



Healthy Stores for a Healthy Community Technical Report

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Background

The California Department of Public Health (CDPH), California Tobacco Control Program's (CTCP) first efforts in collecting data in the retail environment was in the mid-1990s with "Operation Storefront," which exposed the targeted marketing of tobacco products to youth. The continued investments of the tobacco industry in marketing and promotions in the retail environment, spending more than \$8 billion in 2011, and conclusions by the Surgeon General Report that exposure to tobacco marketing in stores increases tobacco experimentation and use by youth, prompted CTCP to further assess what was actually occurring in the retail store environment in California. CTCP worked collaboratively with the 61 county and municipal local lead agencies (LLAs)¹ to assess the retail store environment and its potential impact on youth by measuring a range of unhealthy and healthy products and marketing practices for tobacco, alcohol, and food and beverage items. It was decided to look at the retail environment from a more comprehensive perspective, integrating tobacco, alcohol, and nutrition topics, since there were many local and state efforts examining one or more of these health issues. This collaboration is part of the state's continued effort to address the burden of chronic disease and to better understand the role that stores could play in making communities healthier.

The 61 LLAs completed the 2013 Healthy Stores for a Healthy Community (HSHC) Survey in a total of 7,393 stores that sell tobacco throughout the state of California. The information collected will be used for educational purposes, informing local community efforts to improve the retail environment for residents.

Survey Development and Testing

The Stanford Prevention Research Center (SPRC) was tasked with designing an observational survey instrument based on several years of experience developing a similar tool for the collection of data for the California Tobacco Advertising Survey (CTAS). In conjunction with multiple partners, including CTCP staff, LLA staff, members of the Tobacco Control Evaluation Center (TCEC), state and local partners in the fields of Nutrition and Alcohol, and other experts, SPRC finalized the tool in early 2013 and field-tested it in local communities before the statewide survey was launched. The survey was programmed into the iSURVEY software application (a mobile survey and data collection platform) and data collectors were trained on the use of iPod Touch devices to collect the data. TCEC staff conducted regional trainings for LLA staff and community volunteers to instruct users on the features of iSURVEY and the iPod Touch devices in order to reduce data entry errors and missing data.

All 61 LLAs completed the Core survey which included thirty questions on availability of and advertisements for tobacco, food and beverage, and alcohol products. Additionally, each LLA selected

¹ Local Lead Agencies legislatively designated as the 61 county and city health departments or a governmental or private non-profit agency when the local health department is unable to fulfill the mandates of the local lead agency.

at least one of four modules to complete: A) Flavored Products Module (seventeen questions); B) Price and Promotions Module (sixteen questions); C) Placement and Exterior Ads Module (nine questions); and D) Nutrition and Alcohol Module (seventeen questions).

In May 2013, over 200 individuals participated in a Local Data Collection Training in Sacramento, which employed a “train the trainers” model. SPRC, TCEC, CTCP, and Nutrition and Alcohol experts provided detailed information on the survey instrument, how to use the iPod Touch devices and iSURVEY software application, and the mapping of store routes. During the training data collectors visited simulated store environments and local area stores which provided opportunities to allow participants to practice the store survey. After the Local Data Collection Training, follow-up webinars and in-person trainings were provided to LLA staff members, and instructions and materials were provided to assist them in training additional local partners and youth on the store survey instrument and data collection.

Sampling Methodology

The sampling frame was based on the state Board of Equalization (BOE) list of stores that sold tobacco and had applied and paid for a state tobacco retail license. This list was generated in late 2012 and consisted of 36,777 stores. A wide range of stores sell tobacco, such as convenience stores, supermarkets, bars, corner markets, liquor stores, etc. Since many LLAs expressed interest in involving youth volunteers to work as data collectors across the state, a decision was made to exclude all stores *a priori* that prohibited youth from entering their premises (i.e., bars or nightclubs that sell alcohol). In addition, the survey did not include stores that required paid memberships (i.e., Sam’s Club), and stores that were in some way restricted to the public or required payment for entry (i.e., military bases, state or national parks). After initial exclusion of these stores, the core survey included a question to ensure eligibility of a store by assessing whether any tobacco products were sold. Reasons for not being able to survey a store included: store was out of business, store was not open at the time of the visit, etc.

The sample size for each LLA was customized based on the total number of tobacco retailers as well as the funding allocation level for each jurisdiction. The minimum required sample size for the largest LLA would reach a scientific standard of a 0.05 margin of error. For mid-sized LLAs, the minimum required sample size would achieve a 0.075 margin of error, and for the smallest LLAs the margin of error equaled 0.100. Some LLAs with a small number of stores in their jurisdiction (i.e. fewer than 30) were required to conduct a census of all stores. Beyond the minimum sample size required, each LLA was given the option to increase their sample size to an optimal sample size to improve the accuracy of survey findings and to better examine results within sub-populations. LLAs were also given the flexibility to survey a number of stores that fell between the minimum and optimal numbers.

After the final sample size was determined, a random sample of zip codes was drawn in each LLA. All the eligible stores within a selected zip code became a part of the sample. In some cases, LLAs chose to survey additional stores from non-randomly selected zip codes in order to examine neighborhoods of interest. Eleven LLAs chose to survey additional stores from non-randomly selected zip codes. The data collected from these stores are excluded from the local, regional, and statewide data analyses presented here; however, LLAs may analyze data from the purposefully selected zip codes to make comparisons within their jurisdictions or to perform jurisdiction-specific analyses.

Data collection

Data collection was completed using handheld devices such as iPod touches. Using iSURVEY, data collectors inputted data into a mobile application that did not require internet or data connectivity. Using iSURVEY's administrative Web site, CTCP created a master account and provided each LLA with access credentials to the mobile survey, which were then entered into all data collection devices. The survey application was downloaded onto each device in the presence of Wi-Fi. The data were then collected offline. Once the devices were within Wi-Fi range, data were automatically sent to the survey database and were then accessed by the password-protected administrative website. The survey instruments used by the LLAs included the required core module plus at least one of the four additional modules described above.

In all, between June and September, 2013, over 700 people participated in data collection efforts, with nearly 300 of them youth volunteers. During this time, TCEC created a hotline and answered hundreds of calls from LLAs in order to ensure that all technical assistance needs were met. LLAs partnered with over 50 different organizations to collect data, including local nutrition and alcohol partners, youth coalitions, college campus organizations, law enforcement groups, and community organizations, including Friday Night Live, local chapters of the American Lung Association, faith-based groups, and county offices of education.

Of the 7,393 total stores surveyed, 2,576 (34.8%) were convenience stores (with or without gas stations), 471 (6.4%) were drug stores or pharmacies, 1,152 (15.6%) were liquor stores, 679 (9.2%) were supermarkets or large grocery stores, 1,744 (23.6%) were small markets, 357 (4.8%) were tobacco stores, and 414 (5.6%) were other types of stores (e.g.,) (See Table 1 below.)

Table 1. Types of stores that were surveyed

Total	Convenience stores	Drug stores/pharmacies	Liquor stores	Supermarket/large grocery stores	Small markets	Tobacco Stores	Other
7,393	2,576	471	1,152	679	1,744	357	414
100%	34.8%	6.4%	15.6%	9.2%	23.6%	4.8%	5.6%

Data Analyses

Local, regional, and state-level analyses were conducted using the Healthy Stores for a Healthy Community Survey data. The samples were drawn with the expectation that 15% of stores could not be surveyed, accounting for the possibility of stores that would be closed, not sell tobacco, or be ineligible due to other criteria. Of the list of over 9,000 stores sent to LLAs, 8,128 stores met all eligibility requirements, and 7,393 surveys were successfully completed, for a 91% completion rate.

TCEC performed periodic monitoring of data as LLAs uploaded their survey results during their data collection period. The function of the monitoring was to ensure that for each LLA, the number of results communicated matched the number of results in the database. Once TCEC performed these checks, they confirmed the match with each LLA. Using a template for uniformity, emails were sent to the LLAs, confirming the quantity of stores and devices, device names, data collector ID #s, date/date ranges, module(s), and the total number of completed surveys. TCEC completed all the data cleaning and each

complete cleaned dataset was then provided to the designated Point of Contact (POC)², including store names and addresses. This was initiated once the POC contacted TCEC to confirm that data collection was completed and upon requesting the complete dataset for their LLA. The dataset was reformatted using a SAS code provided by CTCP, duplicate store ID entries were deleted, and store names and addresses were added.

Additional checks requested by CTCP and SPRC included correcting and/or recoding such issues as “Other” store types into an existing category, correcting entries for store ID, name, address, technical or handheld device glitches, contradictory responses, and price. Any requests for changes were discussed with the POC. The datasets were sent to the LLAs, via email, upon ensuring that they signed and returned a Data Security Form. The email provided instructions and information including data documentation that provided detailed information on how the dataset was cleaned and what items were changed. A reminder that only TCEC could make changes was mentioned as well as the agreement, via the Data Security Form, of keeping the data and survey results confidential until the coordinated March 5, 2014 press events. The LLAs were instructed to review the dataset and immediately notify TCEC of any concerns.

In sum, 7,393 total stores selected from the random sample were visited and surveys were completed and analyzed. A weight was applied to compensate for the different proportion of zip codes that were selected in each jurisdiction for the statewide estimates. A cluster sampling design effect was also accounted for in the analysis of statewide and local-level analyses. The distance of a surveyed store to a school was calculated using Geographic Information Systems (GIS) software and was provided by SPRC staff, using a list of public and private elementary and secondary schools purchased from NAICS. The CDPH Nutrition Education Obesity Prevention (NEOP) Program provided information regarding a survey store’s location in low-income areas, using the federal poverty classification developed by the Supplemental Nutrition Assistance Program (SNAP), and whether or not a surveyed store accepted CalFresh (the federal SNAP program) or Women, Infants, and Children (WIC), the federal nutrition assistance program.

Seventeen of the sixty-one LLAs completed the Flavored Products Module, fourteen completed the Price and Promotions Module, twenty-four completed the Placement and Exterior Ads Module, and fifty-eight completed the Nutrition and Alcohol Module. Eleven LLAs completed the Core and all four additional Modules. (See Table 2 below.) Since all LLAs completed the Core Module and nearly all completed the Nutrition and Alcohol Module, statewide data for these two Modules were analyzed and included in data summaries and provided to LLAs.

Table 2. Number of LLAs completing different Modules.

Module	# of LLAs completing
Flavored Products	17
Price & Promotions	14
Placement & Exterior Ads	24
Nutrition & Alcohol	58
All Four Modules	11

² Each LLA designated a POC in order to serve as a point person for all of the LLA’s survey coordination and communication efforts and to ensure data quality and survey completion.

Staff members from an Evaluation Subcommittee work group, CTCP, the NEOP Program, and the CDPH Safe and Active Communities Branch (SACB) and the Alcohol and Drug Program (ADP) chose key, priority data points for analysis. The results of these analyses were shared with the LLAs and instructions were provided to the field for interpreting the data for differences between local and statewide frequencies. SPRC staff members were requested to create one map for each LLA which portrayed the location of stores that sell tobacco in each zip code and the percentage of school-age residents (ages 5-17).

Variables analyzed include³:

Percent of stores selling e-cigarettes
Percent of stores selling flavored non-cigarette tobacco products
Price of cheapest pack of cigarettes, excluding tax
Percent of stores where tobacco products are available in the check-out area
Percent of stores selling cigarillos
Percent of stores selling chewing tobacco
Percent of stores selling tobacco near candy
Percent of stores with healthy exterior advertising
Percent of stores with unhealthy exterior advertising
Percent of stores selling alcohol
Of the stores that sell alcohol, % of stores that have alcohol advertising
Of the stores that sell alcohol, % of stores that sell alcopops
Of the stores that sell alcohol, % of stores with alcohol ads near candy, toys, or below three feet
Of the stores that sell alcohol, % of stores that sell malt liquor
Percent of stores selling fresh fruit or vegetables
Percent of stores selling a good selection of good quality fresh fruit or vegetables
Percent of stores selling low-fat or non-fat milk
Percent of stores selling sugary drinks at the check-out area

Besides providing statewide and LLA-specific frequency tables, CTCP also provided region-specific data. Twelve regions were devised based on geographic proximity as well as shared media markets. These twelve regions are:

Shasta Cascade: Butte, Glenn, Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama, Trinity
*Bay Area: Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Solano
Central Valley: Fresno, Kern, Kings, Madera, Mariposa, Merced, Tulare
North Coast: Del Norte, Humboldt
*Greater Los Angeles: Los Angeles, Orange
Eastern Sierras: Alpine, Inyo, Mono
Central Coast: Monterey, San Benito, Santa Cruz
Inland Empire: Riverside, San Bernardino
Gold Country: Amador, Calaveras, Colusa, El Dorado, Nevada, Placer, Sacramento, San Joaquin, Stanislaus, Sutter, Tuolumne, Yolo, and Yuba
Greater San Diego: San Diego, Imperial
Gold Coast: San Luis Obispo, Santa Barbara, Ventura

³ An Excel spreadsheet with all 61 health departments' data can be found on the microsite at www.healthystoreshealthycommunity.com.

North Bay: Lake, Marin, Mendocino, Napa, Sonoma

*The three city LLAs (Berkeley, Long Beach, and Pasadena) are included in the regions associated with their county affiliation (Berkeley is in Bay Area Region; Long Beach and Pasadena are included in the Greater Los Angeles Region.)