

# Ripple Effects: Do the details of food assistance delivery impact individual health?

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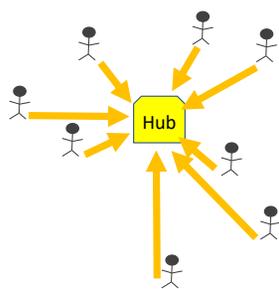
## Introduction

The link between food insecurity and poor health has renewed focus on developing novel food assistance programs. However, little work has been done to understand the impact of different modes of food assistance. We examined the differential health effects of 2 different models of food assistance delivery. Since both provide the same basic service—a 21-meal package of nutritious food modeled after the US Department of Agriculture My Plate guidelines—the health impacts of the two models should be similar. However, multiple disciplines focusing on human behavior including behavioral economics, psychology, and health behavior theory suggest that different delivery models might produce heterogeneous health benefits.

## 2 Models of Food Assistance

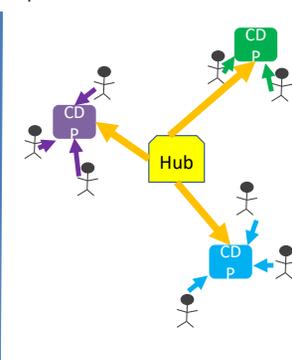
### Classic Model

Large, Centralized Food Assistance Program



### Hub & Spoke Model

Community Distribution Partners (CDPs) form a network of “spokes”



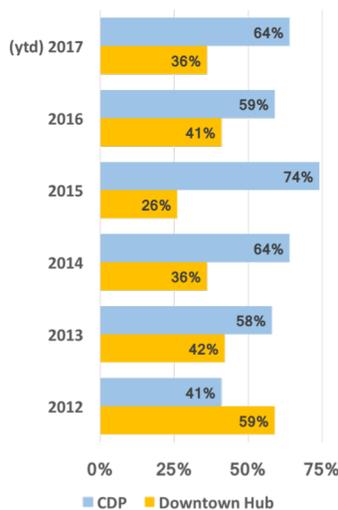
### Key Programmatic Differences:

- CDP sites require pre-registration and food pick-up for each client is available only 1 day per month
- The Hub serves as a walk-in pantry for clients where they may visit anytime Monday-Thursday, 8-11am
- Both CDP and Hub only allow 1 visit per client per month

## Methods

We examined the differential impact of food assistance provided at the Hub vs a CDP site using administrative data about clients collected as part of the food distribution process, including demographic, social, health, and economic data. Our sample includes data from all Crossroads clients who visited the Hub or a CDP at least twice between August 1, 2016 and July 31, 2017. Outcomes examined were (1) Body Mass Index (BMI) (2) self-rated health and (3) food insecurity.

Food Distributed by Crossroads Hub and Community Distribution Partners (CDPs) over time.



Sample	
<b>Outcomes</b>	
Overweight/Obese	86%
Fair/Poor Health	40%
Low/Very Low Food Security	53%
<b>Individual</b>	
Female	79%
Age, mean(sd)	50 (14)
Married	51%
<b>Race/Ethnicity</b>	
African American	31%
Hispanic	62%
Other Race	1%
<b>Household</b>	
Household Size, mean(sd)	4 (2)
Household includes kids	59%
≥1 adults completed high school	18%
<b>Economic</b>	
≥1 adults employed	43%
Monthly household Income	\$1341 (\$860)
Monthly household SNAP benefit	90 (163)
<b>Utilization</b>	
# food assistance visits, mean(sd)	6 (3.5)
Usage intensity, mean(sd)	78% (23%)

## Conclusions

- Higher utilization of food assistance is associated with less food insecurity, and utilization is higher at CDP sites.
- Future work will explore possible explanations:
  - Travel costs—CDP sites are near where clients live
  - Behavioral explanations—Food assistance provided at CDP sites is framed differently, which may affect clients decision to receive food

## Results

After controlling for client/household characteristics, CDP usage is associated with less household food insecurity.

Relationship between Food Assistance Type and Health Outcomes Controlling for Socio-Demographic Characteristics (N=963)

Outcomes:	Food Insecurity	BMI	Self-rated Health
Estimated Odds Ratios			
CDP client	0.527**	0.896	0.887
Female	0.956	1.845**	1.394+
Age	1.109**	1.072*	1.102**
Age squared	0.999**	0.999*	0.999*
Married	0.627**	0.768+	1.057
Non-Hispanic black	0.530*	1.895*	0.732
Hispanic	0.336**	1.925*	0.708
Other race	0.192**	1.233	1.471
Household size	0.998	1.104*	0.981
Household includes kids	0.592**	0.984	0.890
≥ 1 adults completed high school	0.783	1.249	0.799
≥ 1 adults is employed	0.581**	1.072	0.787
Household income	1.000**	1.000	1.000
Household receives SNAP	1.000	1.000	1.000

\*\* p<0.01, \* p<0.05, + p<0.1

The association between food insecurity and CDP usage is almost entirely explained by the frequency with which clients choose to use food assistance.

Relationship between Food Assistance Type and Health Outcomes Controlling for Socio-Demographic Characteristics & Food Assistance Utilization (N=963)

Outcomes:	Food Insecurity	BMI	Self-rated Health
Estimated Odds Ratios			
CDP client	1.026	0.763	0.754
Number of food assistance visits	0.869**	1.033	1.040+
Usage intensity	1.251	0.971	0.809
Female	0.936	1.865**	1.417*
Age	1.120**	1.071*	1.102**
Age squared	0.999**	0.999*	0.999*
Married	0.622**	0.771+	1.062
Non-Hispanic black	0.567+	1.857*	0.725
Hispanic	0.367**	1.879*	0.695
Other race	0.198**	1.217	1.480
Household size	1.039	1.092*	0.969
Household includes kids	0.550**	0.992	0.898
≥ 1 adults completed high school	0.752+	1.258	0.804
≥ 1 adults is employed	0.580**	1.066	0.788
Household income	1.000**	1.000	1.000
Household receives SNAP	1.000	1.000	1.000

\*\* p<0.01, \* p<0.05, + p<0.1

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