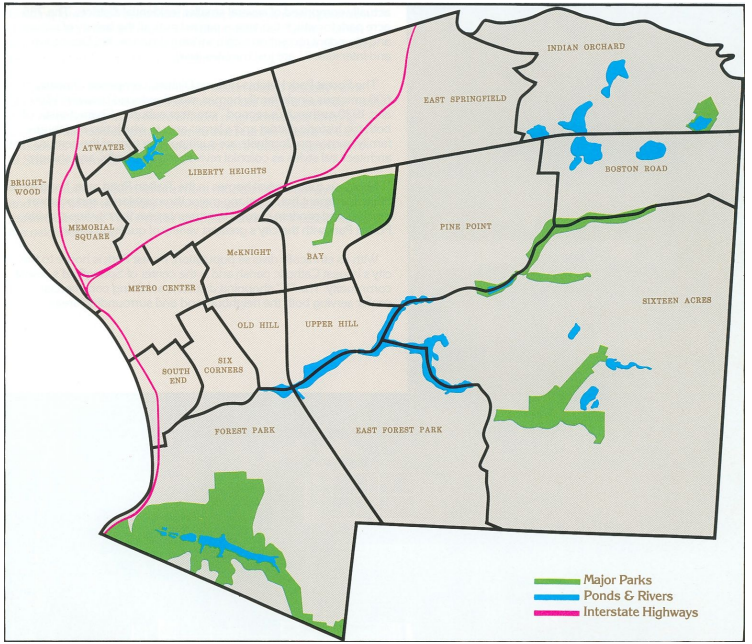
Addressing the Intersection of Food Insecurity and Early Childhood Development in Springfield, MA

Elisabeth McGovern, Emily Nuss, Prithwijit Roychowdhury, Poornima Manikantan and Daniel Wenzel

Our Soon-To-Be New Home, Springfield MA

- Population estimated at 154,758
  - White - 58%
  - Hispanic - 43.2%
  - Black - 21%
  - White, non-Hispanic - 33%
- Foreign-born persons -10.1%
- Persons over the age of 5 speaking a language other than English at home - 39%
- Median household income - $35,742
- 29.7% of population is living in poverty
  - 44% under 18 years old



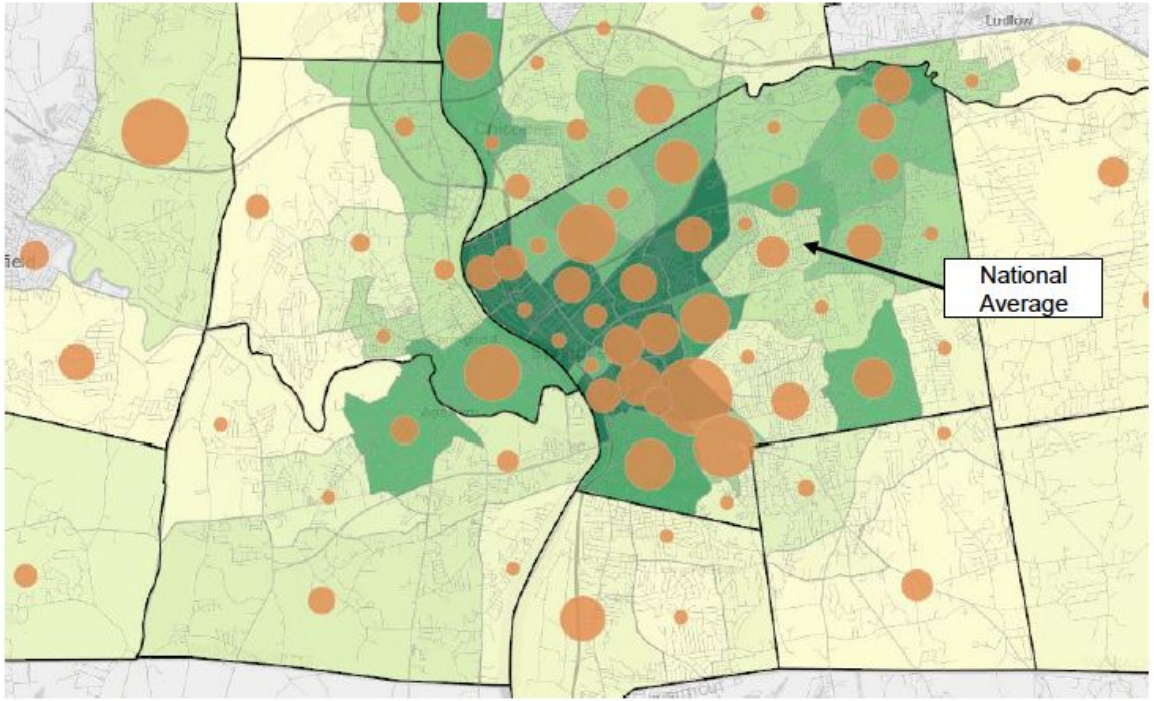
Data according to 2017 US Census Bureau: https://www.census.gov/quickfacts/springfieldcitymassachusetts

How does poverty affect children in Springfield?

- The majority of young children live in areas with low household incomes and high crime rates
- Areas of Springfield that are low-income have low preschool enrollment levels
- Food deserts - areas where access to fresh produce is limited
  - Often due to limited transportation and a lack of supermarkets in large areas of Springfield
- Annual household spending on fruits and vegetables in Springfield is significantly lower than the national average ($1683.99)

Data from the MECCS Community Maps by The Ripples Group

The western region of the city has higher poverty levels and higher child populations



The national poverty rate is 12.7%

Percent of Households Below Poverty Level

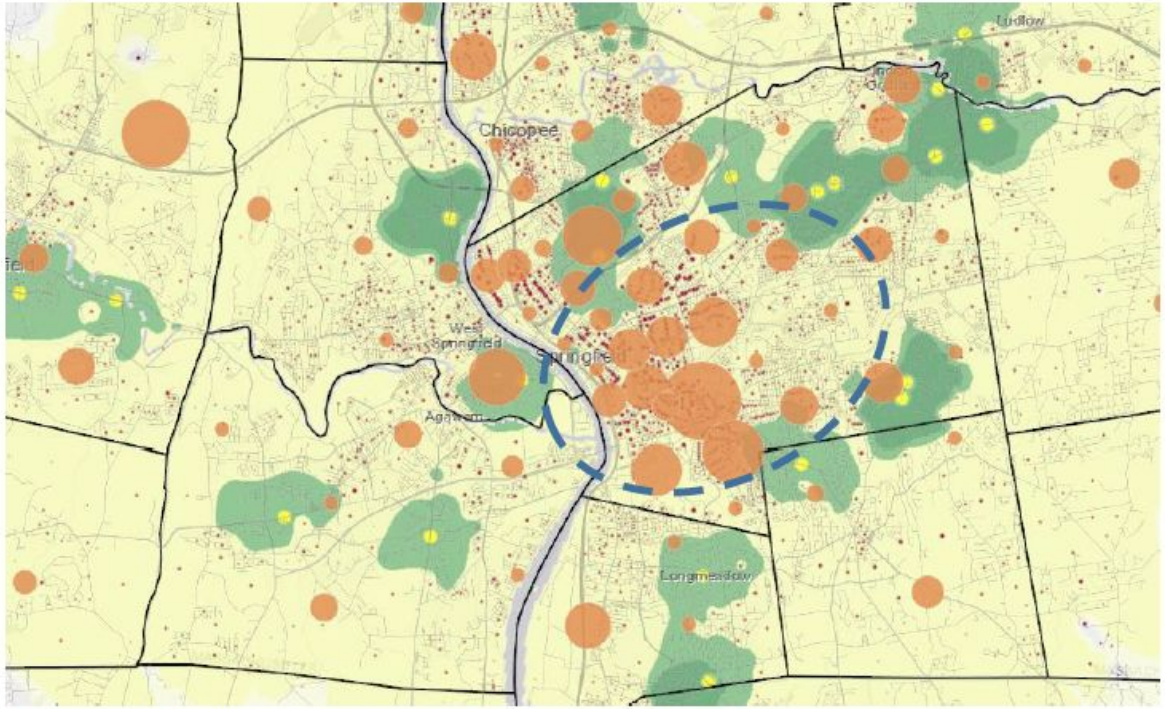
>36
20
<4

Population Under 5

> 611
500
400
300
< 206

Sources: "USA Tracts" by Esri from U.S. Census, "Income and Poverty in the United States: 2016" by US Census Bureau https://www.census.gov/library/publications/2017/demo/p60-259.html

Large areas of Springfield have limited access to supermarkets, especially in the southern part of the city



The supermarkets included have annual sales of at least $1 million

Supermarket

Supermarkets within 1 mile walk

- 11 or more
- 3-10
- 2
- 1
- 0

Population Under 5

- > 611
- 500
- 400
- 300
- < 206

Sources: "USA Tracts" by Esri from U.S. Census, "USA Supermarket Access" by Jim Herries from Demographic data from U.S. Census and Esri Business location from infoUSA

Enter SquareOne!

- SquareOne is a private, nonprofit organization that offers a range of family-support and education programs
  - Healthy Families - home visiting program to support parents prenatally through the child's third birthday
  - King Street Preschool and Child Care
  - Dr. Yum Nutrition
  - SPARK Physical Fitness Program
  - Mom Squad - job training group for mothers at risk of homelessness
- Supporting early development and strengthening families to break the cycles of poverty, homelessness, poor nutrition and food insecurity, and unemployment

SquareOne's Efforts to Fight Food Insecurity

Connecting Families to Resources

SM
SNAP
Supplemental
Nutrition
Assistance
Program

The Food Bank
of Western Massachusetts

OPEN PANTRY
COMMUNITY SERVICES, INC.

Dr. Yum Project and Classroom Nutrition

- Dr. Yum - a nutrition curriculum designed to introduce healthy foods to children early in development
  - Hands-on engagement with food preparation to encourage kids to try seasonal fruits and vegetables
  - Practiced monthly in preschool classes at SquareOne's King Street Preschool
  - Preschoolers prepare their own food and rate their snacks on a scale from Yum to Yuck!
- The food service team at King Street Preschool puts great thought and preparation in delivering a healthy breakfast, lunch and snack to all of its preschoolers
  - Substituting in whole grains, veggies, and low sodium options at every opportunity!

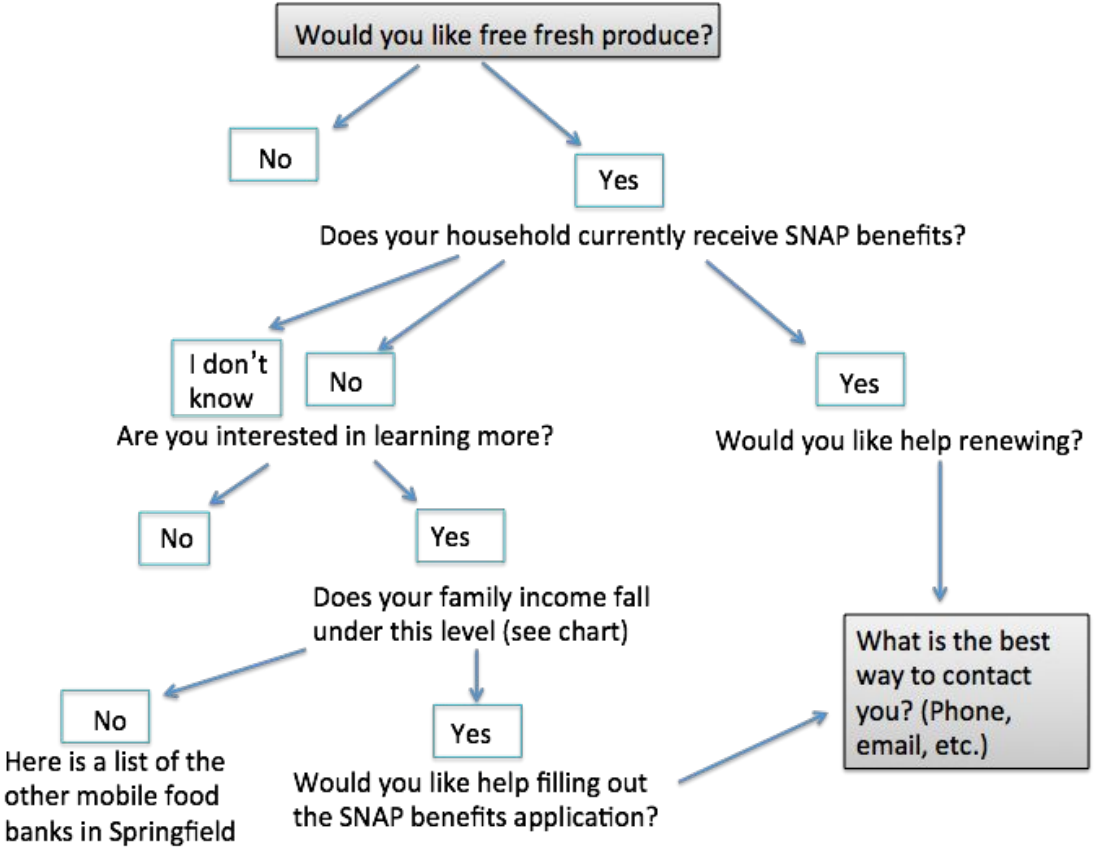
SquareOne's Mobile Market Site

- Hosts a Mobile Food Bank Site through the Food Bank of Western Massachusetts
  - Fresh produce, dairy and meat offered to ANY person who comes
    - No eligibility requirement
    - Each individual is asked for their zip code and household size to gauge the need
  - Various sites throughout the city
  - Staffed by volunteers

Our Project: Assess Need for SNAP Benefits

- Interest in developing tool to assess demographics of who is utilizing the mobile market
  - Age, ethnicity, interest in additional services
- Engagement of individuals in getting or maintaining SNAP benefits
- Potential source of funding for SquareOne
  - Reimbursement of $50 to SquareOne for each person they help apply to SNAP benefits
- Created a survey to be distributed at the Mobile Market
- Designed an algorithm to identify need for and referral to SNAP benefits

SNAP Algorithm



Algorithm Goal: To determine whether there is a need for a Square One service aimed at helping families enroll in SNAP benefits

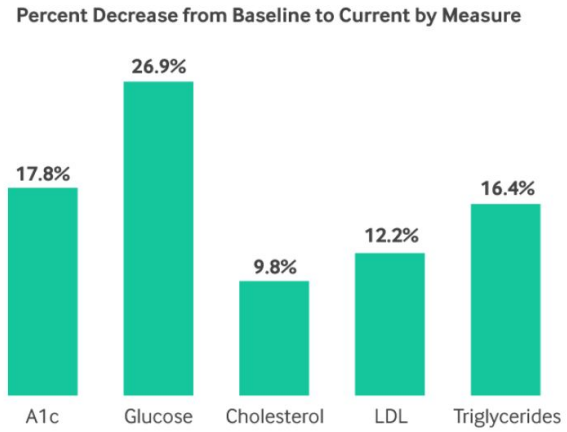
SNAP Enrollment Criteria

Household Size	Max. Monthly Income	Max. Benefit Level
1	$1,980	$192
2	$2,670	$352
3	$3,360	$504
4	$4,050	$640
5	$4,740	$760
6	$5,430	$913
7	$6,122	$1,009
8	$6,815	$1,152

Opportunities for Integration with Baystate ACO?

Biometric Outcomes for Fresh Food Farmacy Enrollees

Patients included below are those who enrolled and received food as part of the Fresh Food Farmacy program AND had both a baseline and follow-up reading for the applicable biometric.



Baseline Reading- biometric value at time of enrolled in FFF
Current Reading- most recent biometric value
Data as of 3/01/2018

Source: Authors and Geisinger Clinical Informatics

- Some ACO networks are already investing heavily in extending services in housing, transportation and food security
- For Geisinger Health System in Pennsylvania this looks like an expansion in their Fresh Food Farmacy initiative

Providing Free Food as a Treatment for Diabetes Yields Improved Outcomes for Patients While Reducing the Cost of Care

Meals

175,000 meals per year. ¢**60** per meal. **$2,400** per patient per year.

Clinical Results (over 18 months)

≥40% **decrease in the risk of death or serious complications***

Meals: HbA1c levels dropped an average **2.1** percentage points with attendance of the Diabetes Self-Management Class

Medication: HbA1c levels using medication drop an average **0.5 to 1.2** percentage points

Financial Results (over 18 months)

80% **drop in costs for our pilot patients**

$240,000 per member to **$48,000** per member per year

Opportunities for Integration with Baystate ACO?

Table 1

IOM Phase 2 Report

Summary of Candidate Domains for Inclusion in all EHRs

Race / ethnicity*
Education
Financial resource strain
Stress
Depression*
Physical activity
Nicotine use / exposure*
Alcohol use*
Social connections / social isolation
Exposure to violence: Intimate partner violence
Neighborhood characteristics (*e.g.*, census-tract median income)

*Already routinely captured in EHRs

- A 2017 study explored the idea that *"standardizing SDH data collection and presentation could lead to improved patient and population health outcomes in CHCs and other care settings"* (Gold et. al)

- Is there a way to incorporate notes from home-visitors through the Square One program into the electronic medical record used by medical providers to allow them to get a better sense of their patient's home environment?
    - Is there a screening tool that could be implemented by home visitors to capture data about the domains that are *not* routinely captured in the EHRs by clinicians?

Gold R, Cottrell E, Bunce A, et al. Developing Electronic Health Record (EHR) Strategies Related to Health Center Patients' Social Determinants of Health. *J Am Board Fam Med*. 2017;30(4):428-447.

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