

Stimulating community and local policy action using GIS and field surveys in low-income food environments

Background

Documenting conditions in poor neighborhoods to accurately convey the food environment is an important strategy for stimulating community action and policies. Since 2006, over 80 low-income* neighborhoods in California have been assessed by 23 funded local health departments using Communities of Excellence in Nutrition Physical Activity and Obesity Prevention (CX³) tools and methods developed by the Network for a Healthy California (Network) in the California Department of Public Health. Local CX³ data collection was done a rolling basis depending on the funding cycle of the 23 Network-funded local health departments. California has a total of 61 local health departments (58 counties; 3 cities). Training and implementation stretches beyond the *Network* to more than 7 additional health departments funded through other sources in the state.

* Defined as census tracts where 50% or more of residents are below 185% of the Federal Poverty Level.

Objective

- Gather accurate localized data for:
- Designing relevant, tailored community nutrition education interventions
- Inspiring local policy and environmental changes that lead to healthier neighborhoods, by working with consumers and partners

CX³ Tools and Methods

- GIS Mapping followed by on-the-ground Field Surveys
- Neighborhood-level indicators, rated by experts, define "excellent community" Standardized tools and methods to measure indictors
- Define neighborhoods using census tracts for boundaries and analysis
- 3 7 neighborhoods surveyed by each local department
- Types: Urban dense, suburban, rural neighborhoods
- Training, TA and data interpretation/guidance for local health department staff

GIS Mapping

- Access to Supermarkets
- Markets with >20 employees
- $\frac{1}{2}$ mile service area
- Transit to supermarkets
- Markets around schools
- Farmers Markets
- Density of Fast Food

Field Surveys

- Grocery stores and small markets
- Different types of stores (large to small, c-stores, others) Availability and quality of fruits and vegetables, other
- healthy foods (new WIC food package) Fruit and vegetable prices
- Marketing of healthy/unhealthy foods
- Walkability
- Fast food around schools
- Availability of healthy options
- Menu labeling
- Marketing
- Outdoor marketing around schools
- Food Banks

Assessment/Tracking

- Alternative Food Sources
- Community Supported Agriculture
- Produce Stands
- Community Gardens
- Emergency Food Sources
- Local Health Department Infrastructure
- Media Coverage









Overall Perspective

• Combined data for the 81 neighborhoods present a picture of the conditions. 79% of food stores in CX³ neighborhoods are small markets and convenience stores.

CX³ Neighborhoods: Food Store Types



CX³ Neighborhood Food Index*



Convenience + Small Markets of Poor Quality + Fast Food

Farmers' Markets + Produce Markets + Grocery Stores/Supermarkets + Small Markets of Good Quality



* Adapted from Retail Food Environment Index developed by California Center for Public Health Advocacy

The index shows how "balanced" a neighborhood's food environment is. A lower index is better. Examples: An index of 3 means 3 unhealthy food sources for every 1 healthy food source. Index of 9 means the neighborhood has 9 unhealthy food sources for every 1 healthy food source.

- 32% of neighborhoods have an index between 1 5
- 27% of neighborhoods have an index between >5 10
- 20% of neighborhoods with an index between 10+ 25
- 22% of neighborhoods have <u>no</u> healthy food sources

Localized Results Provided:

- In-depth data about each neighborhood
- Snapshot of population and neighborhood infrastructure (number of schools, parks, retail food types)
- Analysis includes scoring criteria assigning weighted values for WIC/Food Stamps, affordable prices for fruits and vegetables, healthy foods, marketing practices, safe and walkable routes to food, etc.

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Buckeye Public Health for CHANG CX3 Communities of Excellence in Nutrition, Physical Activity and Obesity Prevention								
CX ³ – SH	ASTA COUNTY HEALTH SEI	RVICES						
	Vis. HIGH FAT/SUGAR	Communities all over the state are working to address key nutrition issues shaping the health of their residents. Shasta County for gram to assess in the state of the state o	NEIGHBORHOOD NUTRITION INDICATOR PERFORMANCE Shasta County Public Health officials conducted an audit of nutrition resources in the Buckeye neighborhood from April 30, 2008. A wide range of indicators were used to understand Buckeye's nutrition environments. Using Geographic Information Systems software, site visits, interviews and store surveys, health officials and volunteers examined factors ranging from healthy food access and availability to marketing practices					
CODD SOURCES* (27%)			and product quality. This data provides a realistic picture of areas in need of improvement and offers residents, merchants, decision makers, health advocates and neighborhood groups a focal point as they work to build a healthier community.					
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SHASTA COUNTY Public Health Department Communities of Excellence Neighborhood Analysis	Downtown	Buckeye	Northpoint	Enterprise	West Anderson
NEIGHBORHOOD SN	APSI	ΙΟΤ			
Total population	7,402	1111	1837	7797	5593
Percent of population living in poverty ¹³	54%	50%	51%	53%	56%
Number of schools	3	1	0	5	6
Number of parks and playgrounds	6	1	0	5	6
Number of farmers markets	2	1	0	0	1
Number of supermarkets or large grocery stores	2	0	1	1	1
Percent of population living within a half mile of a supermarket or grocery store	25%	0X%	46%	20%	20%
Proportion of supermarkets or large grocery stores with convenient public transit	0 of 2	0 of 0	0 of 1	0 of 1	0 of 1
Number of small markets and other stores meeting standards	0	0	0	0	0
Number of small markets and other food stores not meeting standards	4	1	2	5	0
Number of convenience stores	1	0	2	6	4
Number of fast-food outlets (all types)	10	1	0	14	14
Fast-food chain outlets that offer promotional toy give-aways	YES	NO	N/A	YES	YES
Ratio of fast-food outlets to population		1:1111	0	1:557	1:400
Index of high fat/sugar to healthy food sources ¹⁴	3.8	2	4	25	9
NEIGHBORHOOD NUTRITION INDI	САТО	R PE	RFO	RMAN	CE
Total Neighborhood Food Store Quality (% meet standards)	29%	0%	20%	8%	20%
Fast Food (% meet standards)	0%	0%	N/A	0%	0%



CX³ Evaluation Survey Conducted

- Administered via Survey Monkey to Local Health Departments Participating in CX³
- June 2009
- Quantitative & Qualitative
- Time to complete: 45-60 min
- 96% (22 of 23) *Network* CX³ sites responded
- 50% have utilized combination of funding

Top 5 *Network* **Interventions:**

- CX³ data helped identify gaps in consumer-targeted nutrition education
- *Network* Retail Program started in some neighborhood stores (73%)
- Compile/provide lists of "where to shop" for healthy food in neighborhood (68%)
- Skill building activities to foster parent or youth "Champions for Change" (68%)
- Food demos in stores, farmers' markets, etc. (68%)
- Corner store activities to promote healthy food options (64%)

n = 22 sites

Sites responded as actively implementing or planning to implement



Mayor's Office

n = 22 sites

Valerie Quinn, M.Ed., Alyssa Ghirardelli, MPH, RD, Sharon Sugerman, MS, RD, FADA Susan B. Foerster, MPH, RD.



Community Engagement

- Over 80% of the local health departments engaged community members in CX³ process. Benefits noted include:
- Community more aware of neighborhood conditions
- Better appreciation for local health department
- Greater sense of ownership for improving neighborhood

"Working with community members has many rewards because they are the eyes and ears of the community. When they take part and learn CX³ they seemed **empowered** and much more aware of their environment."

-Local health department staff

Other Findings

- 64% are working with WIC to look at readiness of stores for new WIC food package
- Least common areas being pursued
- Removal of billboards
- Store signage elimination/reduction ordinances
- Store façade improvements
- Attraction of supermarkets or other healthy retail

Limitations of CX³ Approaches

- Health department sites at different stages of implementation
- Defining neighborhood boundaries using census tracts and census blocks do not always reflect natural neighborhood area
- Lack of neighborhood comparison data (high income) to describe local inequities

Discussion

- Overall, the CX³ real-world neighborhood data appears to be instrumental in changing neighborhood conditions.
- Local departments pursing the most policy and environmental changes have multiple funding sources within their agencies.
- The involvement of community members may play a role in stimulating influential city/county level connections, using the neighborhood data to do so.
- Larger vs. smaller local departments: Few differences in community and policy actions being pursued. However, larger health departments found the CX³ data more impactful in fostering changes to improve neighborhood conditions, and provided more opportunities for collaboration and partnerships.



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