3 and 4 had selection probabilities of 0.33, and 0.25, respectively. Additional local governments were allocated to stratum 5 to obtain a total sample size of 200. Simple random sampling was used to select local governments in strata 2–5.

The survey was conducted August 24th to November 2, 2012. City managers, planners, and administrators were identified as the best point of contact in the local government to identify healthy eating and active living policies and standards based on literature reviews and expert opinion. Each local government city manager, planner, or administrator was mailed a survey invitation and encouraged to seek input from other staff as needed such as representatives from parks and recreation, tax office, procurement, or transportation. Contact information for the target respondent was obtained from the Census of Governments and was verified via internet searches and contact calls and corrected as needed before sending the invitation packet. Sampled municipalities were each assigned a unique identifier which provided the key informant with security-enabled access to the web-based survey data collection system where they could complete and submit the questionnaire. The questionnaire could also be printed and mailed.

A split sample design with different follow-up intensity was used to determine the amount of follow up needed to achieve a 60–70% response rate. Half of the target respondents were assigned to the e-

mail reminder only arm and were emailed every two weeks. Two email reminders a week were sent for the final two weeks, spaced three days apart. The other half of the sample was assigned to the phone call and email reminder arm. This group received telephone calls every two weeks in addition to the emails as described above. Non-respondents received an additional 3–9 call attempts over the final 10 day period to attempt to convert a nonresponse into a completed survey.

2.3. Analyses

We estimated mean time required to complete the survey and the number and type of respondents that contributed to the survey. We also analyzed the level of effort required to complete the survey and prevalence of respondents skipping 1 or more questions and selecting “I tried and could not obtain this information” or “I do not understand the question” for 1 or more questions. Each of these indicators was also calculated by pilot state, by municipal population size (<1000; 1000–4999; 5000–24,999; and ≥25,000), and by survey response arm.

Next, we calculated the prevalence of policies by state and population size. A yes response to any of the 22 types of policies and standards was counted as having the policy. Local governments with missing data were included in all analyses and counted as not having policies (91% answered all questions and 3% skipped only one item). Several policies were collapsed into broader categories to facilitate interpretation including three policies related to incentives for healthy food retailers, two policies regarding transportation to healthier food retailers, and two policies related to breastfeeding. Differences between states, survey arms, and population size categories were examined using student *t*-tests or anova for means and chi-square tests for percentages. SAS 9.3 (SAS Institute Inc., Cary, NC) was used to weight estimates for nonresponse and account for the sampling design. This data collection was deemed exempt from institutional review because of the public nature of the data being collected.

3. Results

The overall response rate for the study was 53% (N = 210 local governments; CA 48%, MN 57%). Respondents in the email and phone call follow up response arm achieved the target response rate of 60–70% (68%); respondents in the email only reminders arm had a significantly lower response rate (37%). Ninety-eight percent of local governments completed the web-based version of the survey (data not shown). The

average time to complete the survey was 31 min (standard error: 2), almost half of the estimated 60 min time burden. (Table 1). Smaller local governments, or communities, (<25,000) completed the survey in 22–29 min on average while larger communities took 43 min to complete the survey. The majority of respondents (60%) indicated that the survey only required one person to complete it although over half of the largest communities required >2 people to complete the survey. About 56% of respondents were city managers, planners, or administrators and 16% were city clerks. About half of respondents indicated that the survey required minimal effort to complete with no significant variation by community population size. Local governments in California reported more people and a greater level of effort were required to complete the survey than governments in Minnesota. Few respondents skipped questions (9%) or indicated that they did not understand questions (5%). A larger percentage of respondents selected “I tried and could not obtain this information” for one or more questions (19%). The greatest number of respondents selected this option for formal Complete Streets policy (7%) and breastfeeding policies (5%–9%) (data not shown). The response rate was significantly higher for local governments that received regular phone call and email reminders versus email only reminders (68% versus 37% respectively, P-value < 0.001, Table 2) but other indicators were similar between follow up arms.

Most local governments had community plans or planning objectives related to healthy eating and active living (78%–86%, Table 3). Among those with planning documents (n = 188), 86% had nutrition and physical activity related objectives in their plans. Ninety-five percent of local governments had at least one of the 8 surveyed policies that support physical activity and 61% had 4 or more policies that support physical activity. Each of the policies that support physical activity were reported by more than half of local governments (55%–87%) with the exception of a formal Complete Streets policy and written requirements to install bicycle racks at public facilities (21% and 27% respectively). Policies that support healthy eating were less prevalent than policies to support active living (0%–38% had policies). Eighty percent of communities had at least one of the 11 healthy eating policies asked about in the survey but only a quarter had 4 or more policies. The exception was incentives for healthier food retailers and breastfeeding friendly policies, 62% and 54%, respectively, had these policies to support healthy eating.

In general, larger local governments were more likely to have policies that support healthy eating and active living than smaller local governments (Table 3). For example, 38% of local governments

Table 1
Survey administration findings by pilot state (California and Minnesota), and municipal population size, Community Based Study of Supports for Healthy Eating and Active Living, 2012.

| | Total | Pilot state | | | Population size | | | | |
|---|----------|-------------|-----------|----------------------|-----------------|-----------|-------------|----------|---------|
| | | California | Minnesota | P-value ^a | <1000 | 1000–4999 | 5000–24,999 | ≥25,000 | P-value |
| Number of local governments | 210 | 96 | 114 | | 45 | 53 | 48 | 64 | |
| Median population size | 6541 | 27,288 | 1765 | | 586 | 2410 | 12,854 | 54,885 | |
| Mean completion time (minutes; SE) ^b | 31 (2) | 35 (3) | 27 (3) | 0.08 | 27 (6) | 22 (2) | 29 (4) | 43 (4) | 0.003 |
| Number individuals completing survey (SE) ^c | | | | | | | | | |
| 1 | 60% (3%) | 43% (3%) | 75% (3%) | <0.001 | 73% (3%) | 81% (3%) | 54% (3%) | 38% (3%) | <0.001 |
| 2–3 | 26% (3%) | 34% (3%) | 19% (3%) | | 24% (3%) | 15% (2%) | 3% (1%) | 31% (3%) | |
| 4 or more | 8% (2%) | 13% (2%) | 4% (1%) | | 2% (1%) | 0% | 2% (1%) | 23% (3%) | |
| Missing | 6% (2%) | 10% (2%) | 2% (1%) | | 0% | 4% (1%) | 10% (2%) | 8% (2%) | |
| Level of effort required (SE) ^c | | | | | | | | | |
| Minimal | 51% (3%) | 38% (3%) | 63% (3%) | 0.001 | 69% (3%) | 57% (3%) | 50% (3%) | 36% (3%) | 0.06 |
| Moderate | 36% (3%) | 45% (3%) | 29% (3%) | | 24% (3%) | 38% (3%) | 31% (3%) | 47% (3%) | |
| High | 6% (2%) | 7% (2%) | 5% (2%) | | 4% (1%) | 2% (1%) | 8% (2%) | 9% (2%) | |
| Missing | 6% (2%) | 10% (2%) | 3% (1%) | | 2% (1%) | 4% (1%) | 10% (2%) | 8% (2%) | |
| % skipped 1 or more questions (SE) | 9% (2%) | 13% (2%) | 6% (2%) | 0.11 | 9% (2%) | 8% (2%) | 12% (2%) | 8% (2%) | 0.81 |
| % selected ‘do not understand’ (SE) ^d | 9% (2%) | 13% (2%) | 6% (2%) | 0.31 | 7% (2%) | 6% (2%) | 4% (1%) | 3% (1%) | 0.83 |
| % selected ‘tried and could not obtain information’ (SE) ^d | 19% (1%) | 25% (3%) | 13% (2%) | 0.03 | 22% (3%) | 15% (2%) | 19% (3%) | 19% (3%) | 0.84 |

SE – standard error.

^a P-values for differences between states and population size categories using student *t*-tests or anova for means and chi-square tests for percentages.

^b 13 local governments did not provide completion time.

^c Totals do not add to 100% due to rounding.

^d Percentage of local governments that selected this response option for 1 or more questions.

Table 2
Survey administration findings by follow up arm, Community Based Study of Supports for Healthy Eating and Active Living, 2012.

| | Follow up arm ^a | | P-value ^b |
|--|----------------------------|----------------------|----------------------|
| | Email only | Email and phone call | |
| Number of local governments | 74 | 136 | |
| Response Rate | 37% | 68% | <0.001 |
| Mean completion time (minutes; SE) ^c | 34 (4) | 29 (3) | 0.36 |
| Number of individuals completing survey (SE) ^d | | | |
| 1 | 59% (3%) | 60% (3%) | 0.75 |
| 2–3 | 24% (3%) | 27% (3%) | |
| 4 or more | 11% (2%) | 7% (2%) | |
| Missing | 5% (2%) | 6% (2%) | |
| Level of effort required (SE) ^d | | | |
| Minimal | 55% (3%) | 49% (3%) | 0.72 |
| Moderate | 35% (3%) | 37% (3%) | |
| High | 4% (1%) | 7% (2%) | |
| Missing | 5% (2%) | 7% (2%) | |
| % skipped 1 or more questions (SE) | 7% (2%) | 10% (2%) | 0.39 |
| % selected 'do not understand' (SE) ^e | 4% (1%) | 5% (2%) | 0.72 |
| % selected 'tried and could not obtain information'(SE) ^e | 22% (3%) | 17% (3%) | 0.40 |

SE – standard error.

^a Non-respondents randomly assigned to either receive e-mail reminders every two weeks or regular phone calls or email reminders every two weeks.

^b P-values for differences in response rates between arms using chi-square test.

^c 13 local governments did not provide completion time.

^d Totals may not add to 100% due to rounding.

^e Percentage of local governments that selected this response option for 1 or more questions.

with <1000 residents had bike/pedestrian friendly design policies compared to 85% of local governments with ≥25,000 residents. Similarly, only 0–2% of the smallest local governments had written nutrition standards for foods sold or served in government buildings and worksites compared to 17% of the largest local governments. While local governments in California had a higher median population size than those in Minnesota (27,288 versus 1765) and were more likely to have healthy eating and active living supportive policies and standards, these same patterns of larger local governments being more likely to have supportive policies than smaller governments were observed within the two states (data not shown). Sensitivity analyses repeating all above analyses excluding missing rather than pooling them as no responses did not change the magnitude or significance of observed findings.

4. Discussion

Results from this pilot study indicate that the web based survey design and sampling methods we developed are a feasible data collection tool for estimating the prevalence of municipal policies and standards that support healthy eating and active living at the state and national level. On average, only one local government respondent was needed to complete the survey in approximately 30 min with minimal effort although larger communities required more time, people, and effort to complete the survey than smaller communities. Most respondents were the city manager, planner, or administrator as intended; in spite of heterogeneity in respondents' job titles, few respondents' skipped questions or indicated they did not understand the questions. However, a more intensive follow-up plan including phone calls was required to achieve a reasonable response rate.

Local governments may be able to change societal norms by creating environments where healthy choices are easy (Ashe et al., 2011). Prior work has identified many of the topics surveyed as important strategies local governments can use to support healthy eating and active living (Khan et al., 2009; Institute of Medicine and National Research Council, 2009; Centers for Disease Control and Prevention, 2009), however there are few assessments of prevalence of the policies. While states and localities have pioneered a wide range of healthy eating and active living policy strategies, (Graff et al., 2012) limited studies have assessed the prevalence of local policies and standards (McCarty et al., 2009; Librett et al., 2003; Heinrich et al., 2008). One assessed public health themes across 37 municipalities in the US and is not directly comparable to our findings (McCarty et al., 2009). Other studies in Utah and Hawaii assessed physical activity policies and similar to our findings concluded more populous areas reported more policies encouraging physical activity than less populous areas (Heinrich et al., 2008). This is the first study to our knowledge to demonstrate a feasible, systematic data collection instrument and methodology for estimating the prevalence of municipal policies to support healthy eating and active living that may provide estimates representative of the state level if intensive follow up methods are used to achieve sufficient response rates. We were also able to examine the prevalence of policies and standards that support healthy eating and active living in two states. We found that policies to support healthy eating and active living were more prevalent in California than in Minnesota and most Minnesota and California local governments surveyed had policies that support physical activity and healthy eating and active living related community planning documents and objectives. Policies that support healthy eating and active living were less prevalent. While both states have received funding from the Centers for Disease Control and Prevention to support healthy eating and active living (Centers for Disease Control and Prevention, 2016), each state has different levels of infrastructure and programs dedicated to chronic disease prevention designed to serve their unique populations (Minnesota Department of Health, 2016; California Department of Public Health, 2017). Findings will be used by the two pilot states to understand what types of healthy eating and active living policies and standards are supported in their local communities and evaluate and refine state obesity prevention plans.

We learned several lessons that have implications for a national study. First, uniformity of responses to some survey items limit their utility. For example, the consistent lack of pricing incentives to encourage healthier purchases in this survey may be helpful for tracking change in the prevalence over time in a national survey but fail to highlight differences across local governments. Second, to obtain good quality data, both email and phone contact were necessary to achieve a reasonable response rate (68% for phone and email versus 38% for email only contact). Third, communities with fewer than 1000 residents were the least likely to have surveyed policies and account for <3% of the U.S. municipal population (approximately 2% of the U.S. population), but represent approximately half of local governments (U.S. Census Bureau, 2013c). Fourth, the average time to complete the survey was almost half of the posted burden (31 min versus 60 min). Because the posted burden estimate was listed as a substantial obstacle for many initial non-respondents during follow up phone calls, a national study should update the burden estimate to reduce this obstacle. Finally, while few respondents skipped items or said they did not understand survey questions, almost a quarter indicated they tried but could not obtain information about formal Complete Streets policies or breastfeeding friendly policies. These communities were counted as not having the policy but respondents clearly need guidance on where this information is likely to be recorded in local government offices.

The methods we tested in this pilot study have several limitations. First, the instrument was not validated for content and questions were not tested for repeatability. Thus, how well the instrument reflects written policies and standards in local governments and how well the instrument can track changes over time is not known. We also were not

Table 3
Percentages (standard errors) of local governments with selected policies and standards in Minnesota and California, overall and by population size, Community Based Study of Supports for Healthy Eating and Active Living, 2012^a.

| | Total | State | | | Population Size | | | | P-value |
|---|-------------|------------|-----------|----------------------|-----------------|-----------|-------------|-------------|---------|
| | | California | Minnesota | P-value ^b | <1000 | 1000–4999 | 5000–24,999 | ≥25,000 | |
| No. of local governments | 210 | 96 | 114 | | 45 | 53 | 48 | 64 | |
| Median population size | 6541 | 27,288 | 1765 | | 586 | 2410 | 12,854 | 54,885 | |
| Community planning documents | | | | | | | | | |
| Comprehensive plan | 78% (3%) | 95% (2%) | 66% (5%) | <0.001 | 43% (7%) | 80% (6%) | 95% (3%) | 96% (2%) | <0.001 |
| Health-related master plans | 83% (3%) | 95% (2%) | 74% (4%) | <0.001 | 57% (7%) | 80% (6%) | 96% (3%) | 98% (2%) | <0.001 |
| Nutrition/physical related objectives (n = 188) | 86% (3%) | 92% (3%) | 81% (4%) | 0.02 | 69% (8%) | 79% (6%) | 95% (4%) | 98% (2%) | <0.001 |
| Policies that support physical activity ^c | | | | | | | | | |
| Bike/pedestrian friendly design | 57% (3%) | 77% (4%) | 43% (5%) | <0.001 | 38% (7%) | 41% (7%) | 64% (7%) | 85% (5%) | <0.001 |
| Complete Streets ^d | 21% (3%) | 34% (5%) | 11% (3%) | <0.001 | 8% (4%) | 12% (4%) | 15% (5%) | 45% (7%) | <0.001 |
| Bicycle racks required at public facilities | 27% (3%) | 48% (5%) | 11% (3%) | <0.001 | 0% | 11% (4%) | 41% (7%) | 55% (7%) | |
| Pedestrian friendly policies for new or retrofit development | 66% (3%) | 76% (4%) | 59% (5%) | 0.01 | 34% (7%) | 65% (7%) | 82% (6%) | 86% (5%) | <0.001 |
| Policies or budget provisions to support activity in parks and recreation areas | 87% (2%) | 86% (4%) | 87% (3%) | 0.80 | 83% (6%) | 85% (5%) | 87% (5%) | 91% (4%) | 0.60 |
| Joint-use agreement to allow public use of school recreational facilities | 55% (4%) | 71% (4%) | 43% (5%) | <0.001 | 23% (6%) | 43% (7%) | 65% (7%) | 88% (4%) | <0.001 |
| Policies that support healthy eating ^e | | | | | | | | | |
| Pricing incentives to promote healthier food and beverage purchases | 0% | 0% | 0% | | 0% | 0% | 0% | 0% | |
| Nutrition standards in government buildings or worksites | 5% (2%) | 11% (4%) | 1% (1%) | 0.003 | 0% | 2% (2%) | 0% | 17% (5%) | |
| Incentives for healthier food retailers ^f | 62% (4%) | 62% (5%) | 61% (5%) | 0.85 | 41% (7%) | 73% (6%) | 66% (7%) | 66% (7%) | 0.01 |
| Transportation to healthier food retailers ^g | 38% (3%) | 58% (5%) | 23% (4%) | <0.001 | 13% (5%) | 28% (6%) | 38% (7%) | 69% (6%) | <0.001 |
| Funding for Electronic Benefits Transfer (EBT) in farmers' markets | 3% (1%) | 4% (2%) | 2% (1%) | 0.33 | 0% | 4% (3%) | 0% | 6% (3%) | |
| Food policy council | 6% (2%) | 8% (3%) | 5% (2%) | 0.28 | 5% (3%) | 6% (3%) | 7% (3%) | 7% (4%) | 0.94 |
| Breastfeeding friendly policies ^h | 54% (4%) | 67% (5%) | 46% (5%) | 0.004 | 36% (7%) | 39% (7%) | 70% (7%) | 74% (6%) | <0.001 |

^a Percentages and standard error of percentages were weighted and account for survey sampling design.

^b P-values for differences between states and population size categories using chi-square tests. P-values not calculated for policies where no communities in one of the population size categories or states had the policy.

^c 6 of 8 policies in the survey that are supportive of physical activity are shown.

^d A Complete Streets policy, as defined by the National Complete Streets Coalition, is a policy ensuring that transportation planners and engineers consider the needs of all users during the design of major road projects, including bicyclists, pedestrians of all ages and abilities, public transit vehicles and riders, and motorists.

^e Policies and standards that support healthy eating include 11 policies; 7 policies were collapsed into 3 broader categories as noted below.

^f Participant responded that the municipality had at least one of the following policy incentives to encourage the availability of healthier foods at 1) full service grocery stores/supermarkets, 2) corner and convenience stores, and 3) farmers' markets.

^g Participant responded that the municipality had at least one of the following policies: 1) dedicated transportation to healthy food retailers for at risk residents and 2) consideration of supermarket accessibility on public transportation routes.

^h Participant responded that the municipality had at least one of the following policies 1) time and place to express milk for all employees and 2) paid maternity leave.

able to provide information on the degree of implementation or enforcement of the reported policies. While the instrument was cognitively tested among target respondents and few respondents skipped items or indicated they did not understand or could not obtain information about items, future work needs to verify the self-reported information against official records. Second, only two states were surveyed as part of this pilot so that survey performance and findings can only be applied to the two pilot states. Third, unincorporated areas were excluded. In 2010, 81% of the U.S. population lived in municipal areas and would be included in a national study using these methods (U.S. Census Bureau, 2013a). Next, other types of healthy eating and active living related policies may exist at the local level that were not asked about in the survey. Finally, given the moderate response rate, reported prevalences may be overestimated if local governments who do not have healthy eating and active living related policies failed to participate.

Local governments may play an important role in their residents' ability to consume a healthy diet and be physically active. National surveillance of actions local governments are taking to support their residents in leading healthier lifestyles may help identify areas in the U.S.

where residents are not receiving these supports. The web based survey and sampling methods we developed are a feasible data collection tool for state based and national surveillance of municipal policies and standards that support healthy eating and active living. Results from this pilot informed the development of a protocol used to conduct a similar national study of nutrition and physical activity policies and standards. Data from this national study are currently being analyzed to understand how supportive communities are of healthy eating and active living across the U.S. (Onufrak et al., 2016; Carlson et al., 2016; Omura et al., 2017).

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.pmedr.2017.02.005>.

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