

# Food Insecurity: Universal Screening using the Hunger Vital Sign

**Rx for Life-Prescribing Parks & Food for Better Health**

Kofi Essel, MD, MPH, FAAP

Pediatrician, Children's Health Center at Anacostia – Goldberg Center for  
Community Pediatric Health

Director, Community/Urban Health Scholarly Concentration, The George  
Washington University School of Medicine and Health Sciences

Assistant Professor of Pediatrics, Children's National Health System & GWUSMHS

May 24, 2018



**Children's National**™

# Disclosures

- I have no relevant financial relationships to disclose or conflicts of interest to resolve
- I will discuss no unapproved or off-label pharmaceuticals



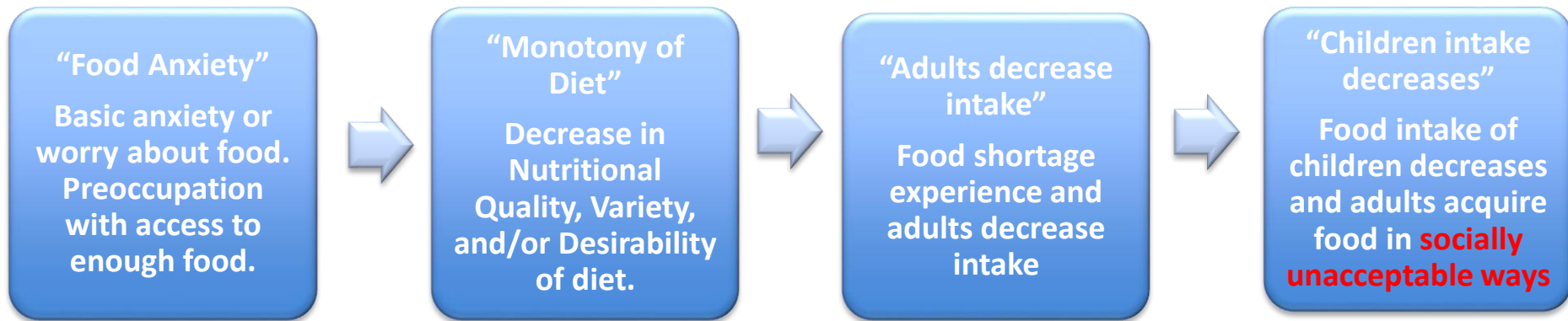
# WHAT IS FOOD INSECURITY?



Children's National™

- Food insecurity describes “the **limited or uncertain availability** of nutritionally adequate and safe foods, or limited, or uncertain ability to acquire acceptable foods in socially acceptable ways.”
  - Core Indicators of Nutritional State for Difficult to Sample Populations, 1990
- Food Security is when “all people, at all times, have **physical and economic access** to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”
  - World Food Summit, 1996

# Lived Experiences of Food Insecure Households



# A Conceptual Framework: Cycle of Food Insecurity & Chronic Disease



## Household Coping Strategies:

- Buy inexpensive/unhealthy food **(78.7%)**
- Eaten food past expiration date **(56.1%)**
- Received help from family/friends **(52.5%)**
- Buy food dented/damaged packages **(51.7%)**
- Water down food/drinks to extend **(40.0%)**
- Sold or pawned personal property **(34.9%)**
- Grow food in a garden **(22.7%)**

*Hunger in America, 2014*

Adapted: Seligman HK, Schillinger D. N Engl J Med. 2010;363:6-9.



**Children's National**™

# HOW ARE CHILDREN AFFECTED?



- Physical Health Impacts
- Mental Health & Developmental Impacts
- Classroom Impacts





# Physical Health Impacts

- **Poorer health** of Children and adolescents as reported by parents
- Lower bone mineral content in adolescent boys
- **Iron deficiency anemia** among young children and adolescents
- More stomach aches, frequent headaches, and colds among children
- Higher hospitalization rates among young children
- Higher numbers of chronic health conditions among children
- **+/-Obesity**



# Mental Health & Developmental Impacts

- Insecure attachment and less advanced mental proficiency in toddlers
- **Higher rates of developmental risk** among young children
- **Behavioral problems** among 3yo children
- Poorer psychosocial function and psychosocial development among school-age children
- Higher rates of **depressive disorder and suicidal symptoms** among adolescents
- More **anxiety and depression** among school-age children



# Classroom Impacts

- **Impaired development of non-cognitive abilities** among school-age children
  - Interpersonal relations, self-control
- More “internalizing” behavior problems among children
  - Withdrawal or anxiety
- Lower math achievement and math progress in kindergartners
- **Lower math and reading gains** from kindergarten to third grade
- Lower arithmetic scores and higher likelihood of repeating a grade among children ages 6-11



# HOW ARE ADULTS AFFECTED?



## Chronic Diseases, Health Conditions, and Health Behaviors Associated with Food Insecurity in Adults

Arthritis	<b>Diabetes</b>	Less physical activity
Asthma	Functional Limitations	<b>Mental Distress</b>
Cancer	Hepatitis	<b>Obesity</b>
Chronic Kidney Disease	Higher levels of C-reactive protein	<b>Poor Dietary intake</b>
COPD	Hyperlipidemia	Poor or fair health status
Cigarette Smoking	Dyslipidemia	Pregnancy Complications
Coronary Heart Disease	<b>Hypertension</b>	Stroke
<b>Depression(+Maternal Depression)</b>	Insufficient Sleep or poor sleep outcomes	Suicidal Ideation

## Chronic Diseases, Health Conditions, and Health Behaviors Associated with Food Insecurity in Seniors

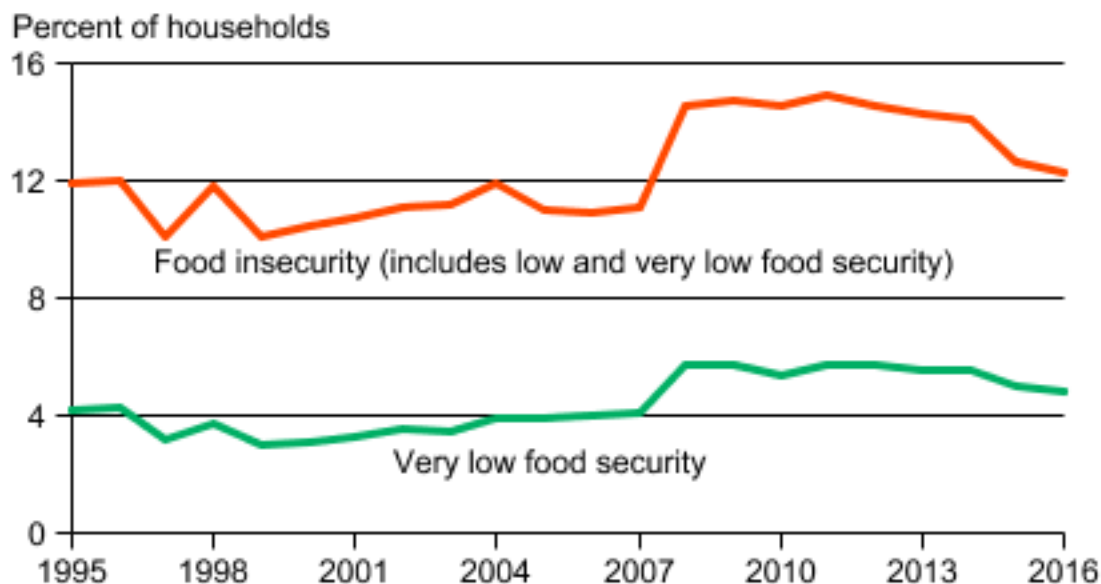
Asthma	History of a heart attack	Obesity
Congestive Heart Failure	Hypertension	Osteoporosis
<b>Depression</b>	Limitations in activities of daily living	Peripheral Arterial Disease
Diabetes	Lower cognitive function	<b>Poor or fair health status</b>
Gum Disease	<b>Lower intake of calories and key nutrients(i.e. protein, iron, calcium, Vitamin A&amp;C)</b>	

# FOOD INSECURITY NATIONAL TRENDS



Children's National™

## Trends in prevalence rates of food insecurity and very low food security in U.S. households, 1995-2016



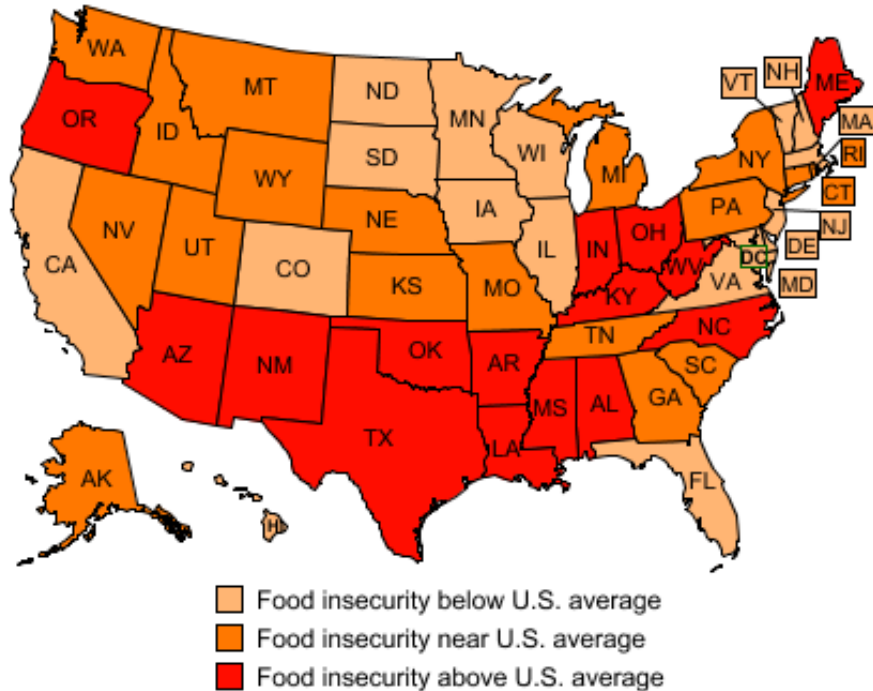
Note: Prevalence rates for 1996 and 1997 were adjusted for the estimated effects of differences in data collection screening protocols used in those years.

Source: USDA, Economic Research Service, using data from Current Population Survey Food Security Supplement.





## Prevalence of food insecurity, average 2014-16



Source: USDA, Economic Research Service, using data from the December 2014, 2015, and 2016 Current Population Survey Food Security Supplements.

## Virginia

- 2014-2016 Average: 9.9%
- 2014-2016 National Average: 13.0%

## Fairfax County Overall

- Total Population: 1,132,887
- Largest Population & Largest Food Insecurity population
- 5% Overall Food Insecurity Rate
- 1 in 20 Individuals

## Children in Fairfax County

- Total Population Children: 271,704
- 8.7% Child Food Insecurity Rate
- 1 in 12 children



Children's National™

# Highest Risk



# FOOD INSECURITY IS NOT JUST ABOUT POVERTY

- Sociodemographics
- Education/Employment Status
- Past & Present Financial Hardships
- Employment
- Health Insurance
- Environment(availability of affordable nutritious food)
- Time
- Housing
- Health Status/Impairments
- Abuse
- Social Support
- Food Skills/Capabilities

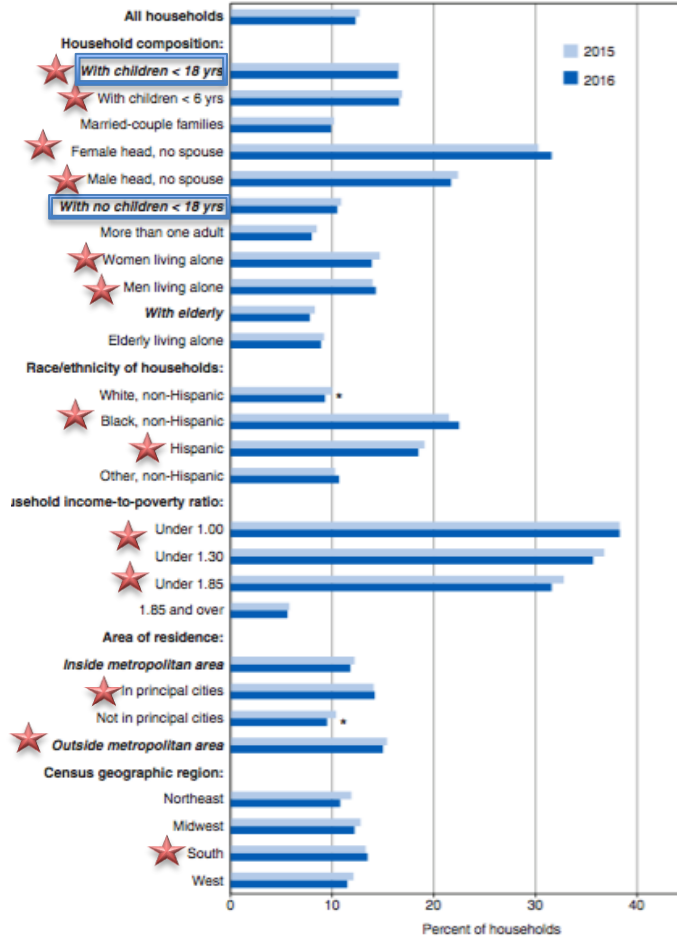


## Family of 4 & Federal Poverty Line

100% FPL	\$24,600
130% FPL	\$31,980
185% FPL	\$45,510

>185% of FPL=  
**24%** of the Food  
 Insecure Population

Figure 4  
 Prevalence of food insecurity, 2015 and 2016



\*Change from 2015 to 2016 was statistically significant with 90-percent confidence ( $t > 1.645$ ).  
 Source: USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau, 2015 and 2016 Current Population Survey Food Security Supplement.

Highest Risk

# CLINICIAN'S ROLE IN MANAGING FOOD INSECURITY



Children's National™

## POLICY STATEMENT

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

American Academy  
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

# Promoting Food Security for All Children

COUNCIL ON COMMUNITY PEDIATRICS, COMMITTEE ON NUTRITION

## 2015

- Screen & Intervene @ “scheduled health maintenance visits or sooner if indicated”
- Advocate for programs/policies that end childhood food insecurity
- Hunger Vital Sign recommendation





# Academy of Nutrition and Dietetics



AMERICAN ACADEMY OF  
FAMILY PHYSICIANS  
STRONG MEDICINE FOR AMERICA



Children's National™



AAP recommends that pediatricians use the Hunger Vital Sign™ to screen for food insecurity in practice. The two questions are:

1. Within the past 12 months, we worried whether our food would run out before we got money to buy more.

often true     sometimes true     never true     don't know/refused

2. Within the past 12 months, the food we bought just didn't last and we didn't have money to get more.

often true     sometimes true     never true     don't know/refused

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™



American Academy of Pediatrics  
DEDICATED TO THE HEALTH OF ALL CHILDREN™

**FRAC**  
Food Research & Action Center

## Addressing Food Insecurity: A Toolkit for Pediatricians

February 2017





## Pediatricians play a critical role in protecting children from food insecurity

### KEY FACTS ABOUT CHILDHOOD FOOD INSECURITY

#### Childhood food insecurity can lead to:

Poor Health Status  
Developmental Risk  
Mental Health Problems  
Poor Educational Outcomes

# 1 in 6

U.S. children  
live in a food-insecure  
household

#### Childhood food insecurity may present:

Developmental Delays  
Behavioral Problems  
Obesity  
Poor Growth  
Inappropriate Feeding Practices

### NUTRITION PROGRAMS TO KNOW

The federal nutrition programs play a critical role in improving food security, health, and well-being



SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM (SNAP)  
SPECIAL SUPPLEMENTAL NUTRITION PROGRAM FOR  
WOMEN, INFANTS, AND CHILDREN (WIC)  
CHILD CARE MEALS  
SCHOOL BREAKFAST AND LUNCH  
AFTERSCHOOL MEALS  
SUMMER MEALS



#### Prepare



**Educate and train** staff on food insecurity and the need for universal screening

**Follow AAP's** recommendation of screening at scheduled check-ups or sooner, if indicated

**Incorporate** food insecurity screening into the institutional workflow

**Show sensitivity** when screening for food insecurity

#### Screen



Use the AAP-recommended Hunger Vital Sign:<sup>®</sup>

1. "Within the past 12 months, we worried whether our food would run out before we got money to buy more."  
-often true -sometimes true -never true -don't know/refused

2. "Within the past 12 months, the food we bought just didn't last and we didn't have money to get more."  
-often true -sometimes true -never true -don't know/refused

Patients screen positive for food insecurity if the response is "often true" or "sometimes true" for either or both statements

Document and code the administration and results of screening in medical records

#### Intervene



**Administer** appropriate medical interventions per your protocols

**Connect** patients and their families to the federal nutrition programs and other food resources

**Document and track** interventions in medical records

**Support** advocacy and educational efforts to end childhood food insecurity



- Prepare
- Screen
- Intervene

# SCREEN



Children's National™



Children's National™

# Physician Lived Experiences with Screening

- Time & Workflow were not barriers to screening, but concerns about embarrassing families and being unable to provide adequate resources
- Clinicians reported that parents felt the screening showed caring, which reinforced the clinicians continued screening
- Suggested implementing screening before visit



*“At first, it was like, ‘oh, my gosh, another question.’ But then truly, once you got into the workflow, it **wasn’t that much additional [time]**”*

*“It’s a really **personal question**. You’re asking somebody about money. I mean, I think that’s probably why it’s just awkward, no matter what”*



# Family Lived Experiences with Screening

- Parents expressed initial surprise at screening followed by comfort discussing their unmet food needs
- Parents experience shame, frustration, and helplessness regarding FI, but discussing FI with their clinician helped alleviate these feelings
- Parents suggested practices could help them more directly access food resources, which, depending on income may not be available to them through government programs



*“As a parent, it’s horrible. Because **you don’t want to see your children in need of anything**. Of course, I keep it together for them.”*

*“I was really kind of shocked because when she did ask me, I was struggling at the time. I didn’t want to lie, but I didn’t want to be completely honest because **I didn’t want her to think I was neglecting my child.**”*

*“I was a little shocked because usually they don’t ask that. But it **gave me an opportunity** to say something to somebody who might be able to make a difference.”*



**Children's National**™

# Screen

- Goal: Screen **Universally** at scheduled health maintenance visits or sooner if indicated
- Prioritize Screening:
  - Routine Well Child Checks
  - Visits for nutrition related conditions
  - Emergency Room Visits
  - Hospital Admissions
  - Newborn care before discharge
- Team based approaches
- Multiple food insufficiency screeners available
  - **Goal: Identify and use screener best captures our patients in need and fits into our workflow.**





# PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

## Development and Validity of a 2-Item Screen to Identify Families at Risk for Food Insecurity

Erin R. Hager, Anna M. Quigg, Maureen M. Black, Sharon M. Coleman, Timothy Heeren, Ruth Rose-Jacobs, John T. Cook, Stephanie A. Ettinger de Cuba, Patrick H. Casey, Mariana Chilton, Diana B. Cutts, Alan F. Meyers and Deborah A. Frank

*Pediatrics* 2010;126:e26

DOI: 10.1542/peds.2009-3146

- Screen was done between 1998-2005 evaluating 30,098 caregivers w/children <3yo in pediatric hospital settings.
- Used the 18-item (\*Gold Standard\*) food security questionnaire
- 23% of Families were Food Insecure
- Food Insecure Families consistently answered question #1 & question #2 positively.
  - Question 1 and/or Question 2 were positive=
  - **97% sensitivity; 83% specificity**



Children's National™

## Questions Used To Assess the Food Security of Households in the CPS Food Security Survey

1. "We worried whether our food would run out before we got money to buy more." Was that often, sometimes, or never true for you in the last 12 months?
2. "The food that we bought just didn't last and we didn't have money to get more." Was that often, sometimes, or never true for you in the last 12 months?
3. "We couldn't afford to eat balanced meals." Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Yes/No)
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry, but didn't eat, because there wasn't enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn't enough money for food? (Yes/No)
9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Yes/No)
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

### *(Questions 11-18 were asked only if the household included children age 0-17)*

11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that often, sometimes, or never true for you in the last 12 months?
12. "We couldn't feed our children a balanced meal, because we couldn't afford that." Was that often, sometimes, or never true for you in the last 12 months?
13. "The children were not eating enough because we just couldn't afford enough food." Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children's meals because there wasn't enough money for food? (Yes/No)
15. In the last 12 months, were the children ever hungry but you just couldn't afford more food? (Yes/No)
16. In the last 12 months, did any of the children ever skip a meal because there wasn't enough money for food? (Yes/No)
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months, did any of the children ever not eat for a whole day because there wasn't enough money for food? (Yes/No)



# Hunger Vital Sign<sup>®</sup>

- 1. “Within the past 12 months, we worried whether our food would run out before we got money to buy more.”
- 2. “Within the past 12 months, the food that we bought just didn’t last and we didn’t have money to get more.”
- Yes or No in the last 12 months.
- Recommend: Often True, Sometimes True, Never True, or Don’t Know/Refused to answer for you in the last 12 mo.



# Addressing Food Insecurity

## \*Tips\*

- **Sensitivity**
  - Verbal vs Written/Electronic

- Provide Safe Setting
- Normalize Questions
- Parent Preferred Language
- Reassure
- Ask
- Acknowledge
- Connect
- Follow up



**INTERVENE**



**Children's National**™

# Federal Nutrition Programs

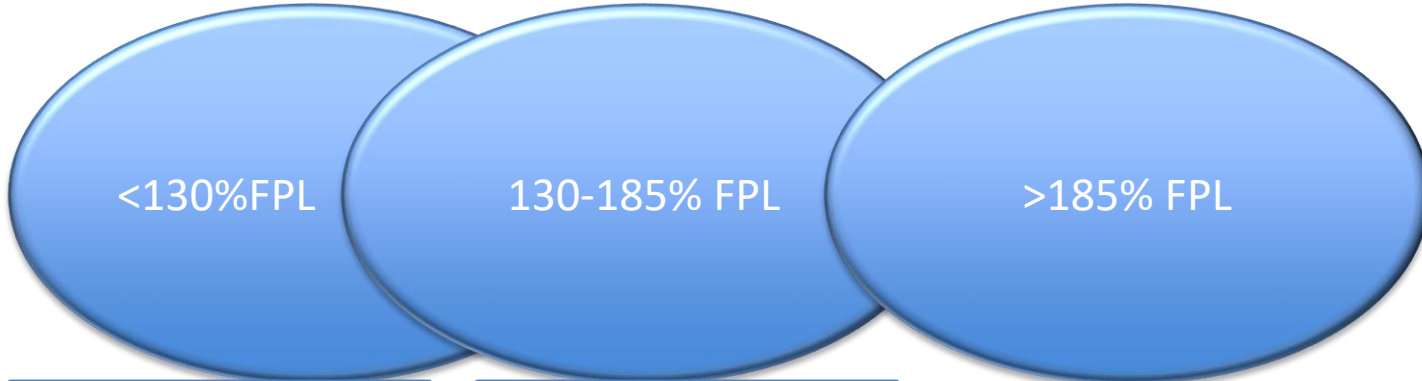
- Supplemental Nutrition Assistance Program (SNAP)
- Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Child Care Meals
- The Emergency Food Assistance Program(TEFAP)
- Commodity Supplemental Food Program(CSFP)
- School Breakfast & Lunch
- Afterschool Meals
- Summer Meals

Fairfax County  
Food Insecurity

49%

15%

36%



- SNAP
- WIC
- Free School Meals
- CFSP
- TEFAP

- WIC
- Reduced Price School Meals

- Charitable Response(Food Pantry, Food Prescription, Home delivered meals, etc)



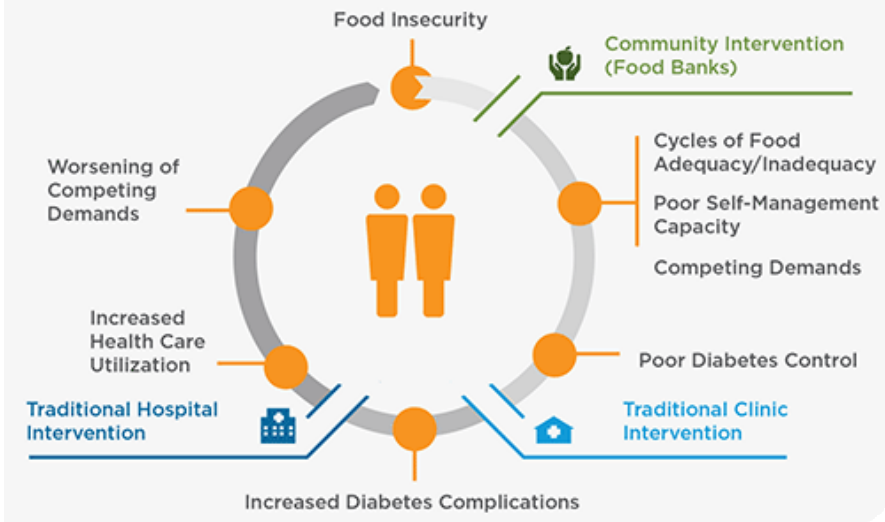
**WHAT IF WE DO THIS EFFECTIVELY?**



**Children's National**™



## CYCLE OF FOOD INSECURITY & CHRONIC DISEASE: DIABETES



Children's National™

- Increased awareness
- Increased empathy
- Increased creativity
- Improved health outcomes



**THANK YOU!**



**Children's National™**