



HHS Public Access

Author manuscript

Am J Health Promot. Author manuscript; available in PMC 2017 April 04.

Published in final edited form as:

Am J Health Promot. 2015 ; 29(4): 255–258. doi:10.4278/ajhp.121012-ARB-501.

Lessons Learned From Community-Based Approaches to Sodium Reduction

Heather Kane, PhD,

RTI International, Durham, North Carolina

Karen Strazza, MPH,

RTI International, Durham, North Carolina

Jan L. Losby PhD, MSW,

Division for Heart Disease and Stroke Prevention at the Centers for Disease Control and Prevention, Atlanta, Georgia

Rashon Lane, MA,

Division for Heart Disease and Stroke Prevention at the Centers for Disease Control and Prevention, Atlanta, Georgia

Kristy Mugavero, RN, MSN, MPH,

Division for Heart Disease and Stroke Prevention at the Centers for Disease Control and Prevention, Atlanta, Georgia

Andrea S. Anater, PhD, MPH, MA,

RTI International, Durham, North Carolina

Corey Frost, BA,

RTI International, Durham, North Carolina

Marjorie Margolis, BA, and

RTI International, Durham, North Carolina

James Hersey, PhD

RTI International, Durham, North Carolina

Abstract

Purpose—This article describes lessons from a Centers for Disease Control and Prevention initiative encompassing sodium reduction interventions in six communities.

Design—A multiple case study design was used.

Setting—This evaluation examined data from programs implemented in six communities located in New York (Broome County, Schenectady County, and New York City); California (Los Angeles County and Shasta County); and Kansas (Shawnee County).

Subjects—Participants (n = 80) included program staff, program directors, state-level staff, and partners.

Measures—Measures for this evaluation included challenges, facilitators, and lessons learned from implementing sodium reduction strategies.

Analysis—The project team conducted a document review of program materials and semi structured interviews 12 to 14 months after implementation. The team coded and analyzed data deductively and inductively.

Results—Five lessons for implementing community-based sodium reduction approaches emerged: (1) build relationships with partners to understand their concerns, (2) involve individuals knowledgeable about specific venues early, (3) incorporate sodium reduction efforts and messaging into broader nutrition efforts, (4) design the program to reduce sodium gradually to take into account consumer preferences and taste transitions, and (5) identify ways to address the cost of lower-sodium products.

Conclusion—The experiences of the six communities may assist practitioners in planning community-based sodium reduction interventions. Addressing sodium reduction using a community-based approach can foster meaningful change in dietary sodium consumption.

Keywords

Sodium Reduction; Nutrition; Case Study; Prevention Research. Manuscript format: research; Research purpose: descriptive; Study design: qualitative; Outcome measure: behavioral; Setting: local community; Health focus: nutrition; Strategy: skill building/behavior change; Target population age: youth; adults; seniors; Target population circumstances: geographic location

Purpose

Sodium intake in the United States exceeds recommendations, with adults consuming an average of over 3,500 mg per day.¹ The *Dietary Guidelines for Americans* recommends no more than 2,300 mg per day of sodium, and 1,500 mg for specific populations.² The gap between recommended limits and average intake poses a serious public health risk because high sodium intake is a risk factor for hypertension in children³ and adults.⁴

Multilevel integrated sodium reduction efforts to alter food environments are recommended.⁵ To support sodium reduction at the community level, the Centers for Disease Control and Prevention launched the 3-year Sodium Reduction in Communities Program (SRCP) in 2010 to reduce sodium intake by helping create healthier food environments.⁶ Six communities were funded to implement community-based sodium reduction approaches. This article describes lessons learned from an evaluation of SCRP that may help practitioners implement similar types of programs.

Methods

Design

The project team used a multiple case study approach to examine lessons learned and describe implementation strategies across the funded programs. The team gathered documentary and interview data. Documentary data included communities' applications, logic models, implementation plans, evaluation plans/reports, progress reporting documents,

and media products; the team screened these sources for information on (1) program context, (2) descriptions of staff and partner activities, and (3) evaluation activities. Relevant information was summarized in a case study report template for each community.

Interview data consisted of semi-structured, in-depth telephone interviews with stakeholders in October to December 2011 (12-14 months after SRCP initiation). The team used the documentary data to create community-specific and respondent-specific interview guides. Interview topics included planning processes; implementation status; and challenges, facilitators, and lessons learned. All data collection instruments were approved by Research Triangle Institute International's Institutional Review Board and were determined to be nonresearch, thus exempt from federal policy for the protection of human research subjects. Interviews were recorded and transcribed.

Sample

Six funded communities implemented sodium reduction strategies in diverse venues and were located in New York (Broome County, Schenectady County, and New York City); California (Los Angeles County and Shasta County); and Kansas (Shawnee County). Highlights of each community are summarized in Table 1. (For more information, see http://www.cdc.gov/dhdsp/programs/sodium_reduction.htm.)

The team recruited participants by providing to the program director a list of respondent roles and by holding a planning call to identify individuals involved in implementing each approach. Interviews were conducted with state- and community-level program staff, partners, decision makers, and fiscal agents from each of the SRCP communities. Approximately nine interviews were conducted in each community (54 in total), and 2(6 interviews conducted with state-level representatives, for a total of 80 participants.

Measures

Measures included challenges, facilitators, and lessons learned from implementing sodium reduction strategies. "Challenges" were defined as any difficulty that hindered implementation of a strategy (e.g., lack of resources, lack of knowledge); "facilitators" were described as any aspect of the effort that supported implementation. This article presents "lessons learned," knowledge gained from implementation that participants identified as useful for revising their current efforts and informing future efforts.

Analysis

The team developed a codebook that included codes for "challenges," "facilitators," and "lessons learned." Two coders, using a qualitative software (NVivo), applied the codebook to transcripts. Fifteen percent of the transcripts were coded independently to test intercoder reliability; the team used Cohen's kappa (a calculation available in NVivo to assess the intercoder reliability). Cohen's kappa was maintained at .8 for all codes. The team ran NVivo reports on selected codes and analyzed the reports using a hybrid deductive and inductive approach for common lessons across the communities. The deductive approach involved reviewing each community's case study report for common challenges, facilitators, and lessons learned, then listing the findings and analyzing the coding reports using this list. The

project team used the inductive approach to assess whether new or additional themes emerged.⁸ This analysis yielded expansions of the team's understanding of common lessons.

Results

The results presented here are not meant to be an exhaustive list of lessons learned specific to interventions but rather an overview of common planning and early implementation lessons from the SRCP communities. In particular, the focus is to highlight lessons across varying types of community-based interventions that are specific to sodium reduction efforts, but when taken more broadly, can be applied to other nutrition strategies. Respondents identified five key considerations for implementing multiple sodium reduction approaches across various venues: (1) build relationships with partners to understand their concerns, (2) involve individuals knowledgeable about specific venues early, (3) incorporate sodium reduction efforts and messaging into broader nutrition efforts, (4) design the program to reduce sodium gradually to take into account consumer preferences and taste transitions, and (5) identify ways to address the cost of lower-sodium products. Each of these lessons learned is summarized in Table 2.

Discussion

Summary

Addressing sodium reduction using a community-based approach is an important component of achieving meaningful change in dietary sodium consumption. These communities demonstrate that it is possible to work in a variety of settings, such as restaurants, schools, worksites, and hospitals, with the goal of lowering the amount of sodium in offered foods.

Limitations

The evaluation has several limitations. First, these results provide a program snapshot, which is time-bound and reflects the progress of early implementation. Second, the findings are derived from self-reported implementation experiences. Third, the team interviewed individuals involved in implementing strategies. End users were not represented and may have had a different perspective.

Significance

Despite these limitations, the lessons learned from these six communities may assist public health practitioners planning their own community-based sodium reduction interventions.

Acknowledgments

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention. This work has been funded by the Centers for Disease Control and Prevention Cooperative Agreement DP10 1019

References

1. US Dept of Agriculture, Agricultural Research Service. [Accessed September 25, 2013] What we eat in America, NHANES 2009–2010. Available at: www.ars.itsda.gov/Services/docs.htm?docid-18349

2. MMWR. Vital signs: food categories contributing the most to sodium consumption in the United States, 2007-2008. *MMWR*. 2012; 61:92–98. [PubMed: 22318472]
3. Yang Q, Zhang Z, Kuklina EV, et al. Sodium intake: and blood pressure among US children and adolescents. *Pediatrics*. 2012; 130:611–619.
4. Institute of Medicine. *Dietary Reference Intakes: Water, Potassium, Sodium Chloride, and Sulfate*. Washington, DC: National Academy Press; 2004.
5. Cobb LK, Appel LJ, Anderson CA. Strategies to reduce dietary sodium intake. *Curr Treat Options Cardiovasc Med*. 2012; 14:425–434.
6. Mugavero K, Losbv JL, Gunn JP, et al. Reducing sodium intake al the community level: the sodium reduction in communities program. *Prev Chronic Dis*. 2012; 9:E168. [PubMed: 23171670]
7. Us Dept of Agriculture. [Accessed February 7, 2012] MyPlate. Available at: <http://www.choosemyplate.gov/>
8. Patton, MQ. *How to, Use Qualitative Methods in Evaluation*. Newbury Park, Calif: Sage Publishing; 1987.

SO WHAT? Implications for Health Promotion Practitioners and Researchers

What is already known on this topic?

Researchers and public health practitioners have suggested that multilevel efforts can be implemented to reduce sodium in foods and effectively reduce sodium intake. Little evidence is available on how to implement such efforts effectively, particularly at the community level.

What does this article add?

This article provides insights that may help practitioners implement community-based sodium reduction approaches.

What are the implications for health promotion practice or research?

The lessons from this evaluation could be applied to other community-based nutrition efforts.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 1
Sodium Reduction in Communities Program (SRCP) Settings and Goals

SRCP Site	Settings	Goals
Broome County Health Department, New York	Grocery stores	To promote and improve access to and availability of lower-sodium products
	Schools	To reduce sodium content in school meals and competitive foods
	Meals for older adults (congregate meal sites and home-delivered meals)	To reduce sodium in served meals
Schenectady County Public Health Services, New York	Independent restaurants	To reduce the sodium content in meals
	Meals for older adults (congregate meal sites, home-delivered meals, and one county-operated nursing home)	To reduce sodium content in meals served at a nursing home, senior meal sites, and through the home-delivered meals program
New York City Department of Health and Mental Hygiene, New York	Restaurant suppliers and independent restaurants	To improve access and availability of lower-sodium products
	Hospitals	To implement food standards that include sodium reduction for hospital retail food venues
Los Angeles County Department of Public Health, California	Schools	To reduce the sodium content in school meals
	County government departments that purchase, distribute, or sell food	To improve the nutritional quality of meals, including the integration of sodium reduction strategies into food service contracts
Shasta County Public Health, California	Independent restaurants	To reduce sodium content in meals
	Schools	To reduce sodium content in meals for children
	City government	To establish sodium reduction strategies for foods sold in one government facility
Shawnee County Health Agency, Kansas	Convenience stores	To increase the accessibility of lower-sodium foods through product placement and promotion strategies
	Government agencies	To increase the availability of lower-sodium foods
	Private businesses	To increase the availability of lower-sodium foods

Table 2
Illustrative Examples of Implementation Challenges and Lessons Learned From
Implementing Community-Based Sodium Reduction Strategies

Example of Implementation Challenge	Lesson Learned	Suggested Strategy to Overcome Challenge
Store owners were reluctant to meet as a group as they saw the others as competitors and did not want to share their pricing strategies with them. <i>"We'd love to get involved in things like that, but you're working with all of our competitors, too. We don't want them to know our pricing strategies."</i> (Store owner)	Build relationships with partners to understand their concerns.	Spend time individually with partners to clarify how they operate, how procurement works in diverse settings, what challenges partners face, and their motivation for participation. After learning about store owners' concerns, program staff organized individual meetings with store owners, which proved more successful in establishing their buy-in for sodium reduction efforts.
Program staff had difficulty recruiting restaurants to actively participate and lacked a clear understanding of the restaurant environment and what sodium reduction changes are sustainable.	Involve individuals knowledgeable about specific venues early.	Engage individuals with venue-specific expertise formally during the planning and early stages of implementation in project meetings, site visits to venues, and other project activities to learn from them how venues operate and what to consider in changing procurement and cooking practices. Rely on knowledgeable individuals to identify feasible strategies for sodium reduction such as changing base ingredients (i.e., those used in multiple dishes), base recipes (i.e., a recipe used for multiple dishes), and placement and pricing of food items.
One program had other ongoing nutrition public education efforts; staff did not want to duplicate efforts or create competing messages. <i>"Integrating with [and] not duplicating other people's effort really, really helped, too. That is why we [program staff] were able to gain broader reach [than] what we would otherwise [have] been able to do."</i> (Program staff involved in implementation)	Incorporate sodium reduction efforts and messaging into broader nutrition efforts.	Build on existing relationships and activities with partners and collaborations with extant health and wellness coalitions or advisory groups. Leverage resources and programs already in place to implement sodium reduction and messaging in the community.
Restaurant owners were reluctant to reduce the sodium content in their meals for fear of negative reactions from customers.	Design the program to reduce sodium gradually to take into account consumer perceptions and taste transitions.	Recommend to restaurant owners (and partners in other food service venues) to reduce sodium gradually by (1) making minor changes to meals and recipes such as using half lower-sodium soup base and half conventional soup base; (2) removing or reducing higher-sodium additives from the recipe; (3) using herbs or other spices to enhance flavor; (4) offering healthier alternatives as default side items; and (5) placing higher-sodium condiments on the side.
Food service managers and restaurant owners were reluctant to purchase lower-sodium products because of the often higher cost of these items.	Identify approaches to address the cost of lower-sodium products.	Offer approaches for overcoming partner concerns about the higher cost of some lower-sodium products such as (1) making minor recipe or meal modifications that are not as cost prohibitive and (2) leveraging buying power through a buying cooperative to purchase lower-sodium items at a more affordable price.