

## B'More Healthy Communities for Kids, a Multilevel Obesity Prevention Program for African American children: Selected Program Impacts and Sustainability

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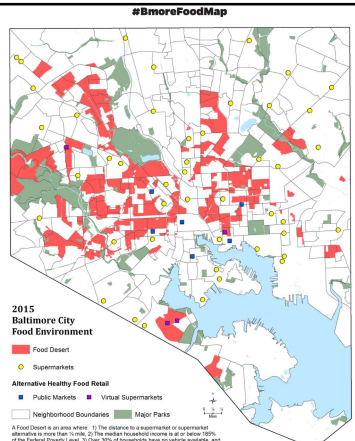
June 9, 2017



### Topics

- Describe the different components of the BHCK multi-level multicomponent trial
- Briefly present process evaluation findings by intervention component (intensity)
- Discuss variation in intervention exposure (intensity)
- Present selected results at the wholesaler, corner store, carryout, adult caregiver (household) and child levels
- Sustainability

## Baltimore City Food Environment



## Corner stores



## Carryouts



## Previous studies, 2004-2012



### 15 corner stores

Increase stocking of healthier foods; Point of purchase promotions; Store owner training; Interactive sessions

**Increased stocking and sales of promoted healthier foods**

**Increased consumer purchase of healthier foods and healthier food preparation methods**



### 8 carryouts

Redid menus; increased/promoted healthier sides and beverages; lower cost combo meals

**Increased sales of healthier promoted items, increased total revenues**

**Increased consumer purchase of healthier foods**



### 16 recreation centers and their neighborhoods

Changing the food environment in neighborhoods (corner stores, carryouts, rec centers)

Youth peer educators, Rec center staff training

**Decreased BMI in children who were overweight or obese at baseline**

## Questions emerging from previous studies

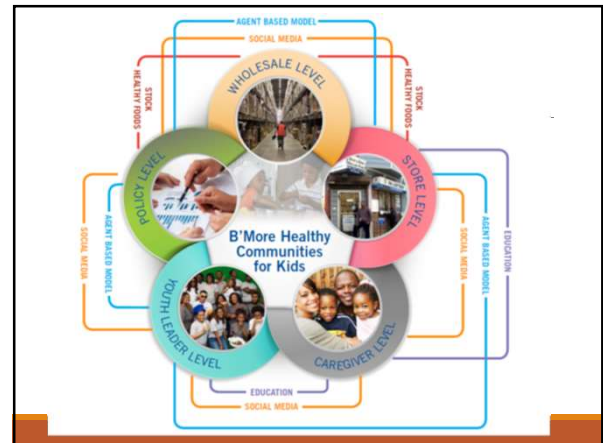
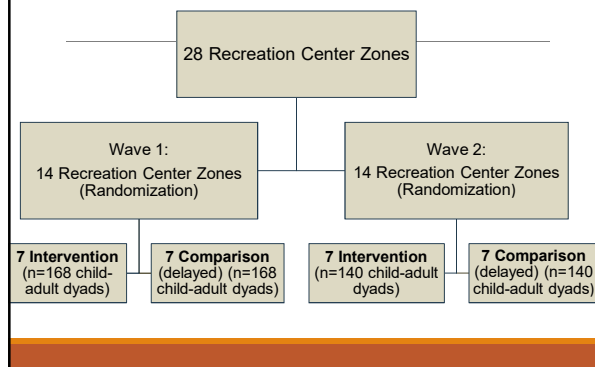
- What is the best combination of interventions to improve the food environment and impact childhood obesity in Baltimore?
- How to engage parents? Can we impact adults?
- How to assess implementation and impact?
- Are multi-level multi-component (MLMC) interventions “better” than other approaches?

## BHCK Aims



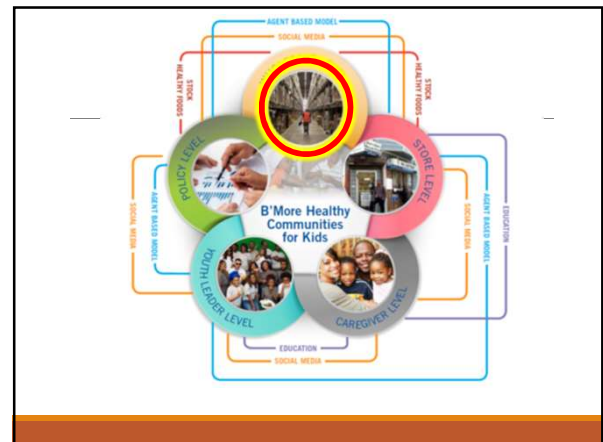
1. To implement a MLMC community-based obesity prevention program, operating at multiple levels of the Baltimore City food system
2. To increase affordability, availability, purchase, and consumption of healthy foods in 14 low-income minority neighborhoods (with 14 comparison)
3. To examine implementation at each level through a detailed process evaluation
4. To evaluate impact on multiple levels: healthy food pricing and availability; adult food purchasing, preparation and obesity; and child obesity, diet and psychosocial factors

## Study Design



## Process evaluation standards

Process Evaluation standard	High Standard
Reach	
# of stores participating in BHCK program	14
# of child (ages 10-14) interactions during interactive sessions in stores	10
# of adult (ages >18) interactions during interactive sessions in stores	20
Dose Delivered	
# of times BHCK team meets with a store owner	>2
Length of interactive session	>20 min
Average length of time spent with store owner per meeting (see above)	>30 min
# food samples distributed per interactive session	>20
# handouts distributed per interactive session	>20
# giveaways distributed per interactive session	>20
# of times educational display boards are used in interactive session per phase	12.00
Total # of promoted food posters positioned by BHCK team per phase	23
# of shelf labels on promoted foods positioned by BHCK team at the beginning of each phase	28
Fidelity	
% of correctly positioned shelf labels by the end of each phase	≥75%
# of promoted foods stocked per phase	28
# of NEW promoted foods introduced per phase	23
# of training videos watched by the end of the intervention	25
# of structural incentives earned per store by the end of the intervention	3
# of promoted foods stocked in BHCK refrigerator (if applicable)	24

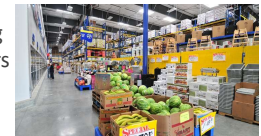


## Wholesaler Use by Corner Stores

Variable	Comparison stores (n=24)	Intervention stores (n=26)
B. Green Cash and Carry		
West	12.2 (10.1)	6.5 (8.2)
B. Green Cash and Carry East	4.1 (9.4)	7.6 (10.2)
Sam's Club	3.6 (4.3)	6.2 (6.8)
Walmart	2.1 (2.5)	4.7 (7.1)

## Wholesalers

- Increase their stocks and sales of affordable healthy food options
- Promote BHCK supported food and beverages through signage
- Provide discounts on healthier food items to BHCK-participating corner store and carryout owners



## Wholesaler Stocking Sheets

### Phase 1: Beverages

Sub-phase 1.1: Bottled Water

Weeks 1 - 2

Example Brands:

- Bottle Brand
- Blue Bird
- Blue Bird
- Blue Bird

### Phase 2: Snacks

Sub-phase 2.1: Sugar substitutions

Weeks 9 - 10

Example Brands:

- Blue Bird
- Blue Bird
- Blue Bird
- Blue Bird

### Phase 3: Cooking

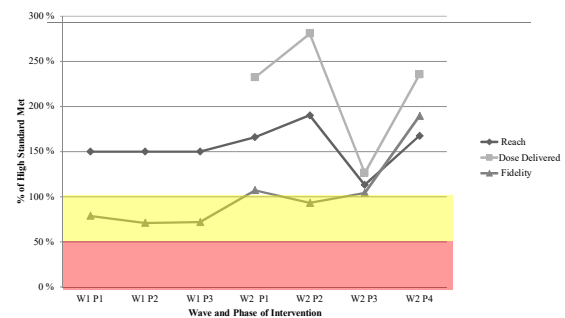
Sub-phase 3.1: Breakfast

Weeks 17 - 18

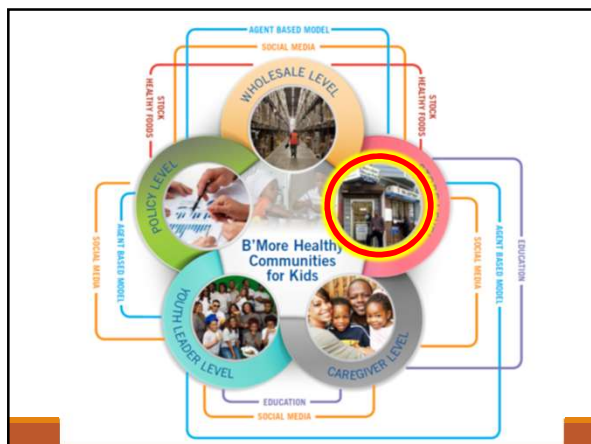
Example Brands:

- Blue Bird
- Blue Bird
- Blue Bird
- Blue Bird

## Wholesaler Process Evaluation Results



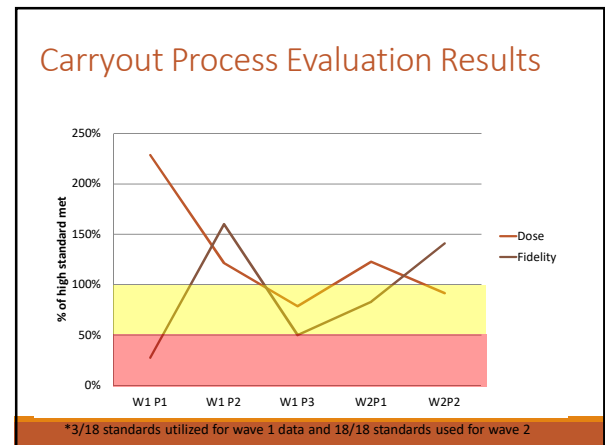
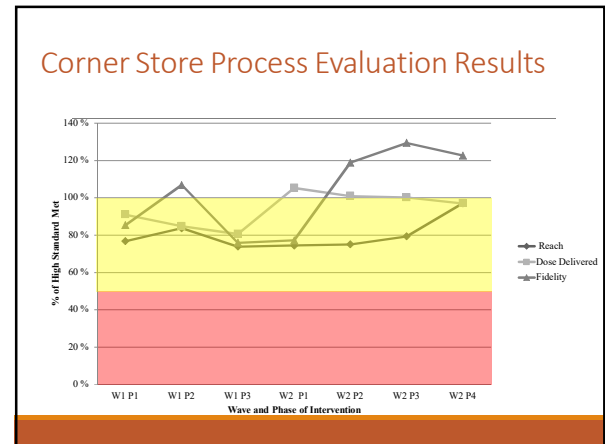
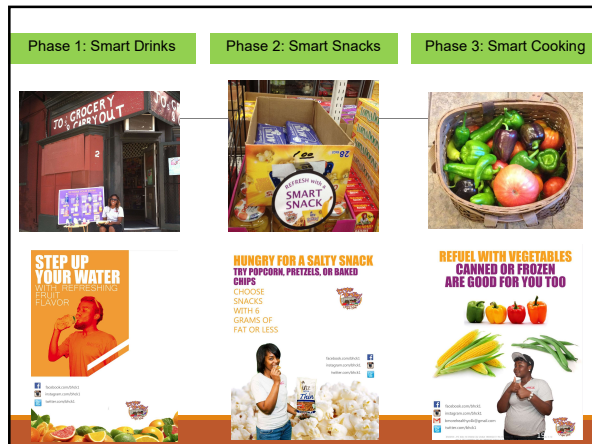
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## Corner Stores and Carryouts

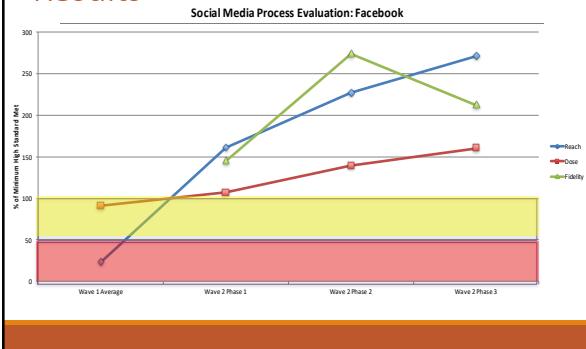
- Increase availability of healthier food and beverages using materials and incentives
- Increase demand for healthier food through point-of-purchase promotions
- Video trainings for corner store and carryout owners



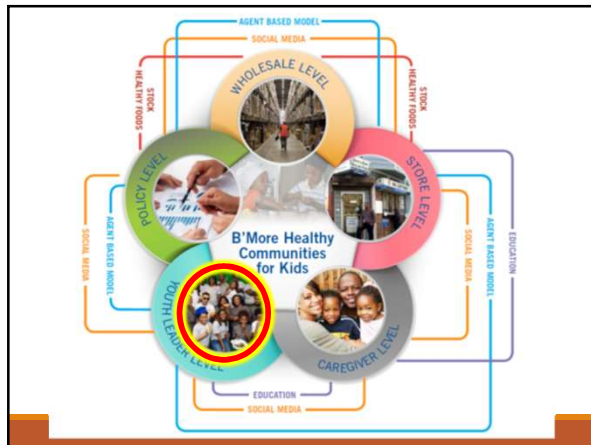
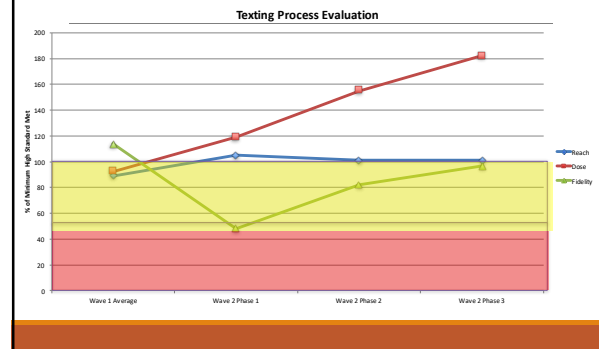




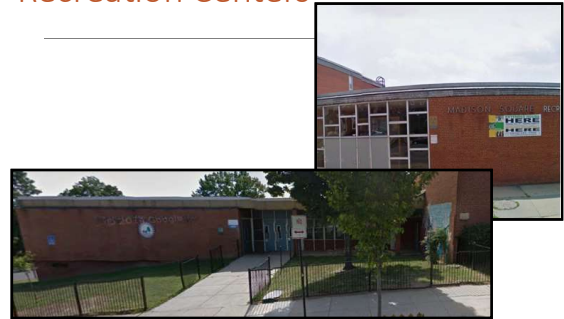
## Social Media Process Evaluation Results



## Texting Process Evaluation Results



## After-School Program in Baltimore Recreation Centers



## Youth Leaders: important and influential people to youth!



## BHCK Youth-Leader Program

45-60 minute sessions with the children (ages 10 and up) conducted by youth-leaders in rec centers

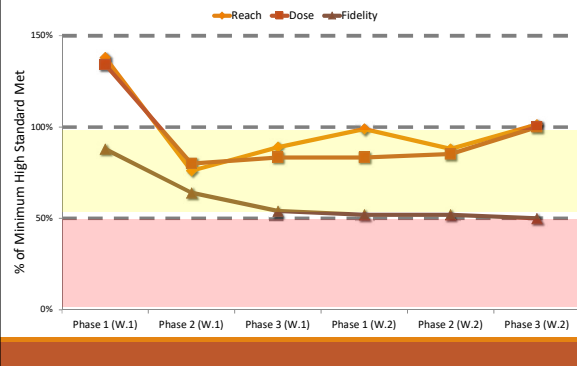
14 nutrition sessions focus on 4 topics:

1. Smart snacks
2. Breakfasts
3. Healthy cooking
4. Smart drinks



Sessions occur every other week for 6 months

## Youth Leader Process Evaluation Results



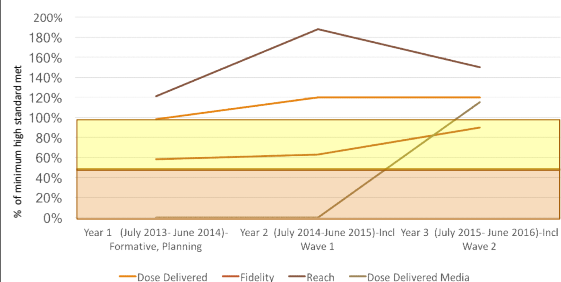
## Policy working group

- Working with key stakeholders:
  - To develop and build the evidence base to support policies for a healthier food environment in Baltimore City
  - To sustain BHCK activities
- Held 10 meetings with City stakeholders since kick-off in July 2013
- Develop simulation models to aid stakeholder decision-making

## Policy Working Group Meetings



## Policy WG Process Evaluation Results



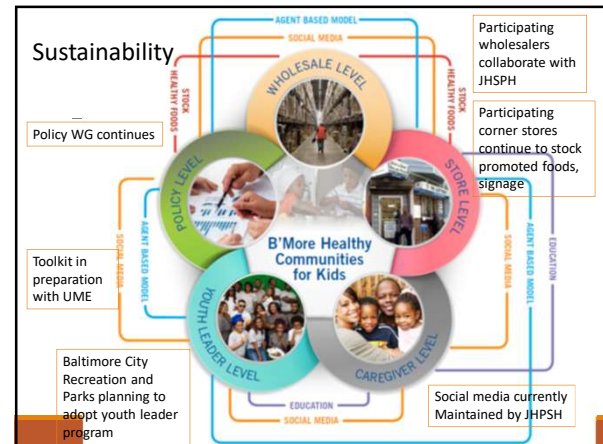
## Future Impact Analyses

- In children and adults
  - BMI (obesity)
  - Diet (Block Kids FFQ, FV screener (adults))
  - Food preparation
- In adults (households)
  - Food security

## Future Impact Analyses

- In carryouts
  - Preparation methods
  - Sales
  - Psychosocial factors
- Teasing out effects of specific components?
  - Possible using exposure data

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## Unexpected Consequence: Testimony at Public Hearing for Property Tax Credits for Urban Agriculture

- Provide 90% tax credit to owners of vacant lots if they will convert them to urban farms
- BLIFE simulation model modified to provide evidence for the bill



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## Some Lessons Learned for MLMC trials

- The “contamination” issue is important, challenging traditional RCT designs
- Implementation intensity will vary between and within components of MLMC trials
- Wave 2 implemented better than wave 1 → more impacts seen in wave 2

## Some Lessons Learned for MLMC trials

- Important to assess impact at multiple levels in MLMC interventions
- Critical to set standards for implementation, and achieve adequate exposure
- Sustainability planned for from the beginning, with heavy stakeholder leadership

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## Plan for Dissemination

## Scientific Dissemination

1. 29 papers published or in press
2. 10 papers under review
3. 20+ presentations at scientific conferences

Healthy Stores  
Promoting Healthy Living

B'More Healthy Communities for Kids (BHCK)

Introduction / Overview

The overarching goal is to develop and evaluate a community-based obesity prevention program, which operates at multiple levels of an urban food system (policy, environment, social norms, culture, knowledge, knowledge to behavior, etc.) and to implement the findings from this study to increase effectiveness, sustainability, and long-term impact of obesity prevention in underserved neighborhoods. The research will include interventions across all different levels, including policy, environment, culture, and social norms, and will include a focus on the food system. The program will also include a focus on the food system, including policy, environment, culture, and social norms, and will include a focus on the food system, including policy, environment, culture, and social norms.

Primary Aims

- 1. To develop and evaluate a community-based obesity prevention program, which operates at multiple levels of the Baltimore food system (policy, environment, social norms, culture, knowledge, knowledge to behavior, etc.) and to implement the findings from this study to increase effectiveness, sustainability, and long-term impact of obesity prevention in underserved neighborhoods.
- 2. To implement the program in underserved neighborhoods, and to evaluate the program's impact on the food system, including policy, environment, culture, and social norms.
- 3. To evaluate the program's impact on the food system, including policy, environment, culture, and social norms.

Staff

## Healthy Stores Website

B'More Healthy Communities for Kids  
Interventionist Manual of Procedures

Version 4 - September 2015

Will be made available on website:  
[www.healthystores.org](http://www.healthystores.org)

BHCK  
Interventionist  
Manual of  
Procedures

Youth Leader  
Training  
Manual

B'More Healthy Communities for Kids  
Youth Leader Training Toolkit

Johns Hopkins  
Global Obesity  
Prevention Center

Johns Hopkins  
Global Obesity  
Prevention Center

BHCK Nutrition Education Curriculum

Johns Hopkins  
Global Center on  
Childhood Obesity

B'MORE HEALTHY COMMUNITIES FOR KIDS  
COMMUNITY CENTER CURRICULUM

Peer-Mentoring Nutrition Curriculum

Johns Hopkins  
Global Obesity  
Prevention Center

B'MORE HEALTHY COMMUNITIES FOR KIDS  
PEER-MENTORING PROGRAM CURRICULUM



## Slide 45

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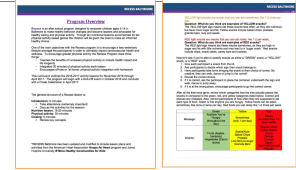
Shiple, Cara, 6/8/2017

Held 5 workshops  
with  
recreation  
center staff  
and  
directors



## Adaptation of Curriculum

Recess Baltimore, through the American Heart Association adapted some of our lessons to use in recreation center nutrition sessions.



## Partnering with Extension

Continued Partnership with University of Maryland Extension to identify BCRP staff to undergo Champions for Healthy Kids Training



Continued Engagement with Baltimore Stakeholders through BHCK Twitter

## Acknowledgements

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BC Council, BC Health Department, BC Department of Recreation and Parks, BC Dept of Planning, KAGRO, Jetto, B Greens, Family League, etc.

Thank you!

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## Impact Assessments: Individual Level

- Child-Level
  - Child Impact Questionnaire
  - Block Kids Food Frequency Questionnaire
  - Anthropometry
  - Child Exposure Questionnaire (only follow-up)
- Adult Caregiver-level
  - Adult Impact Questionnaire
  - FV Screener
  - Anthropometry
  - Adult Exposure Questionnaire (only follow-up)

Assessed Pre- and Post-Intervention  
Control and Intervention Groups

## Store Impact Questionnaire (SIQ)

- Store Classification
- Customer and Worker Attitudes
- Food Acquisition and Promotions
- Stocking and Sales of promoted foods
- Training Related Knowledge
- Psychosocial factors
  - Outcome Expectations: Promoted Food Sales, Outcome of BHCK
  - Self Efficacy-Stocking of Foods
  - Intentions to Sustain BHCK Promotions

Wave 1 – n= 15 intrv/ 10 control  
Wave 2 – n= 14 intrv / 16 control

## Carryout Impact Questionnaire (COIQ)

- Store Classification
- Food Acquisition of Promoted Foods
- Stocking and Sales of Promoted Foods
- Preparation Methods
- Training Related Knowledge
- Psychosocial factors
  - Self Efficacy: Food preparation and stocking
  - Intentions: Food preparation and Sustaining BHCK promotions
  - Outcome Expectations: Promoted Food Sales, Outcome of BHCK

Wave 1 – n= 6 intrv/ 8 control  
Wave 2 – n= 10 intrv/ 6 control

## Wholesale Environmental Assessment

Applied pre- and post-intervention & monthly

Stocking and Sale Assessment Per Food Group

- Number of food-item stocked;
- shelf label present,
- advertised in circular,
- price ,
- # of brands,
- # of varieties

## Baseline and Post Corner Store EA

- Accepted forms of food assistance
- Stocking and Sales Assessment
- Presence of fridge and deli case for fruits and vegetables
- Food Source Environment
- Interior/Exterior Store Environment

## Baseline and Post Carryout EA

- Accepted forms of food assistance
- Stocking and Sales Assessment
- Presence of fridge and deli case for fruits and vegetables
- Food Source Environment
- Interior/Exterior Store Environment

