Optimizing Care for Patients with Food Insecurity

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Disclosures

- I have no commercial conflicts of interest to disclose. Opinions expressed in this presentation are my own and do not necessarily reflect the opinions of NIH, CDC, USDA, or Feeding America.

Case Study

- CR is a 44-year-old woman with DM2. She presents for routine care. She has no complaints. Her last HbA1c was 8.1%.
  In your 5 years taking care of her, her HbA1c has never been less than (<) 7.9%.
  In her glucose log, her AM blood sugars are generally in the 200s, but she has numerous values between 48 and 62 since your last clinic visit. BMI today is 28.
- **DM Meds**: long-acting insulin qhs, glyburide, MTF
- **SH**: 3 teenaged children, all income is from informal economy

Objectives

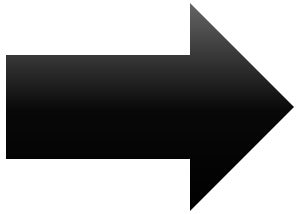
- Understand key differences between hunger and food insecurity and why these differences are important for clinicians
- Describe health outcomes related to food insecurity
- Learn how to screen for and respond to food insecurity in the clinical setting

Hunger

The uneasy or painful sensation caused by a lack of food

Coping Strategies to **Avoid** Hunger

- Eating low-cost foods
  - Fewer fruits and vegetables
  - More fats/carbs
- Eating highly filling foods
- Small variety of foods
- Avoiding food waste
- Binging when food is available



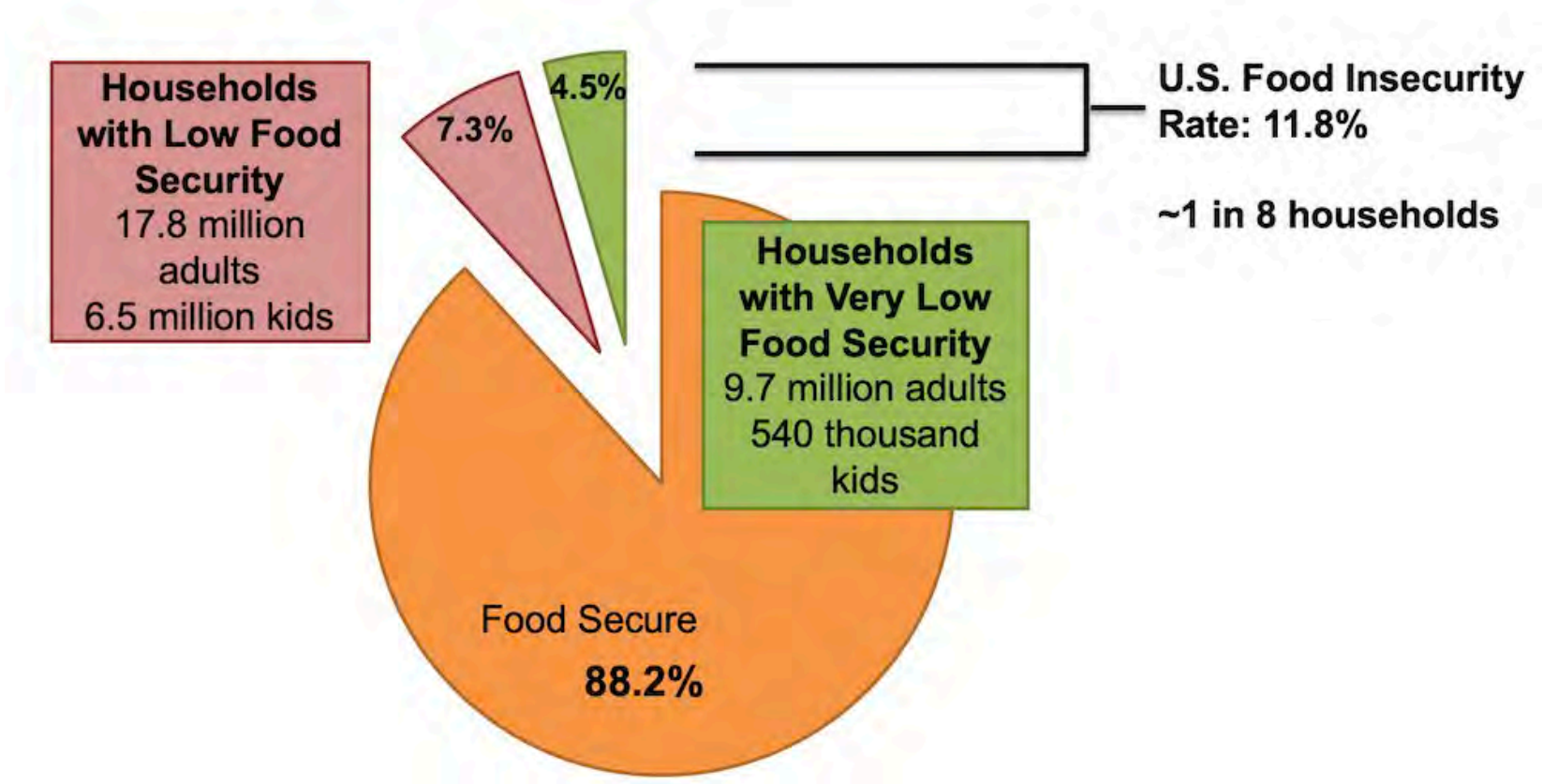
- Higher risk of obesity, diabetes, and other chronic, diet-sensitive chronic disease
- Once you are chronically ill, poorer ability to manage it your illness

Definitions

- **Food security**: Access by all people at all times to enough food for an active, healthy life
- **Food insecurity**: Household-level economic and social condition of limited or uncertain access to adequate food

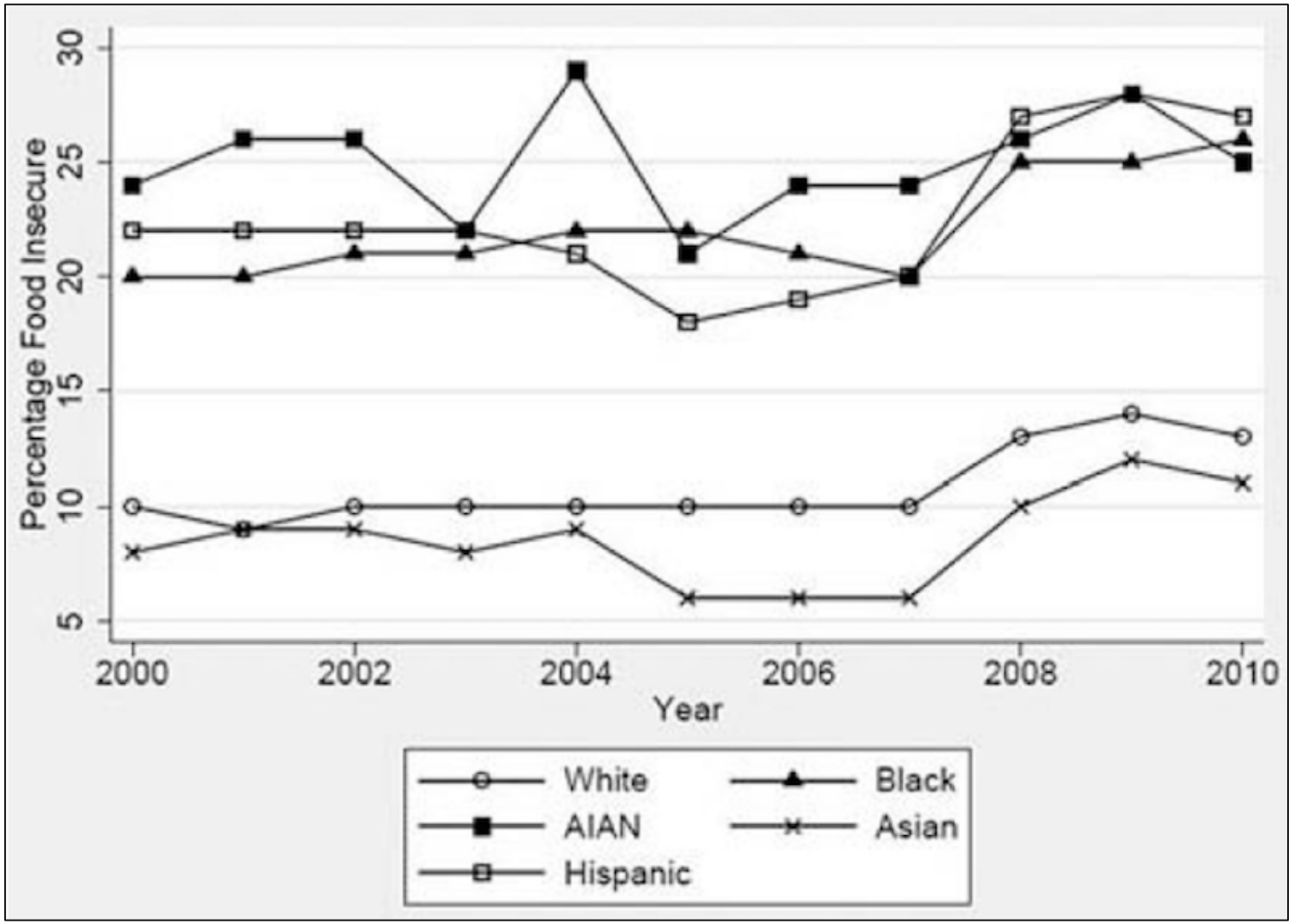
United States Department of Agriculture

U.S. Households by Food Security Status, 2017



Source: Calculated by ERS, USDA, using data from the December 2016 Current Population Survey Food Security Supplement

Prevalence of Food Insecurity by Race and Ethnicity, 2000–2010



Food Insecurity among American Indians and Alaska Natives: A National Profile using the Current Population Survey–Food Security Supplement. JHEN, 2017

Risk Factors (Household-Level)

- Children (19%)
  - Children under age 6 (20%)
  - Children with single mother (35%)
  - Children with single father (25%)
- Income < 185% FPL (34%)
- Black (26%) or Latino (22%)
- *Smoker in the household*

Food Insecurity Among AI/AN

- Urban greater than (>) 1.4 times more likely to be food insecure than nonmetropolitan ($p < 0.05$)
- Varies substantially by IHS region
  - Pacific: 40%
  - Southern Plains: > 30%
  - Alaska: > 30%.
  - Southwest: 26%
  - Northern Plains: 28%
  - East : 22%

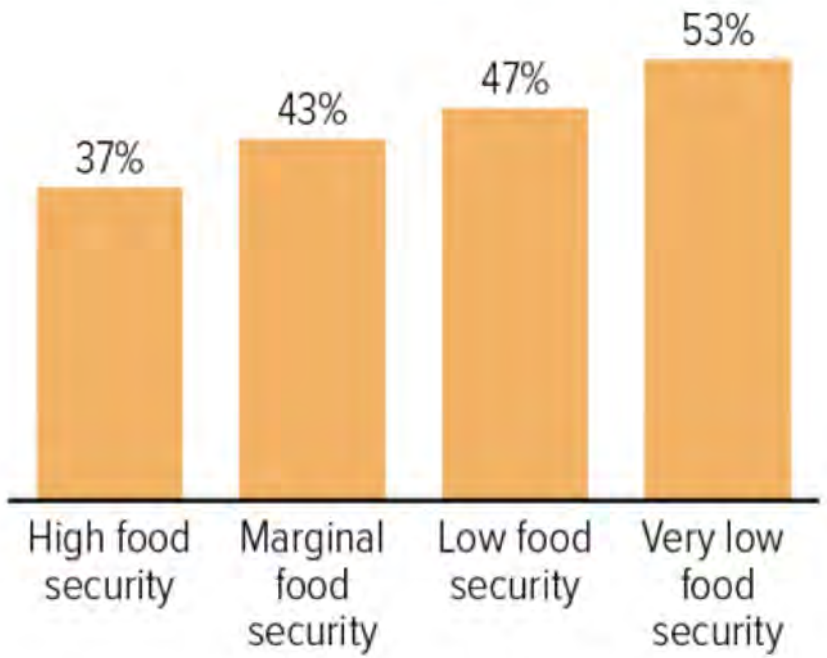
Food Insecurity among American Indians and Alaska Natives: A National Profile using the Current Population Survey–Food Security Supplement. JHEN, 2017.

Adults in Households with Less Food Security Are Likelier to Have a Chronic Illness

FIGURE 1

Adults in Households with Less Food Security Are Likelier to Have a Chronic Illness

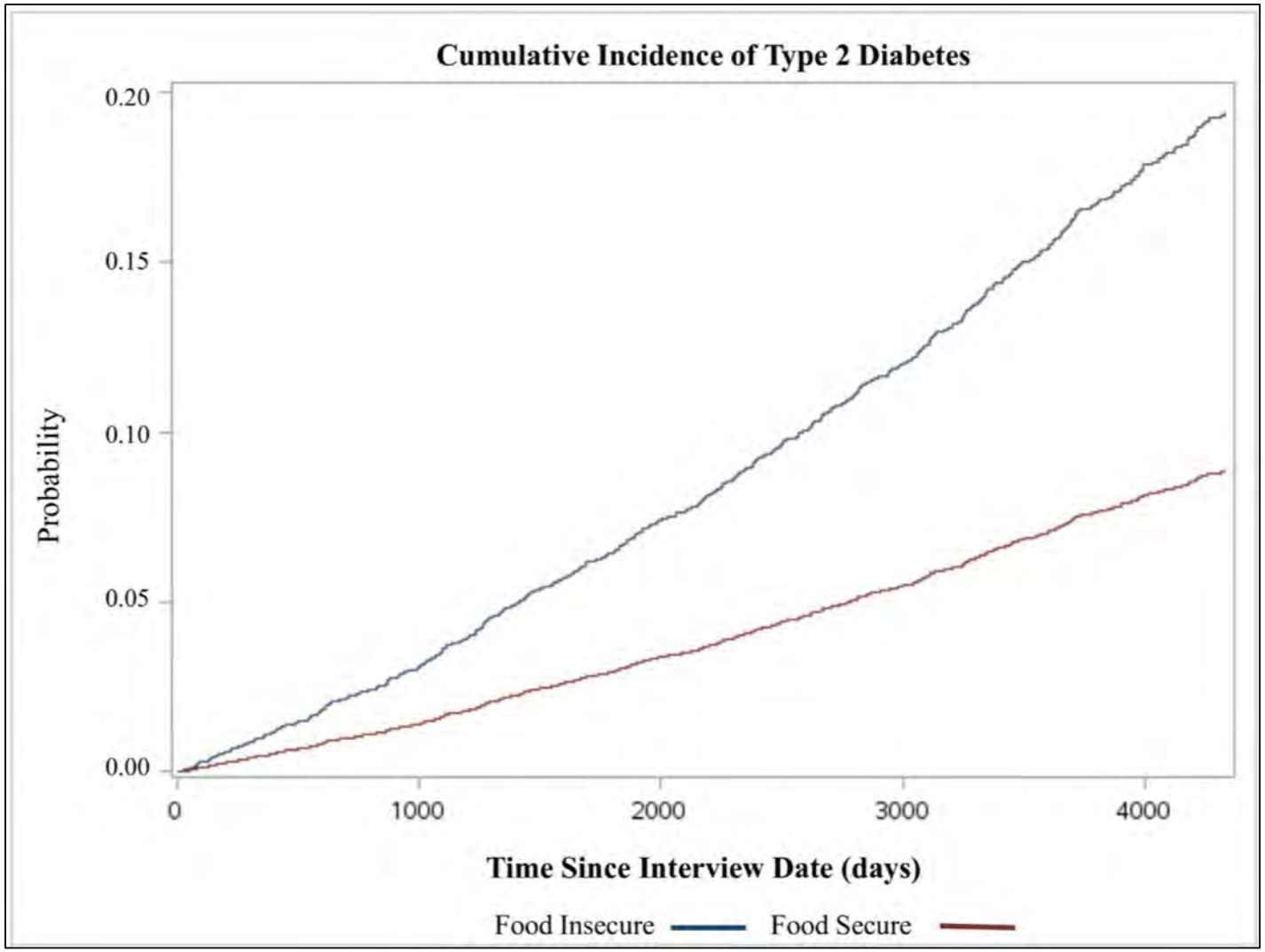
Probability of any chronic illness



Source: Christian A. Gregory and Alisha Coleman-Jensen, "Food Insecurity, Chronic Disease, and Health Among Working-Age Adults," U.S. Department of Agriculture, July 2017. Adjusted for differences in demographic, socioeconomic and other characteristics. Sample includes working-age adults in households at or below 200% of the federal poverty level.

Food Insecurity and Poor Health

Food Insecurity and Poor Health (2)



People living in food insecure households had more than ***twice*** the risk of developing diabetes even after accounting for differences in age, gender, race, physical activity, smoking, alcohol, and diet quality.

Tait, C. A., et al. (2018). "The association between food insecurity and incident type 2 diabetes in Canada: A population-based cohort study." PloS one 13(5): e0195962.

Food Insecurity and Poor Health (3)

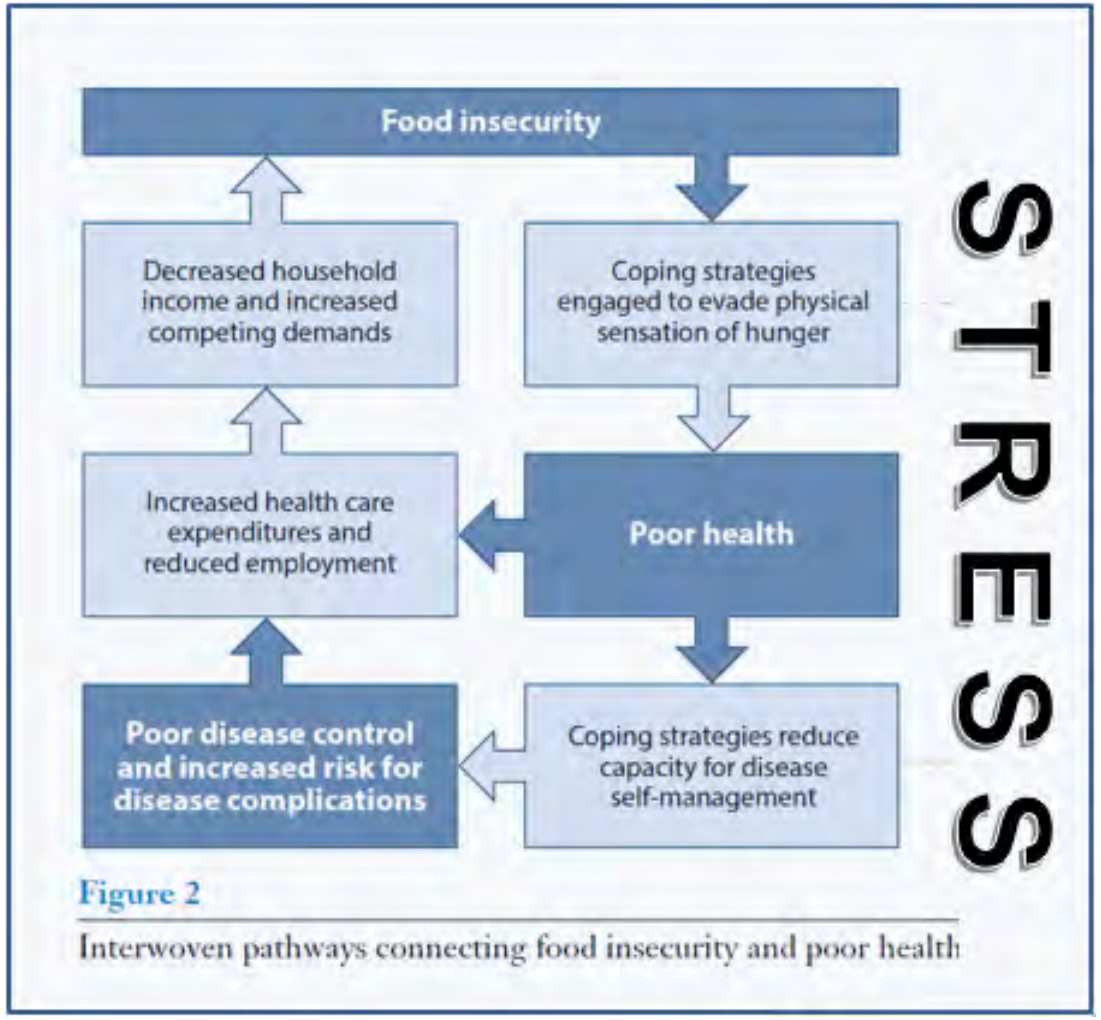
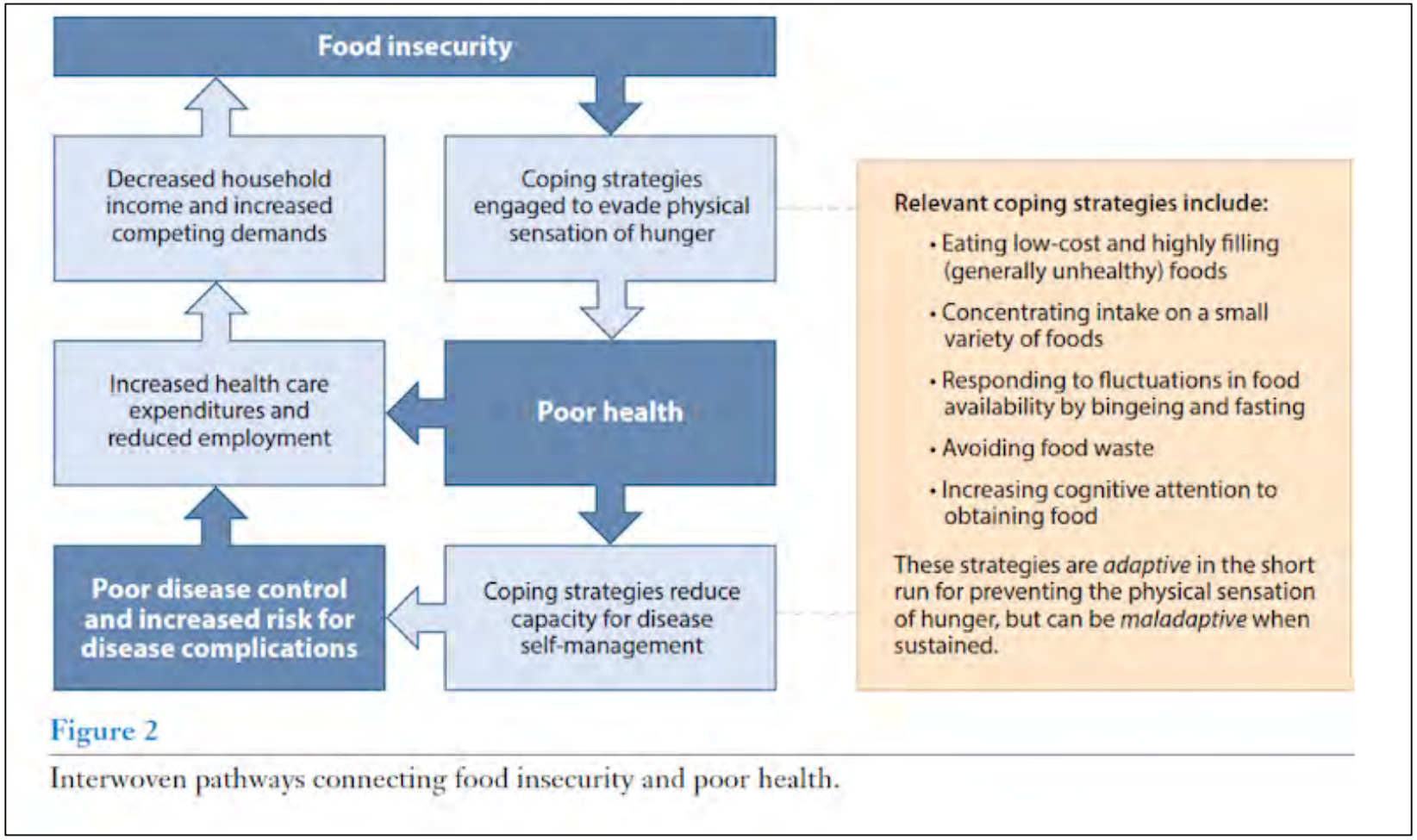


Figure 2

Interwoven pathways connecting food insecurity and poor health

Seligman & Berkowitz, Aligning Programs and Policies to Support Food Security and Public Health Goals in the United States. Annual Review of Public Health, 2019.

Food Insecurity and Poor Health (4)



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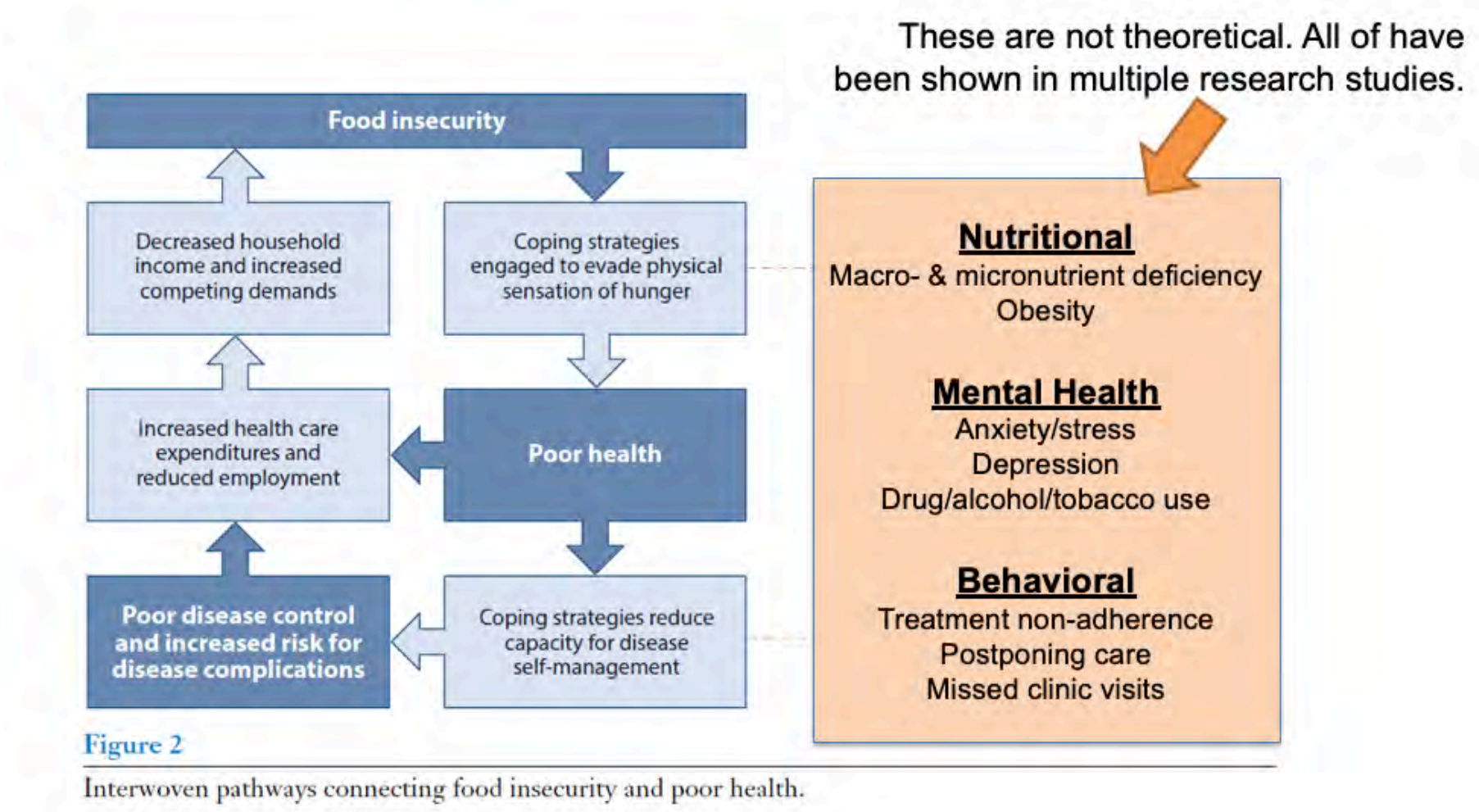
Food Insecurity and Poor Health (5)



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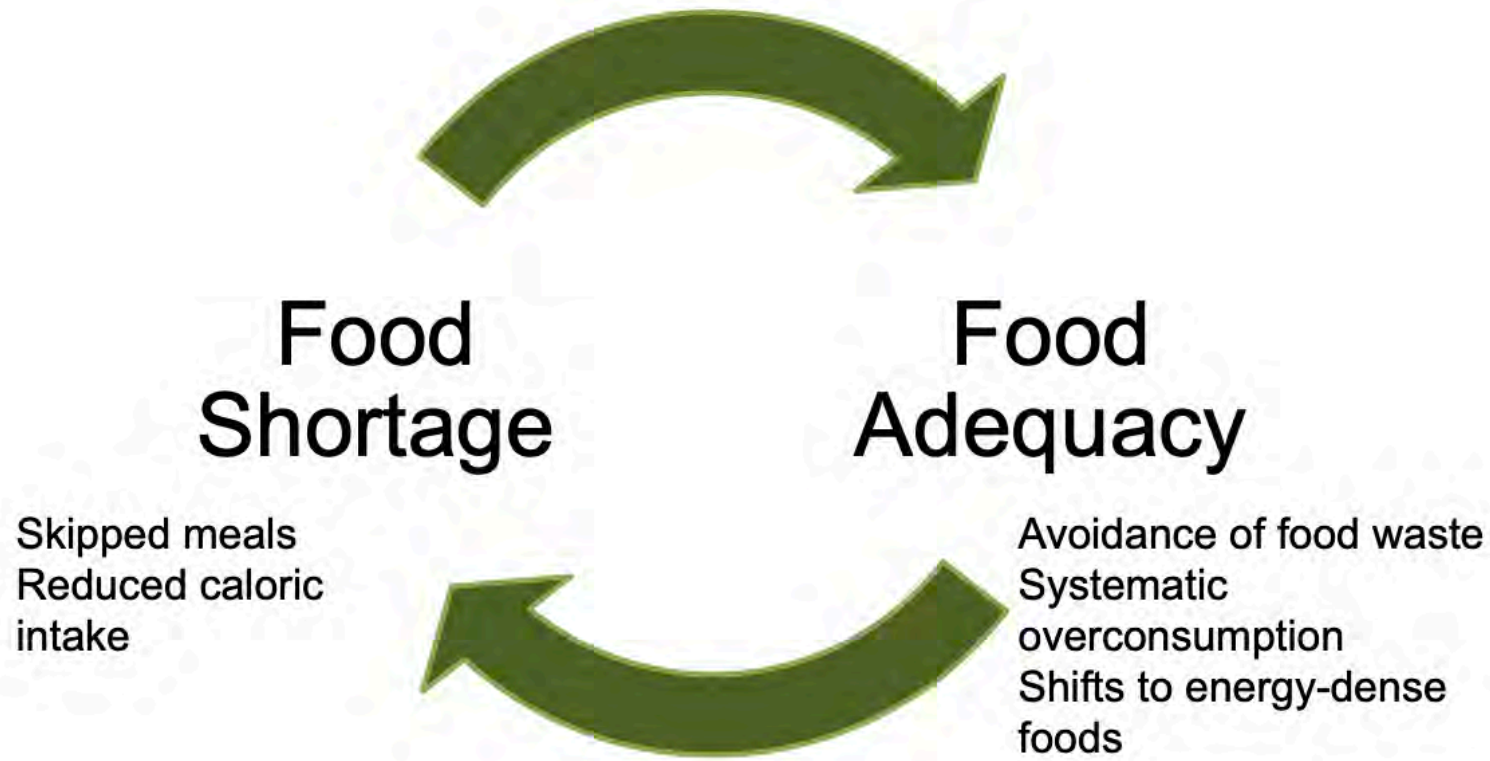
Interwoven pathways connecting food insecurity and poor health.

Weiser, Palar, et al. Food Insecurity and Health: A Conceptual Framework. Chapter in: Food Insecurity and Public Health. CRC Press, 2015

Food Insecurity Is Cyclic and Episodic

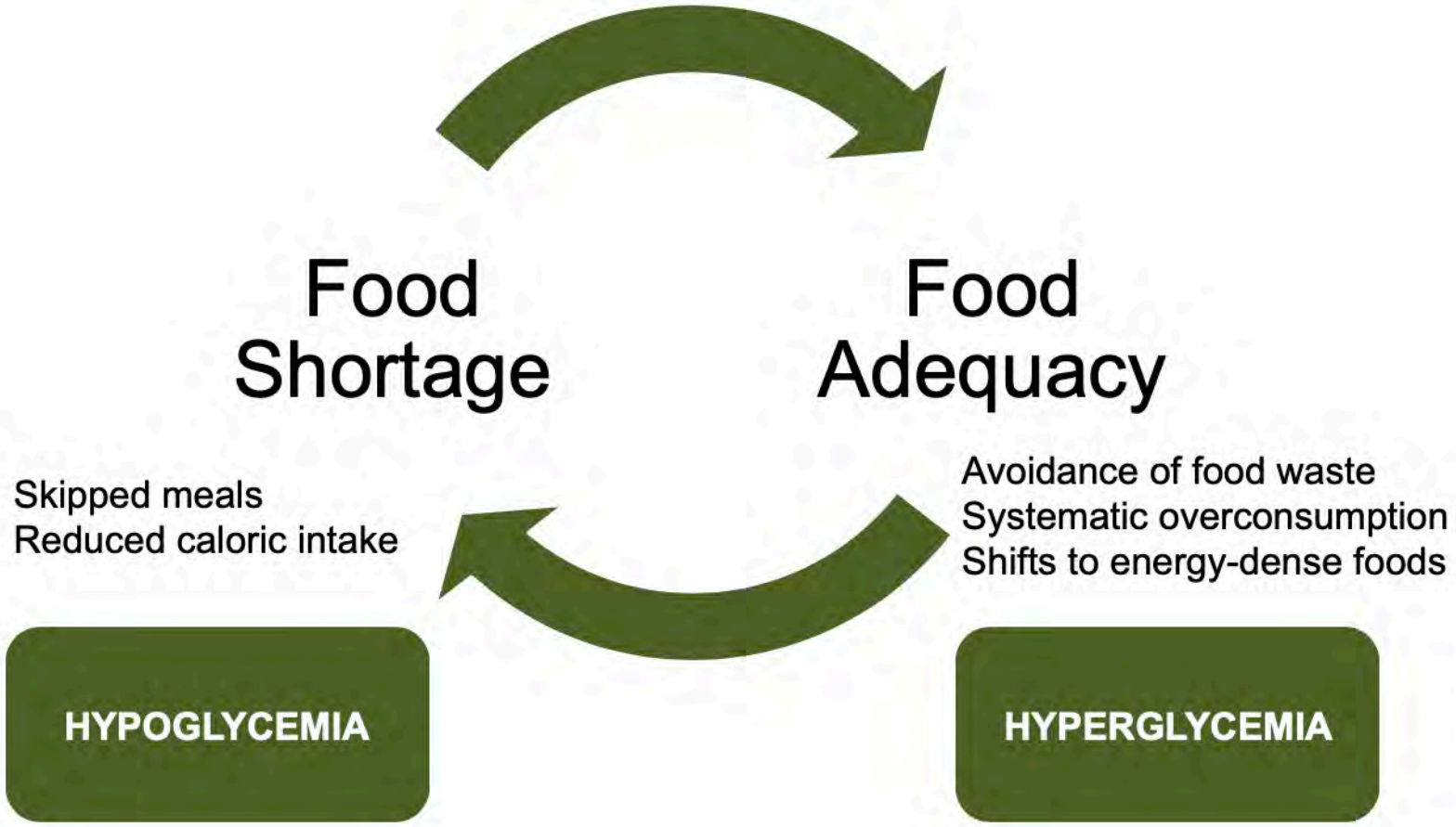
- Variation is monthly, seasonal, and random
- Average 7 episodes per year
- Dietary intake fluctuates, particularly among mothers

Episodic Food Insecurity Generates Variability in Coping Strategies Over Time

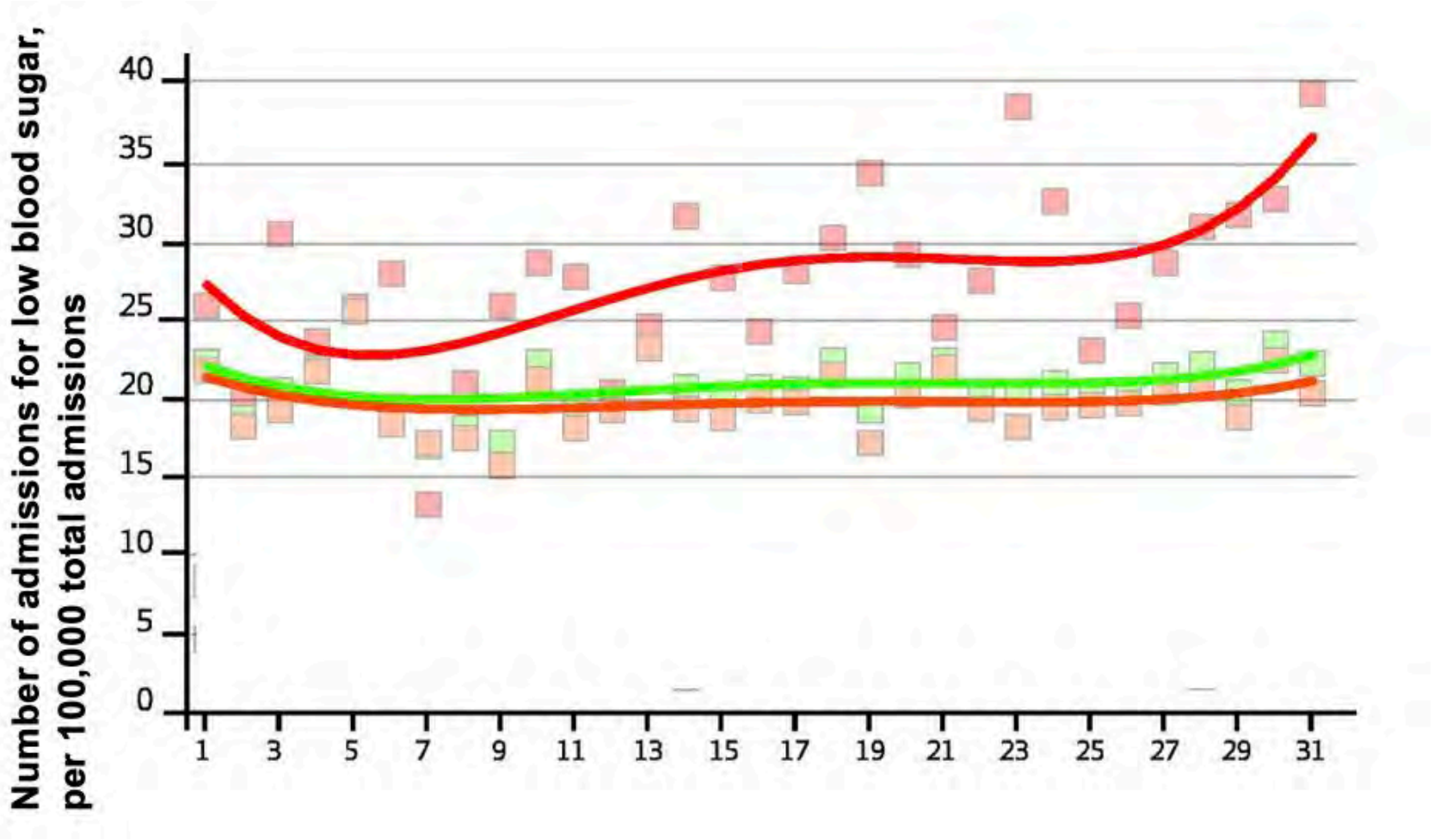


Seligman, HK, Schillinger, D. *The New England Journal of Medicine*, 2010; 363: 6–9

Diabetes Is the Most Challenging Condition to Manage Clinically in the Context of Food Insecurity

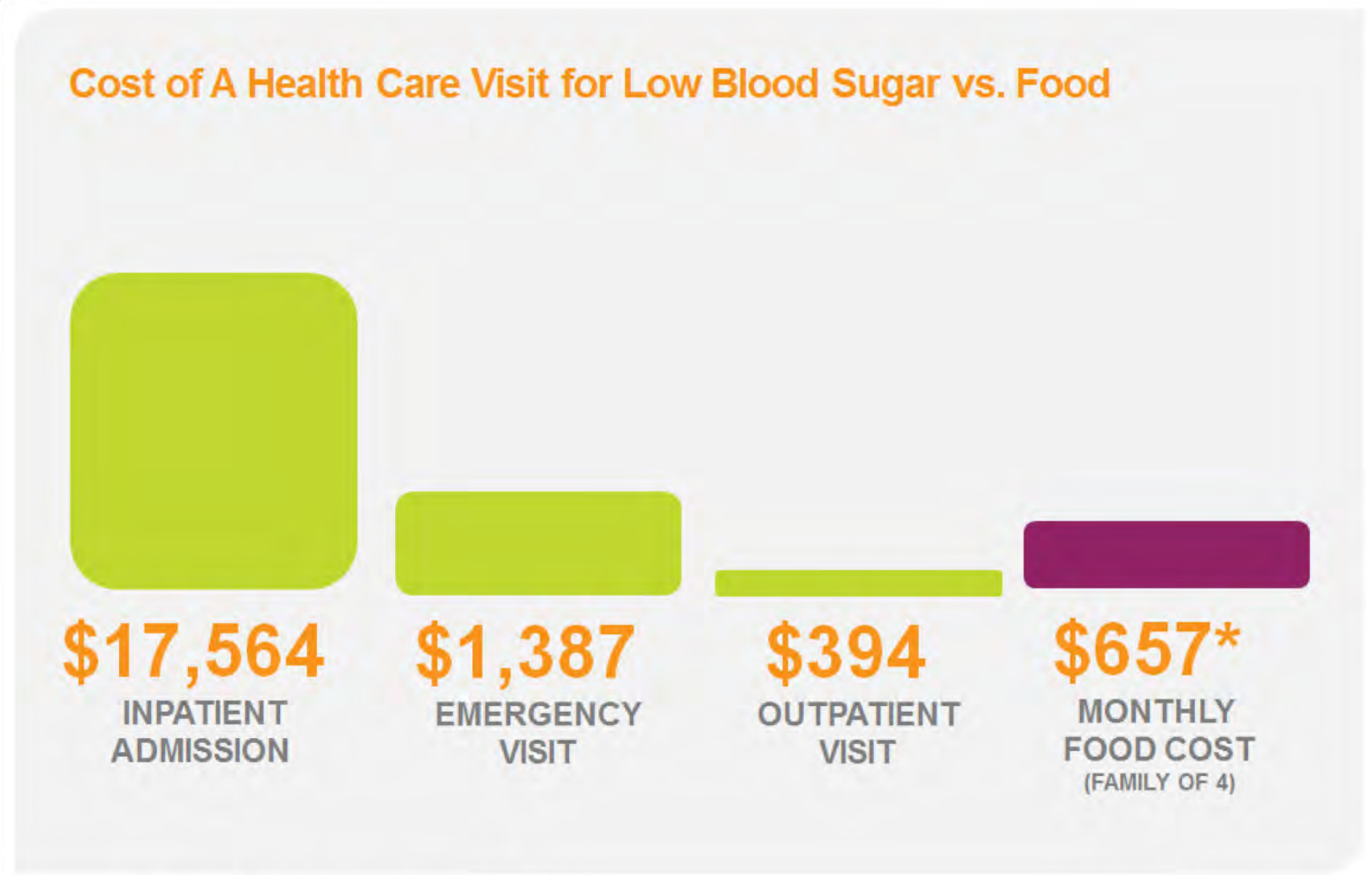


Admissions for Low Blood Sugar Increase by 27% in Last Week of the Month for Low-Income Population



Seligman, HK et al., Health Affairs, 2014; 33: 116–123

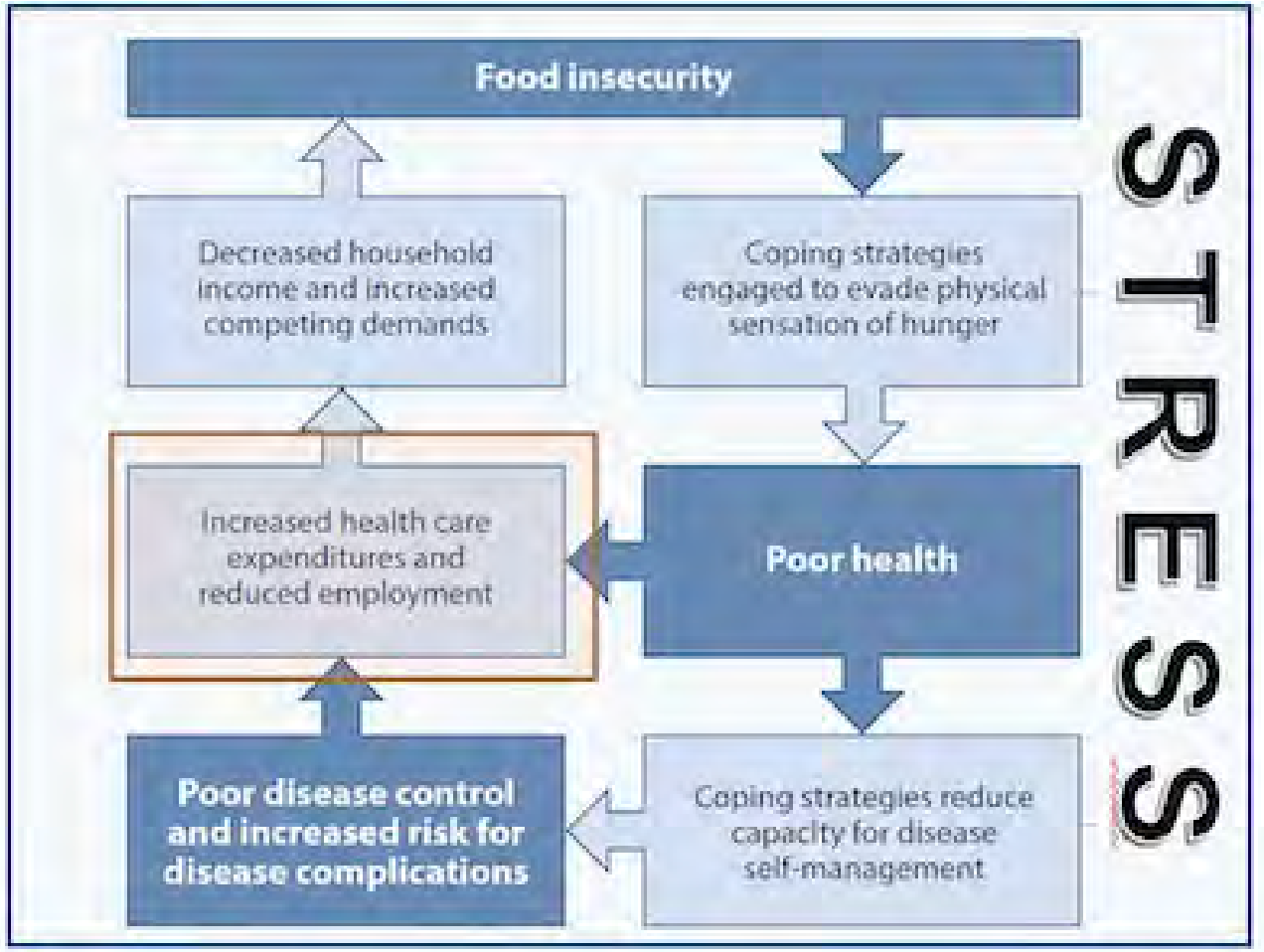
Cost of a Healthcare Visit for Low Blood Sugar vs. Food



American Journal of Managed Care, 2011.

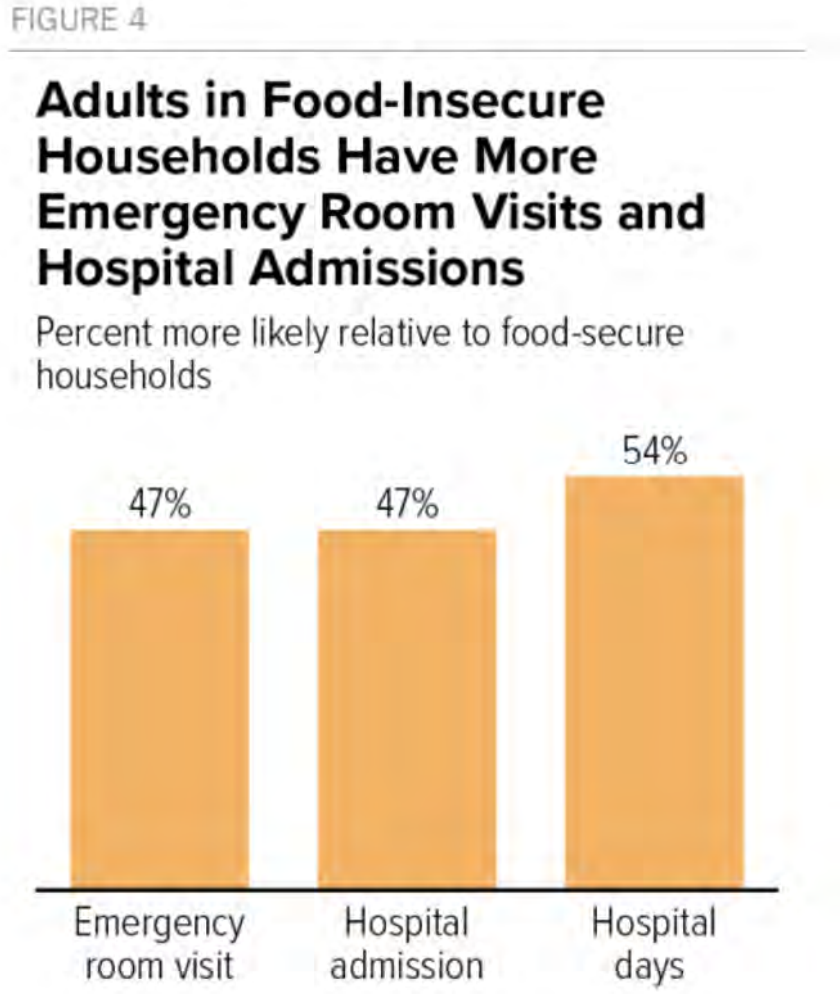
*Thrifty Food Plan

Food Insecurity and Poor Health (6)



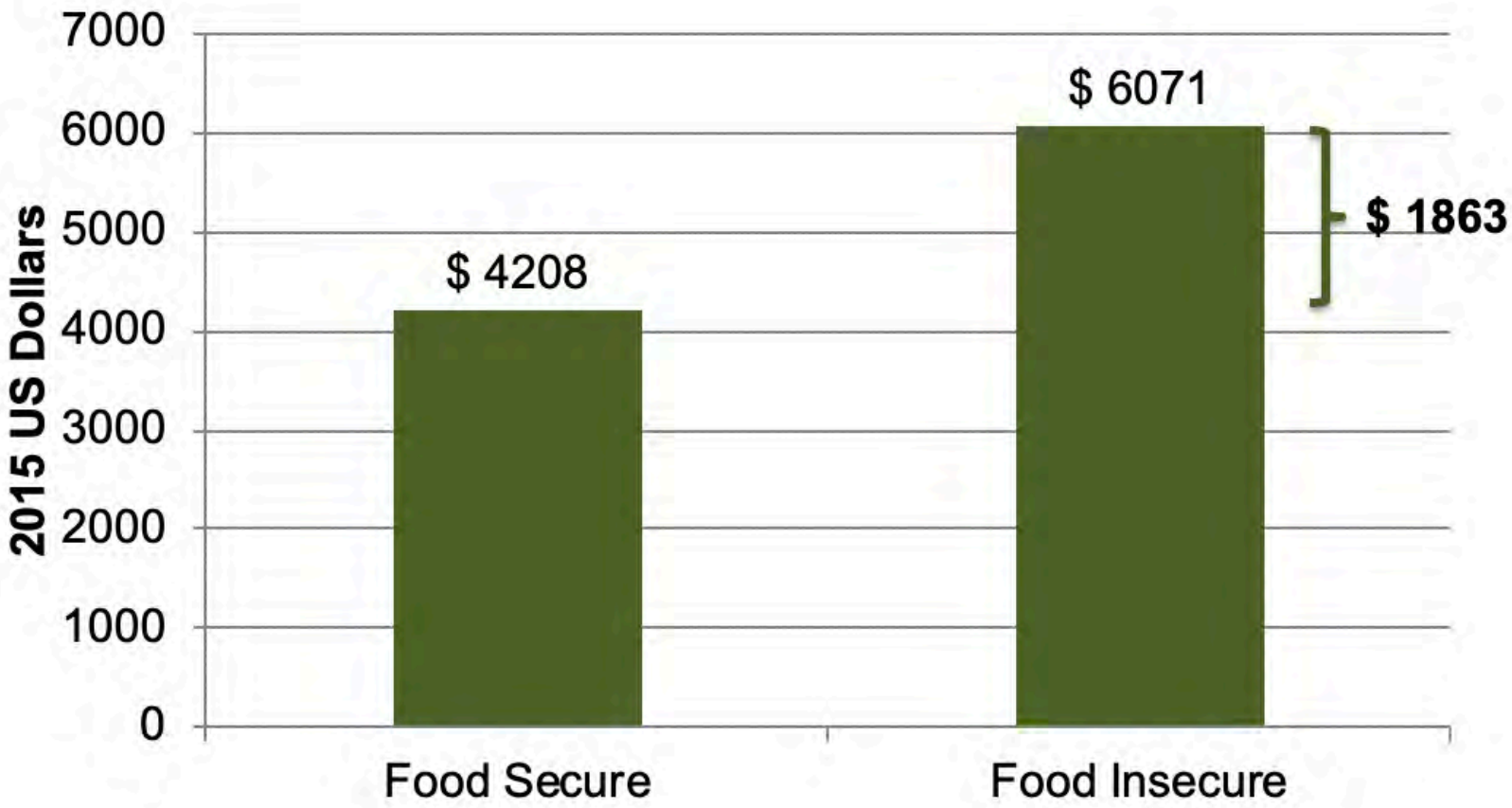
Seligman and Berkowitz, Annual Review of Public Health, 2018, in press.

Adults in Food-Insecure Households Have More Emergency Room Visits and Hospital Admissions



Berkowitz, Seligman, and Basu. JAMA Internal Medicine, 2018.

Food Insecurity and Subsequent Annual Health Care Expenditures



- NHIS-MEPS data adjusted for age, age squared, gender, race/ethnicity, education, income, rural residence, and insurance.
- Berkowitz, Basu, and Seligman. Health Services Research: 2017.

If My Clinic Helps a Patient Become More Food Secure, Will It Make a Difference in Their Health?

SNAP

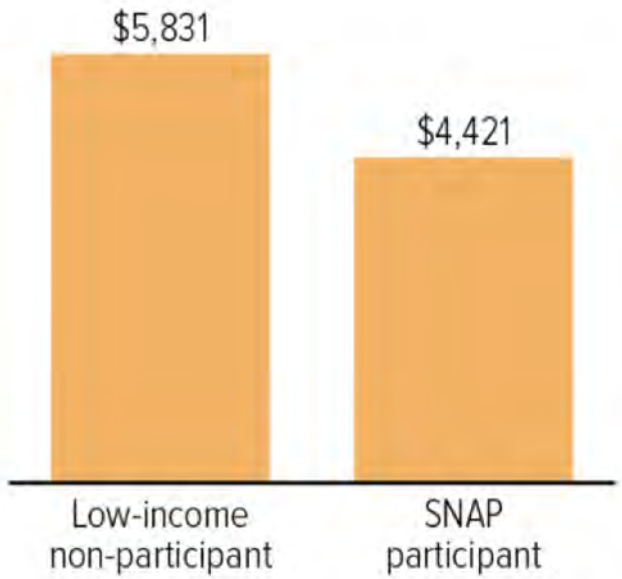
- SNAP (Supplemental Nutrition Assistance Program) reduces food insecurity by 20-30%

A SNAP Participant Incurs $1,400 Less for Healthcare

FIGURE 10

A SNAP Participant Incurs $1,400 Less for Health Care

Estimated annual per-person health care spending



Note: Health care spending includes out-of-pocket expenses and costs paid by private and public insurance, including Medicare and Medicaid.

Source: Seth Berkowitz, Hilary K., Seligman, and Sanjay Basu, "Impact of Food Insecurity and SNAP Participation on Healthcare Utilization and Expenditures," University of Kentucky Center for Poverty Research, 2017.

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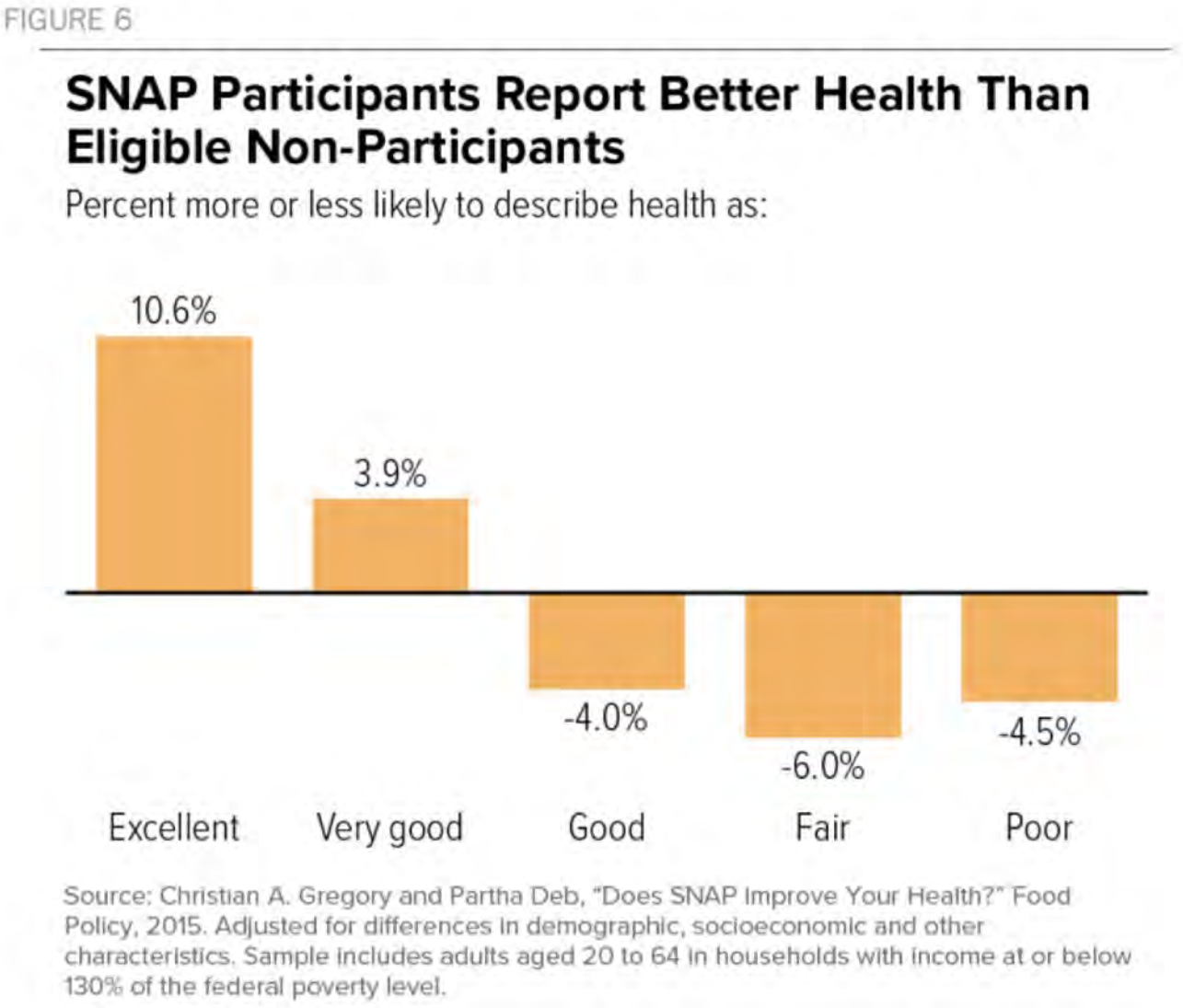
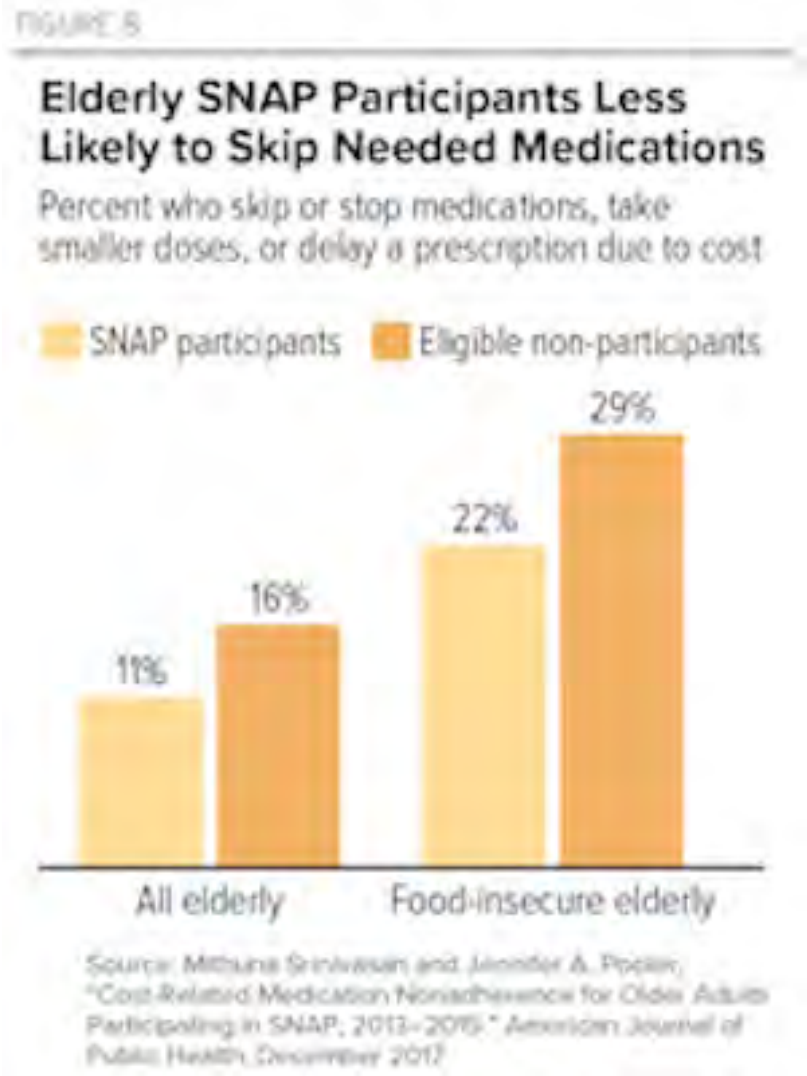
SNAP Participants Report Better Health Than Eligible Non-Participants

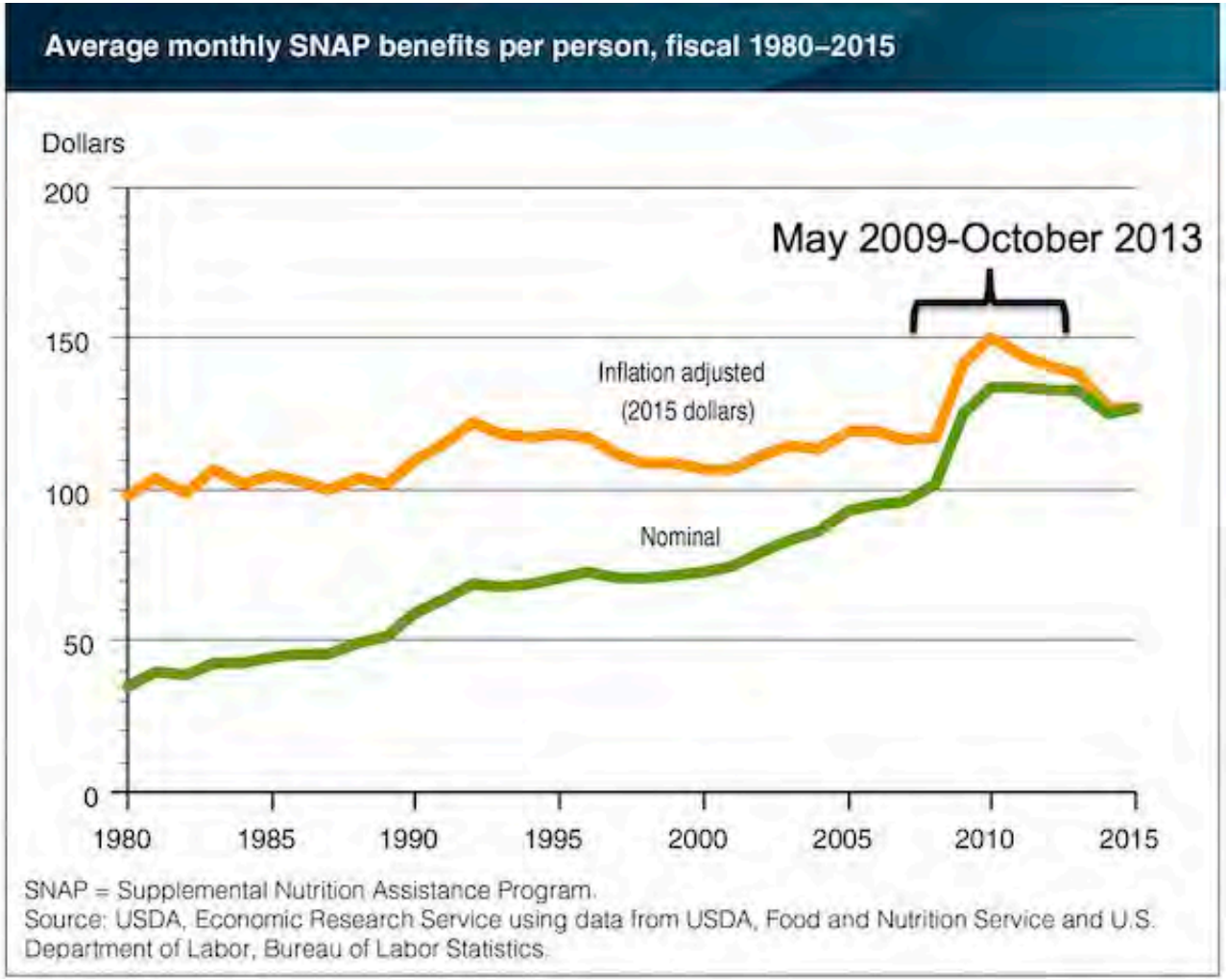
FIGURE 6



Elderly SNAP Participants Less Likely to Skip Needed Medications



Average Monthly SNAP Benefits per Person, Fiscal 1980–2015



Basu S, Berkowitz SA, Seligman HK. *Medical Care*. 2017.

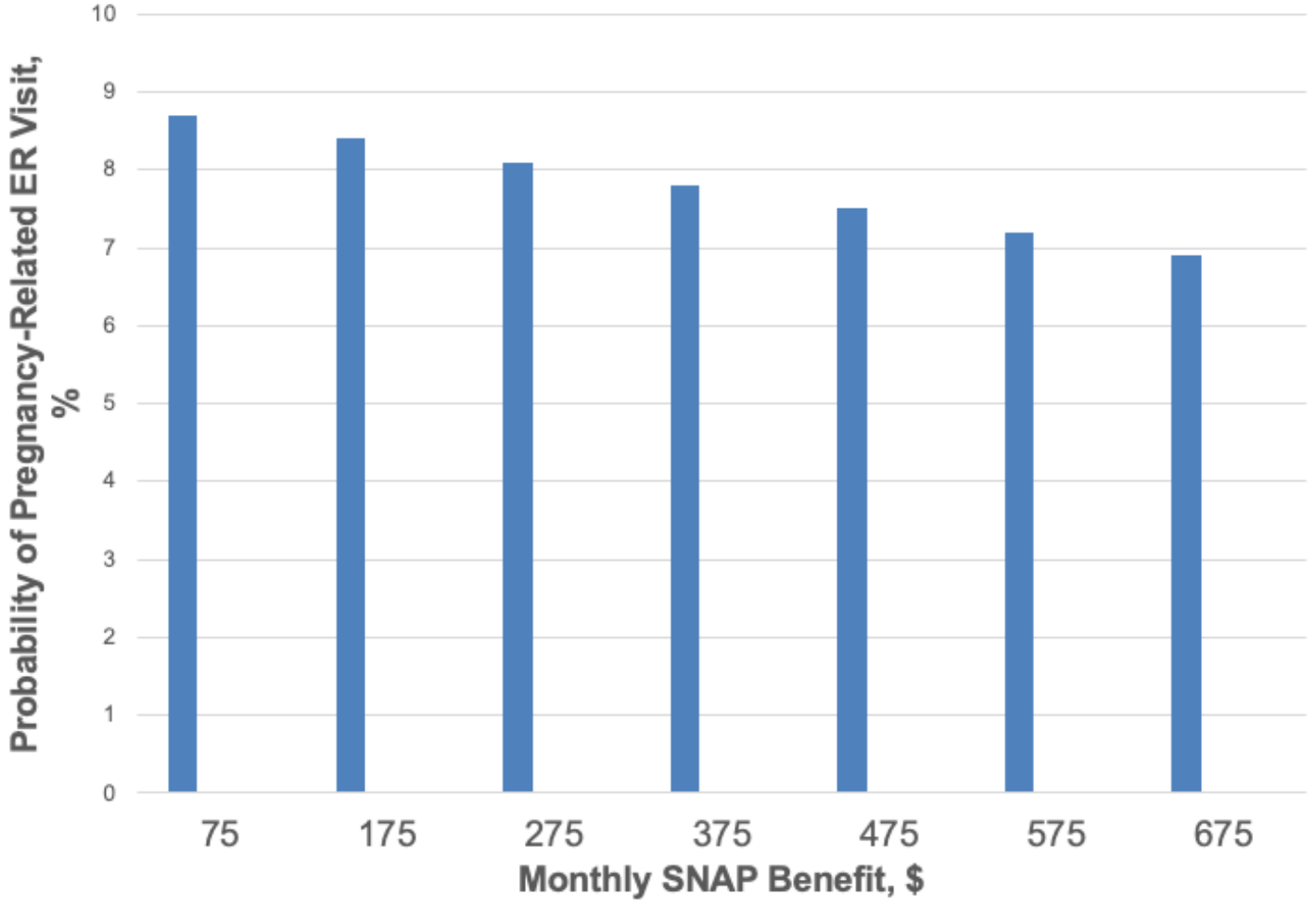
54 Million Averted

- Emergency department and inpatient hospitalization costs *only* for commercially-insured adults between the ages of 19 and 64
  - Basu S, Berkowitz SA, Seligman HK. *Medical Care*. 2017.

SNAP and Impact on Health Outcomes

- Less hypoglycemia at the end of the month
- Fewer pregnancy-related ER visits
- Fewer child ER visits for asthma
- Fewer adult ER visits for HTN
- Fewer hospitalizations and shorter length of stay
- Lower health care expenditures

Higher Benefits Associated with Better Outcomes



Arteaga, Heflin, and Hodges. Pop Res & Pol Rev, 2018

If My Clinic Helps a Patient Become More Food Secure,
Will It Make a Difference in Their Health?

There's good evidence to suggest yes.

American Diabetes Association: Standards of Medical Care in Diabetes—2016

- Two grade-A recommendations”
  - “Providers should evaluate hyperglycemia and hypoglycemia in the context of food insecurity and propose solutions accordingly.”
  - “Providers should recognize that homelessness, poor literacy, and poor numeracy often occur with food insecurity, and appropriate resources should be made available for patients with diabetes.”

Clinical Implications for Food Insecure Patients with Diabetes: Part 1

- In the setting of frequent/severe hypoglycemia:
  - Before you liberalize glycemic targets, screen for food insecurity
- Medications:
  - Metformin, if clinically appropriate
  - If using sulfonylureas: glipizide preferred immediately before meals (skip if not eating)
  - If using long-acting insulin: dose low using a peakless analog (e.g., glargine)
  - If using short-acting insulin: OK to use immediately after meal if meals are unreliable

**Recommendations all consistent with ADA Standards of Care for food-insecure patients*

Clinical Implications for Food Insecure Patients with Diabetes: Part 2

- Prescribe glucose tabs
- Smoking cessation and substance abuse counseling
- Talk about “a day in which you can’t eat” rather than a “sick day”

  - **Recommendations all consistent with ADA Standards of Care for food-insecure patients*

Dietary Counseling

- Stress portion control rather than dietary substitutions
- Frozen fruits and vegetables
- Farmers' markets
- Nutritionist referral
- DSME sensitive to needs of food insecure patients

Standardized Clinical Measurement: Hunger Vital Sign

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 we bought just didn't last and we didn't have money to get more.

Often or sometimes true to either question suggests food insecurity (97% sensitivity, 83% specificity)

- For test characteristics among households with children: Hager, Pediatrics, 2010
- For test characteristics among households without children, population-based: Gundersen & Seligman, PHN, 2017

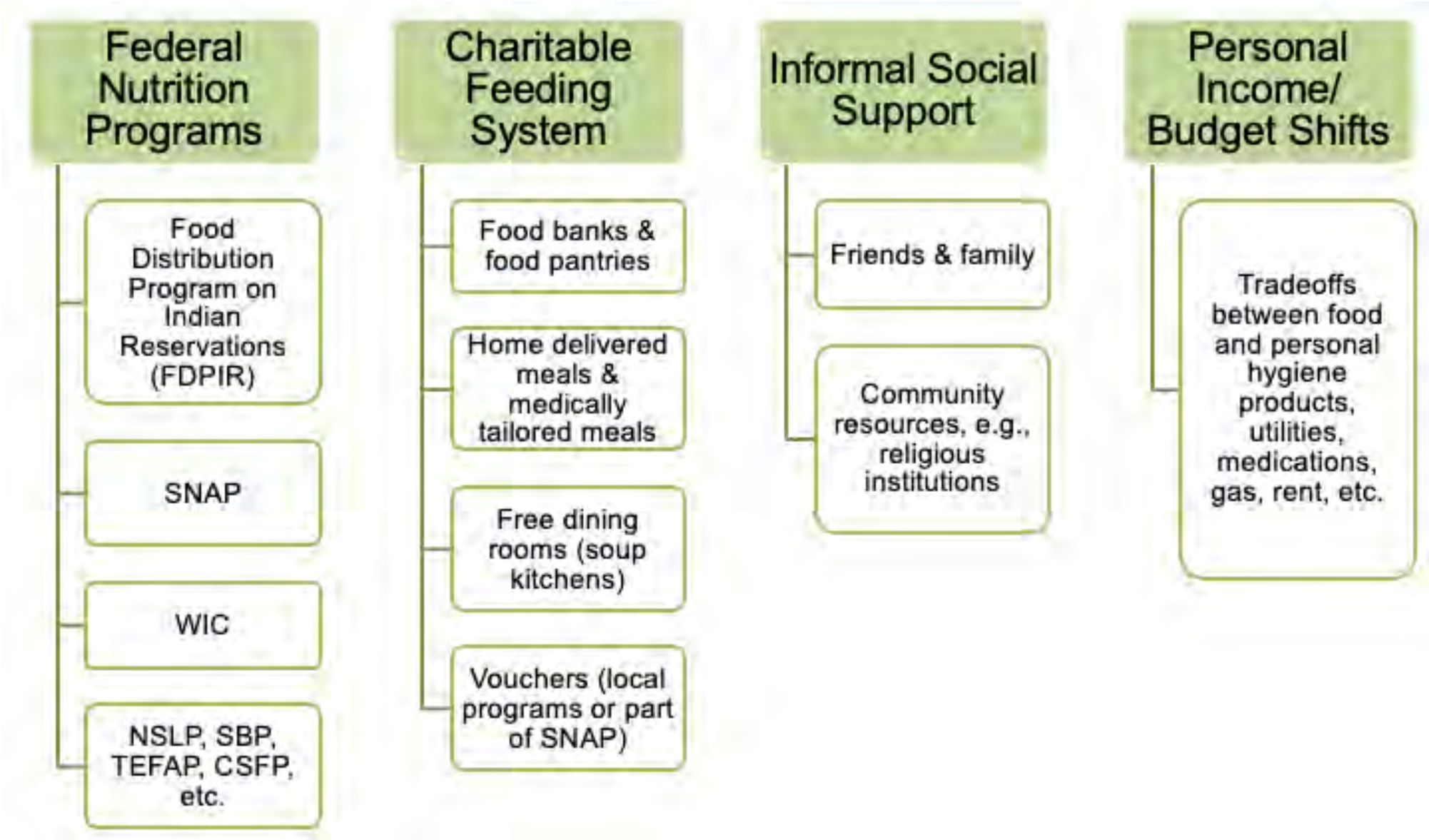
Best Practices in HVS Administration

- “I ask all of my patients about access to food. I want to make sure you know all of the community resources available to you. Many of them are free of charge.”
  - Stigma, “neglect”
- Physician/NP/PA should follow up on a +HVS, but may not be the best person to administer HVS
- Frequency
  - Screen everyone once
  - Screen high-risk populations regularly: FI is dynamic!
- Systems approaches to screening are critical

Screen and Intervene

1. Identification of food insecurity by positive clinical screen
2. Referral to entity managing connection to federal or community program
3. Enrollment in federal or community food program
4. Improved diet quality, food security, and clinical satisfaction
5. Improvement of health and utilization outcomes

Resources for Food Insecure Households



Supporting Food Insecure Patients in the Clinical Setting

- Educating clinicians and health care staff about screening
- Developing systems approaches to address food insecurity
- Onsite food distribution
  - Food pantry permanently located at hospital or clinic, stocked and/or staffed by Food Bank
  - Mobile food distributions at hospital or clinic
  - Take-home meals provided at hospital discharge
- On-site SNAP enrollment assistance during clinic visit or hospitalization

Case Study (2)

CR is a 44-year-old woman with DM2. She presents for routine care. She has no complaints. Her last HbA1c was 8.1%. In your 5 years taking care of her, her HbA1c has never been <7.9%. In her glucose log, her AM blood sugars are generally in the 200's, but she has numerous values between 48 and 62 since your last clinic visit.

DM Meds: long-acting insulin qhs, glyburide, MTF

SH: 3 teenaged children, all income from informal economy

Case Study (3)

- Numerous reasons to suspect food insecurity:
  - diabetes with hypoglycemia, low income, children in household
- HVS positive, not enrolled in SNAP or FDPIR
- Initial clinical management:
  - discuss blood sugar management on days when no $ for food
  - support SNAP/FDPIR enrollment
  - refer to food pantry for vegetables and other healthy “luxury items”
  - discuss copay burden

Good Clinical Resources

- NOPREN algorithms for addressing FI in pediatric, adult, and diabetic populations (under “Resources”)
  - https://nopren.org/working_groups/food-security/
- CME Course: Screen & Intervene: Addressing FI Among Older Adults
  - http://frac.org/news/free-online-course-help-health-care-providers-address-senior-hunger
- Addressing FI: A Toolkit for Pediatricians
  - http://frac.org/aaptoolkit
- Identifying Food Insecurity in Health Care Settings: A Review of the Evidence
  - https://sirenetwork.ucsf.edu/sites/sirenetwork.ucsf.edu/files/SIREN_FoodInsecurity_Brief.pdf
- FI and Health: A Toolkit for Physicians and Health Care Organizations
  - https://hungerandhealth.feedingamerica.org/wp-content/uploads/2017/11/Food-Insecurity-Toolkit.pdf