Colorado School of Public Health

# Center for American Indian and Alaska Native Diabetes Translation Research

## Food Insecurity and Diabetes in Indian Country: Lessons Learned from a Produce Prescription Program on Navajo Nation

Kelli Wilson Begay, Kymie Thomas, Tiona Grant

## Housekeeping

- Welcome and thank you for joining us
- Please remain on mute, add questions to the chat
- Participate in polls
- Complete survey at the end of the webinar
- CAIANDTR eNewsletter – Coming soon!
- Save the date

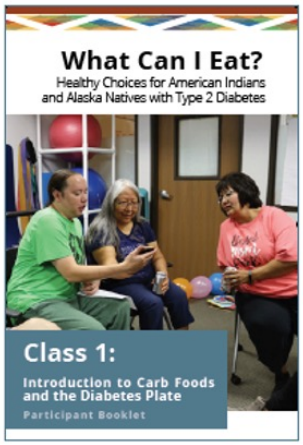
# Upcoming Webinar

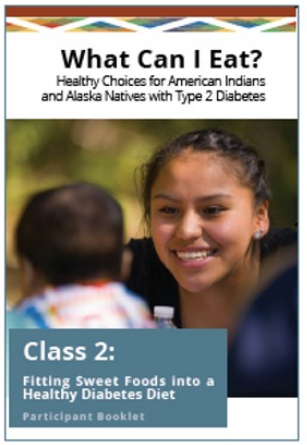
**What Can I Eat?** Diabetes Nutrition Education Program for American Indians and Alaska Natives with Type 2 Diabetes

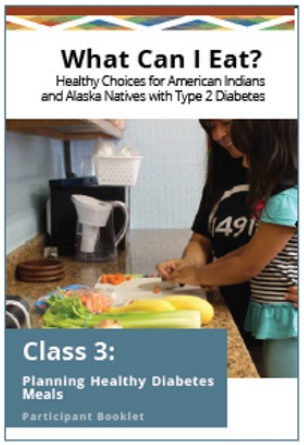
## Experiences of Site Coordinators and Educators

**Thursday, July 14, 12pm-1pm MT**

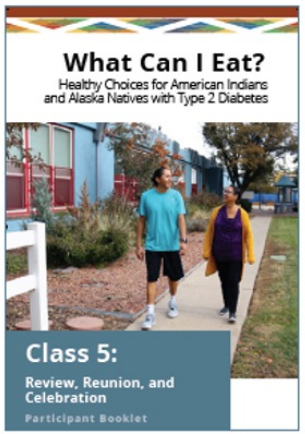
Registration link in the chat








Colorado School of
PUBLIC HEALTH

# Food Insecurity and Diabetes in Indian Country: Lessons Learned from a Produce Prescription Program on Navajo Nation

Kelli Wilson Begay, MS MBA RDN
Kickapoo / Seminole / Muscogee Creek

MAVEN
CŌLLECTIVE

CNN health Life, But Better Fitness Food Sleep Mindfulness Relationships

# Surge in child hunger overwhelms richest US counties

By Laura Ungar and Kaiser Health News
Published 4:21 AM EDT, Tue March 23, 2021

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NEWS ARTS & LIFE MUSIC SHOWS & PODCASTS SEARCH

Coronavirus Updates

THE CORONAVIRUS CRISIS

## For Hungry Americans Across The Country, Food Insecurity Crisis Deepens

December 14, 2020 · 3:47 PM ET
Heard on All Things Considered

JONAKI MEHTA AILSA CHANG

CNN US Crime + Justice Energy + Environment Extreme Weather Space + Science

CNN IMPACT YOUR WORLD

## 54 million Americans are going hungry. Here's how you can make sure you eat

By Lauren Lee, CNN
Updated 2:59 PM EST, Thu November 12, 2020

THE WALL STREET JOURNAL.

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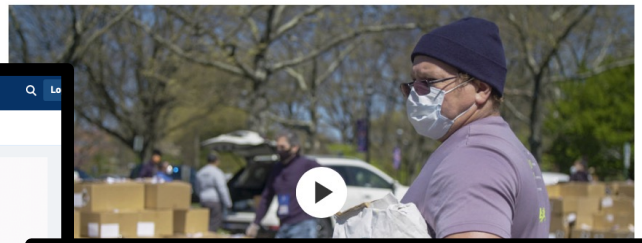
U.S.

## More Americans Go Hungry Amid Coronavirus Pandemic

Causes include higher food prices, school closings; expiration of federal jobless benefits deepens distre



9NEWS News Weather Sports Connect Watch Live

COVID-19 VACCINE CORONAVIRUS VOICES OF CHANGE NEXT WITH KYLE CLARK

LOCAL NEWS

## Food Bank of the Rockies distributed 100M pounds of food in 2020

For the first time in its 42-year history, Food Bank of the Rockies distributed more than 100 million pounds of food.

FOX NEWS 10:34 PT

U.S. Politics Media Opinion Business Entertainment Sports Lifestyle TV Fox Nation Listen More

Hot Topics Taliban gains more ground in Afghanistan as it closes in on Kabul

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FOOD-DRINK · Published June 5, 2020

## A quarter of Americans are facing food insecurity amid coronavirus pandemic, survey suggests

CNBC MARKETS BUSINESS INVESTING TECH POLITICS CNBC TV WATCHLIST PRO

PERSONAL FINANCE

## Biden administration announces the biggest increase to food stamps ever

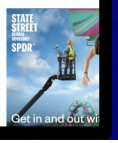
PUBLISHED MON, AUG 16 2021-10:59 AM EDT | UPDATED MON, AUG 16 2021-2:47 PM EDT

Annie Nova
@ANNIEREPORTER

SHARE

KEY POINTS

- Starting in October, food assistance benefits will increase by an average of 25% above pre-pandemic levels.
- The average benefit, which was $121 before Covid, will increase by $36 a month under the new policy, according to the USDA.

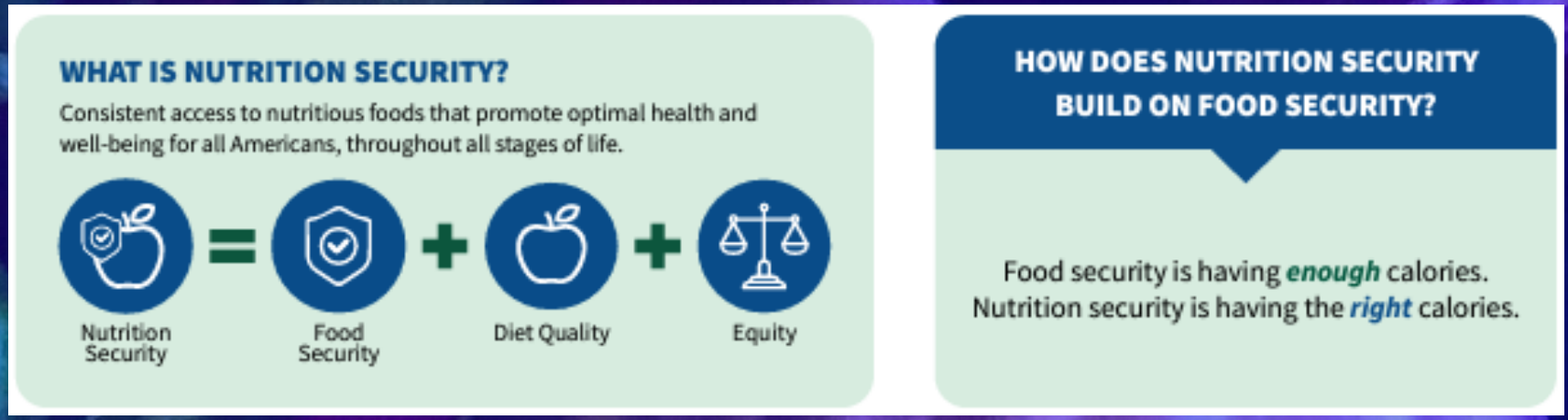



Get in and out wi

# Defined by the USDA:
# ***Food insecurity is the lack of consistent access to enough food for an active, healthy life.***

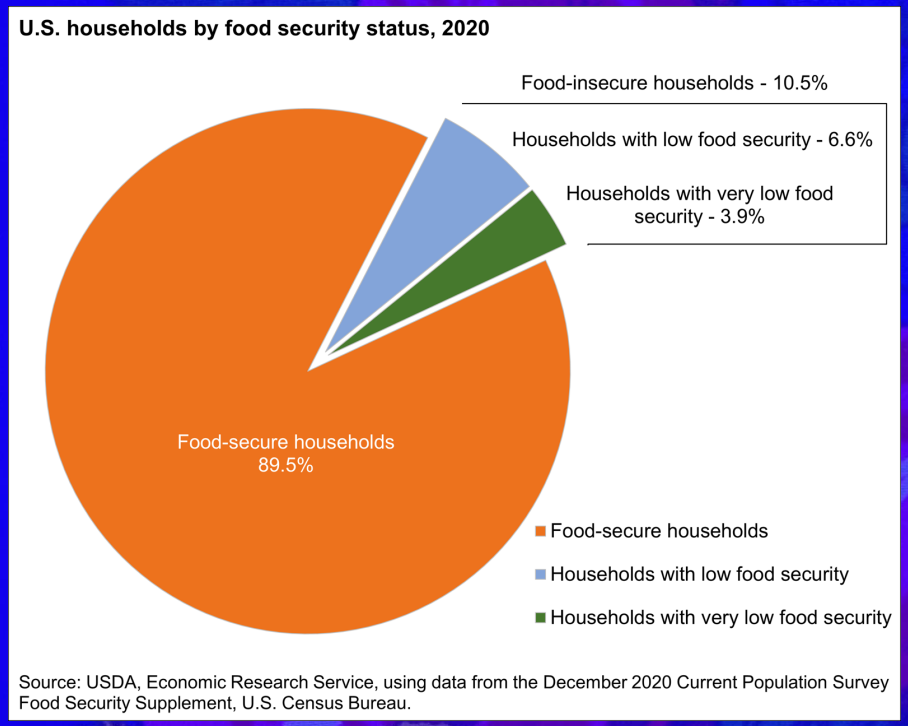
| Label | Defined as |
|---|---|
| Low Food Security | Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake |
| Very Low Food Security | Reports of multiple indications of disrupted eating patterns and reduced food intake |

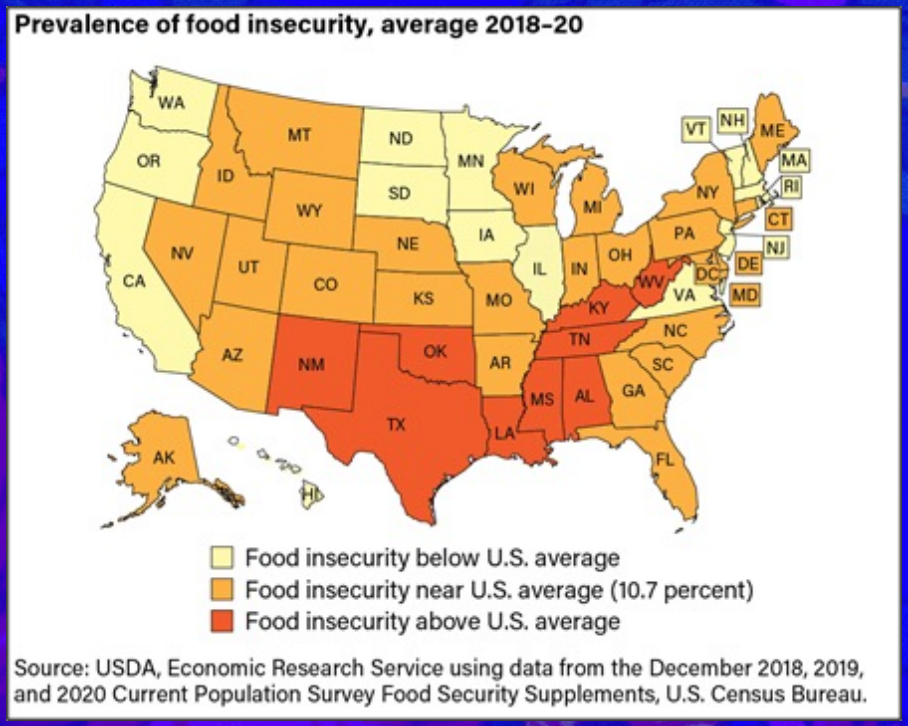
# Food Insecurity vs. Nutrition Insecurity




USDA Actions on Nutrition Security Infographic
https://www.fns.usda.gov/resource/usda-actions-nutrition-security

# Prevalence of Food Insecurity in the U.S.

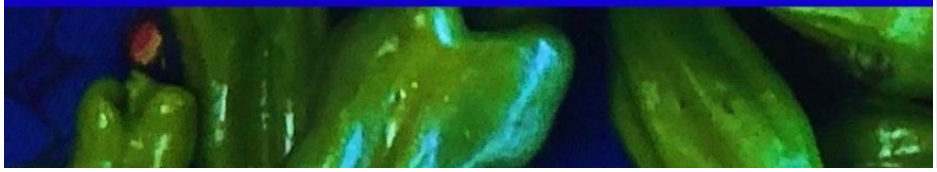



https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/key-statistics-graphics/#map

# Health Impacts of Food Insecurity

The Impact of Poverty, Food Insecurity, and Poor Nutrition on Health and Well-Being



| Children | Adults* | Older Adults |
|---|---|---|
| Asthma[79] | Arthritis[80] | Asthma[81] |
| Behavioral and social-emotional problems (e.g., hyperactivity)[82,83,84] | Asthma[85] | Congestive heart failure[86] |
| Birth defects[87] | Cancer[88] | Depression[89] |
| Developmental risk[90] | Chronic kidney disease (especially among those with either diabetes or hypertension)[91] | Diabetes[92] |
| Iron deficiency anemia[93,94] | Chronic obstructive pulmonary disease (COPD)[95] | Gum disease[96] |
| Less physical activity[97] | Cigarette smoking[98] | History of a heart attack[99] |
| Low birth weight[100,101] | Coronary heart disease[102] | Hypertension[103] |
| Lower bone density (among boys)[104] | Depression (including maternal depression)[105,106] | Limitations in activities of daily living[107] |
| Lower health status[108,109] | Diabetes[110,111] | Lower cognitive function[112] |
| Lower health-related quality of life[113] | Functional limitations[114] | Lower intakes of calories and key nutrients (e.g., protein, iron, calcium, vitamins A and C)[115] |
| Lower physical functioning[116] | Hepatitis[117] | Obesity (primarily among women)[118] |
| Mental health problems (e.g., depression, anxiety, suicidal ideation)[119,120,121] | Higher levels of C-reactive protein (a marker of inflammation)[122,123] | Osteoporosis[124] |
| More frequent colds and stomachaches[125] | Hyperlipidemia[126] and dyslipidemia[127] | Peripheral arterial disease[128] |
| Poor dietary quality[129] | Hypertension[130] | Poor or fair health status[131] |
| Poor educational performance and academic outcomes[132,133,134,135] | Insufficient sleep or poor sleep outcomes[136,137] | |
| Untreated dental caries (i.e., tooth decay)[138] | Less physical activity[139] | |
| | Mental distress[140] | |
| | Obesity (primarily among women)[141,142,143] | |
| | Poor dietary intake[144] | |
| | Poor or fair health status[145] | |
| | Pregnancy complications (e.g., gestational diabetes, iron deficiency)[146,147] | |
| | Stroke[148] | |
| | Suicidal ideation[149] | |

# Understanding Food Insecurity: Risk Factors

- Financial (Coleman-Jensen, 2013)
  - Low, inconsistent or lost income
    - Recent job loss or reduction in hours
  - Inadequate SNAP allotment or access to government food assistance programs
- Elder population (Coleman-Jensen, 2013)
- Single-parent homes (Gunderson, 2013)
- Uninsured or underinsured with a medical illness (Seligman, 2010)


Coleman-Jensen A, Gregory C, Singh A. *Household Food Security in the United States in 2013*. Publication no. ERR-173. Washington, DC: US Department of Agriculture, Economic Research Service; September 2014

Gunderson C and Ziliak JP. Food Insecurity and Health Outcomes. Health Affairs. 2015. 34(11): 1830-39.

Seligman HK, Laraia BA, Kushel MB. Food Insecurity is Associated with Chronic Disease among Low-Income NHANES Participants. J Nutr. 2010 Feb; 140(2):304-310.

# Understanding Food Insecurity: When does it happen?

## Episodic

- When SNAP or income runs out
- Periods of illness resulting in competing housing and medical costs
- Emergency expense, such as a car repair
- Birthdays, life-cycle rituals
- Ceremonies

## Seasonal or Cyclical

- Summer or holiday breaks – kids out of school
- Seasonal bills
- Feast Days / Potlaches / Community Gatherings

Mabli J, Cohen R, Potter F, Zhao Z. *Hunger in America 2010. National Report Prepared for Feeding America*. Princeton, NJ: Mathematica Policy Research Inc; 2010
Mabli J, Worthington J. Supplemental Nutrition Assistance Program participation and child food security. Pediatrics. 2014;133(4):610–619.

# What happens when someone is experiencing food insecurity?

They…

- Are at greater risk for being emotionally distressed due to competing priorities to fulfill basic needs
- Have little choice over what kinds of food to buy or receive for free, making it difficult or impossible to eat regular healthy meals
- Have periods when they don't eat, then overeat when food is available
- Skip meals to afford prescriptions or medical care
- Skip meals so others in the household have enough to eat
- Water down food and drinks to make them last longer

# REIMAGINING HUNGER RESPONSES IN TIMES OF CRISIS

Insights from Case Examples and a Survey of Native Communities' Food Access During **COVID-19**

Photo by Zuni Youth Enrichment Project

Native American Agriculture Fund · Indigenous Food and Agriculture Initiative · University of Arkansas · FRAC Food Research & Action Center

## 504 SURVEY RESPONDENTS

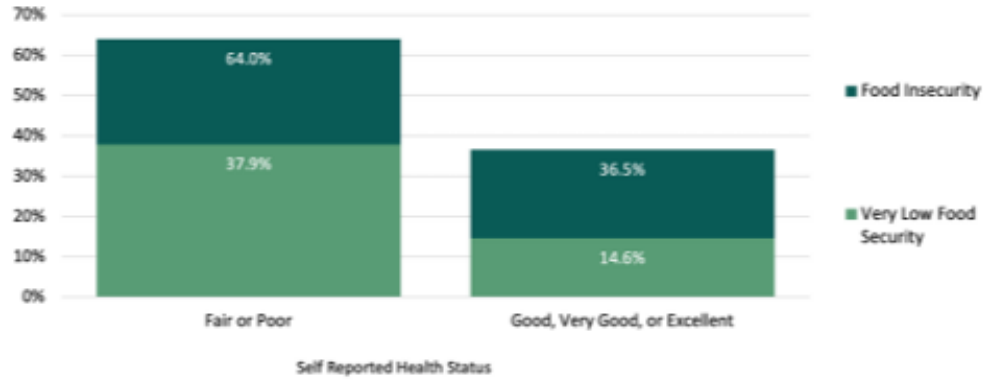
## ABOUT THE SURVEY RESPONDENTS

There were 504 American Indian or Alaska Native survey respondents. Respondents represent a wide diversity of Tribal communities (Figure 1) and 34 states across the country. A full list of respondents' Tribal affiliations can be found in Appendix E.

**Figure 1.** NAAF Food Access Survey Respondents' Tribal Community Affiliations, Sized by Frequency of Response


Source: Native American Agriculture Fund Food Access Survey

**Figure 8.** Food Insecurity and Very Low Food Security Rates During COVID-19 by Self-Reported Health Status




Source: Native American Agriculture Fund Food Access Survey

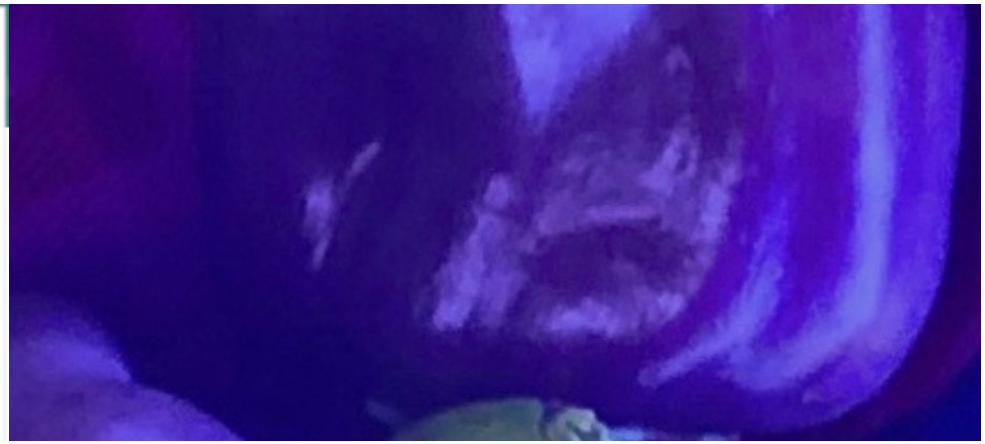
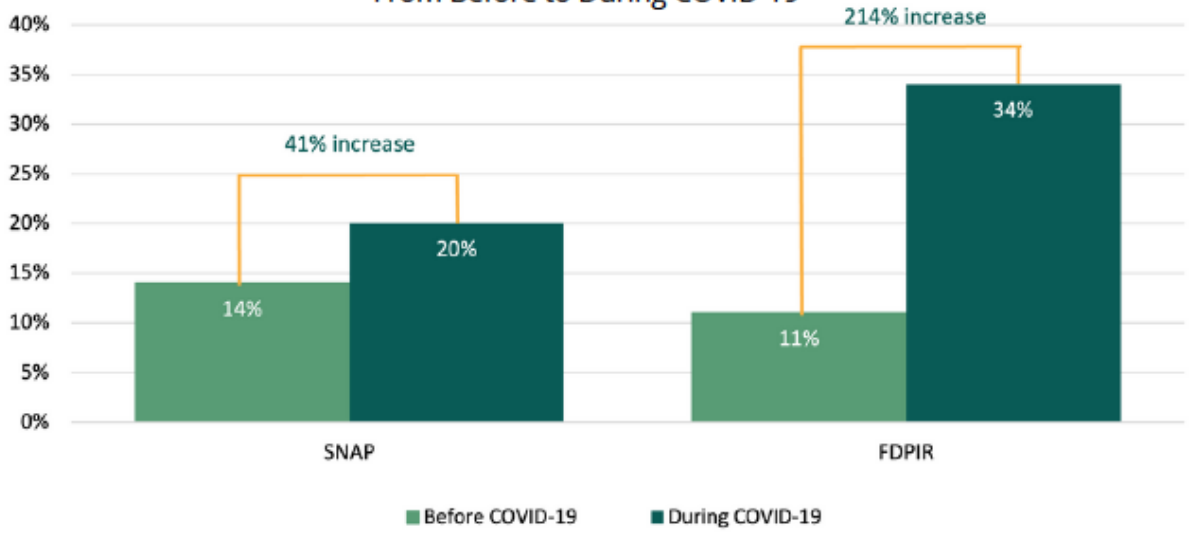


**Figure 10.** Change in SNAP and FDPIR Participation From Before to During COVID-19




Source: Native American Agriculture Fund Food Access Survey

# Food Insecurity Related to Diabetes

Report suggests that prevalence of food insecurity is much higher among adults with diabetes compared with those without diabetes (16% vs. 9%)

Diabetes Care Volume 44, June 2021 e131

Check for updates

## The Prevalence of Food Insecurity Is Highest Among Americans for Whom Diet Is Most Critical to Health

*James B. Kirby, Didem Bernard, and Lan Liang*

*Diabetes Care 2021;44:e131–e132 | https://doi.org/10.2337/dc20-3116*

Diabetes is one of the most prevalent and costly health conditions in the U.S. (1), and diet plays a fundamental role in managing the condition effectively. Yet prior research raises concerns about the "food security" of people with diabetes (i.e., whether they have access to healthy, affordable food) (2,3). It is unknown, however, how widespread food insecurity is among people with diabetes across different insurance types and, moreover, whether food assistance is adequately addressing the problem (4). This study helps to fill this gap by providing national estimates of the prevalence of food insecurity among Americans with diabetes by insurance status and receipt of Supplemental Nutrition Assistance Program (SNAP) benefits.

Our analysis estimated the prevalence of food insecurity (percent who were food insecure) across four groups: those without diabetes, those with diabetes overall, those with insulin-dependent diabetes, and those with diabetes-related eye or kidney problems. Percentages are reported across insurance categories (private coverage all year, Medicaid all year, uninsured all year, or some combination of coverage types) and by receipt of SNAP benefits. The differences discussed were all statistically significant at $P < 0.01$. All estimates and SEs were adjusted for the complex survey design of MEPS and are, therefore, representative of the U.S. noninstitutionalized population.

Results show that the prevalence of Medicaid enrollees with insulin-dependent diabetes; 44% were food insecure, over six times higher than their counterparts with private insurance.

We also found that a sizable fraction of people with diabetes who were food insecure were not receiving SNAP benefits. Over 80% of people with diabetes who had private insurance coverage were not receiving SNAP benefits, likely reflecting SNAP eligibility (individuals who do not qualify for Medicaid are typically not eligible for SNAP). However, even among Medicaid enrollees, 29% of people with diabetes were not receiving SNAP benefits, and over two-thirds (68%) of the uninsured were not receiving SNAP benefits. Even among Medicaid enrollees with diabetes who were receiv-

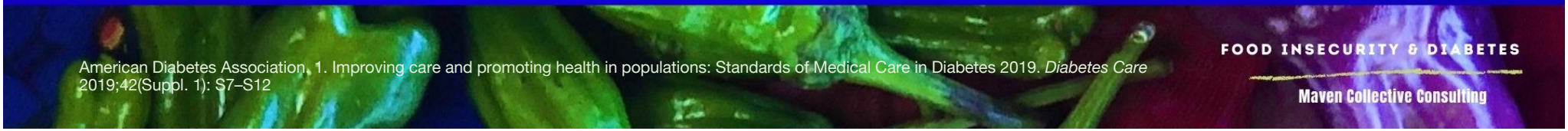


cdc.gov/diabetes/data/statistics/statistics-report.html

James B. Kirby, Didem Bernard, Lan Liang; The Prevalence of Food Insecurity Is Highest Among Americans for Whom Diet Is Most Critical to Health. *Diabetes Care* 1 June 2021; 44 (6): e131–e132. https://doi.org/10.2337/dc20-3116

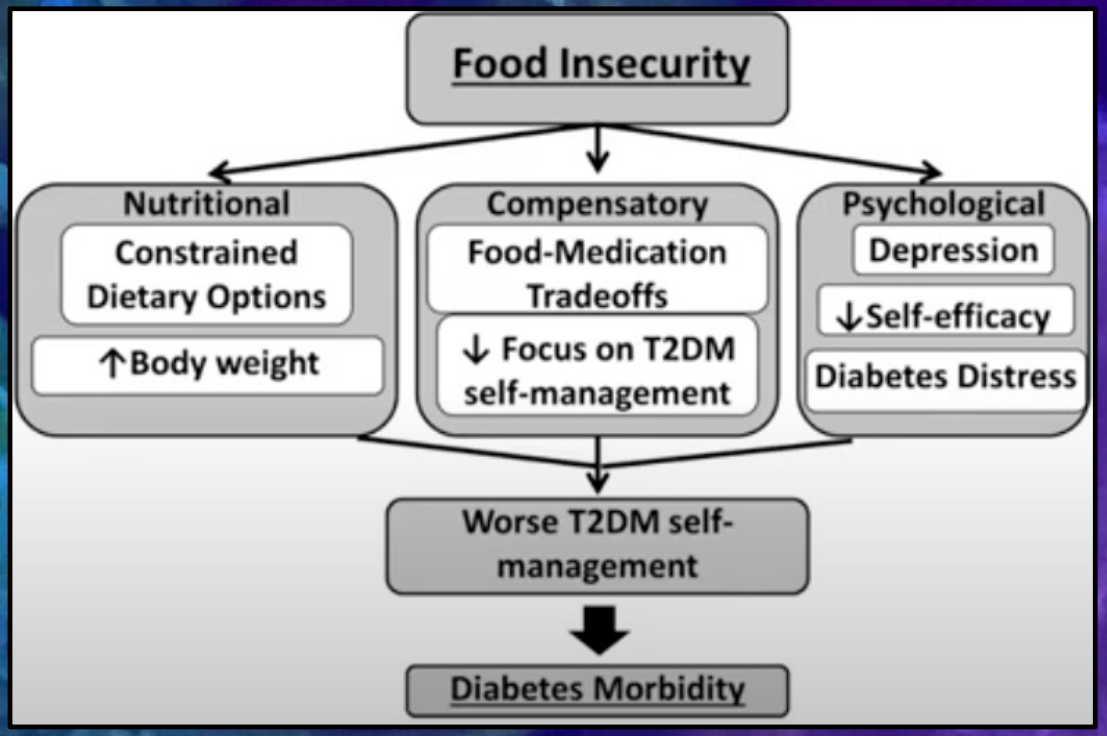
# Food Insecurity Complicates Diabetes Self-Management and Care

- Greater prevalence of type 2 diabetes
- Uncontrolled hyperglycemia
- Worse HbA1c management
  - 0.5-1.0 % higher HbA1C
- Worse blood pressure and LDL cholesterol
- More diabetes complications (micro and macro vascular)
- Severe hypoglycemia
- Depression
- Diabetes distress



American Diabetes Association. 1. Improving care and promoting health in populations: Standards of Medical Care in Diabetes 2019. *Diabetes Care* 2019;42(Suppl. 1): S7–S12

# Impacts of Food Insecurity on Type 2 Diabetes




## Nutritional Pathway

Decrease in access to nutritious foods

## Compensatory Pathway

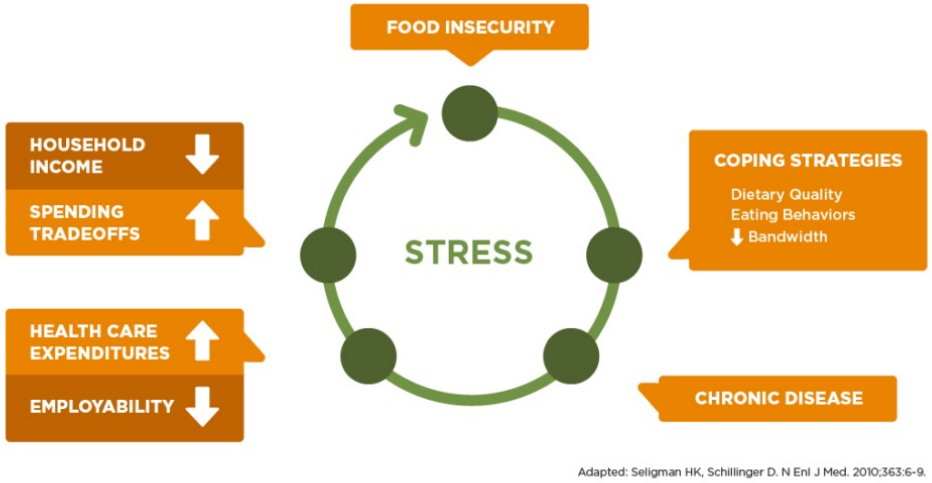
"Get fed or get meds"

## Psychological Pathway

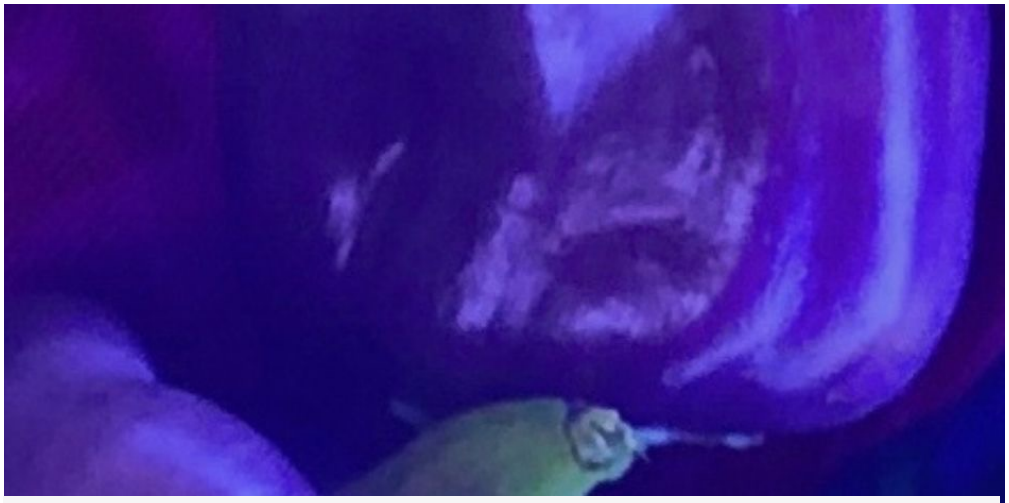
Increased distress, decreased self-efficacy

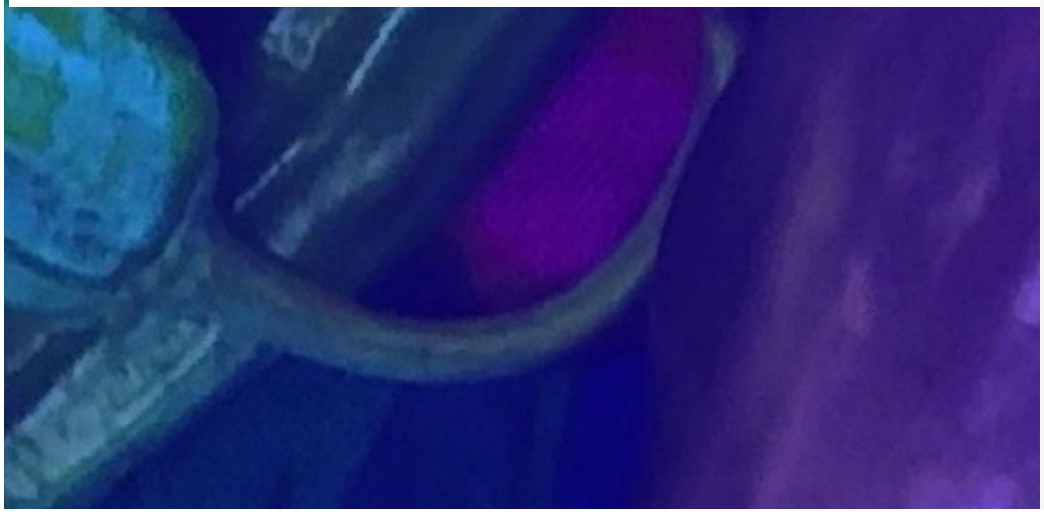
Gucciardi E, Vahabi M, Norris N, Del Monte JP, Famum C. The Intersection between Food Insecurity and Diabetes. *Curr Nutr Rep.* 2014;3(4):324-332. doi:10.1007/s13668-014-0104-4
Seligman HK, Berkowitz SA. Aligning Programs and Policies to Support Food Security and Public Health Goals in the United States. *Annu Rev Public Health*. 2019;40:319-337. doi:10.1146/annurev-publhealth-040218-044132

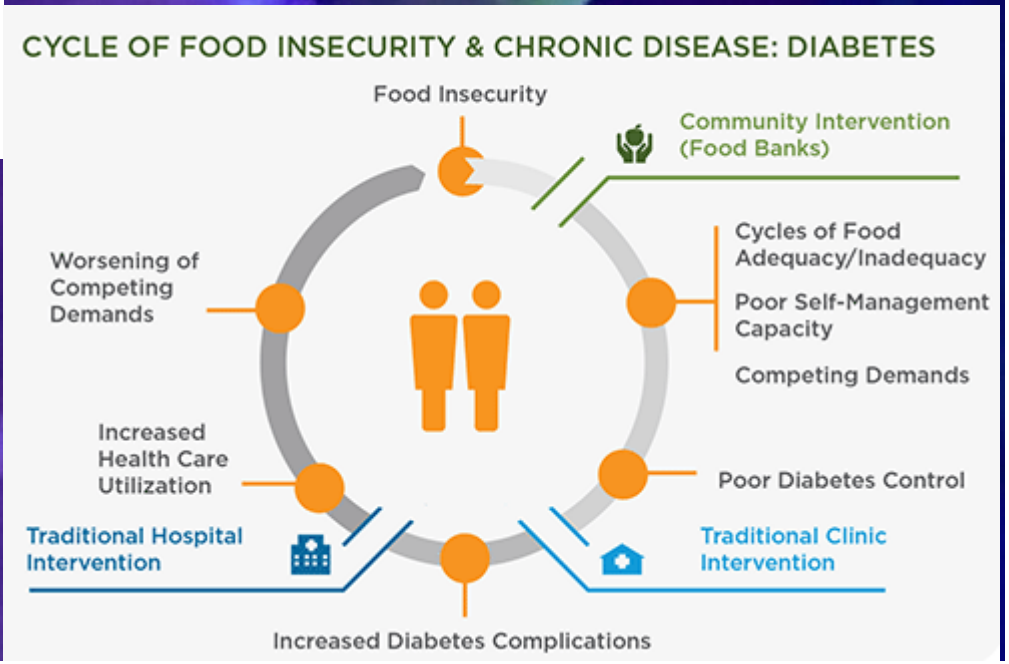
## A Conceptual Framework: Cycle of Food Insecurity & Chronic Disease



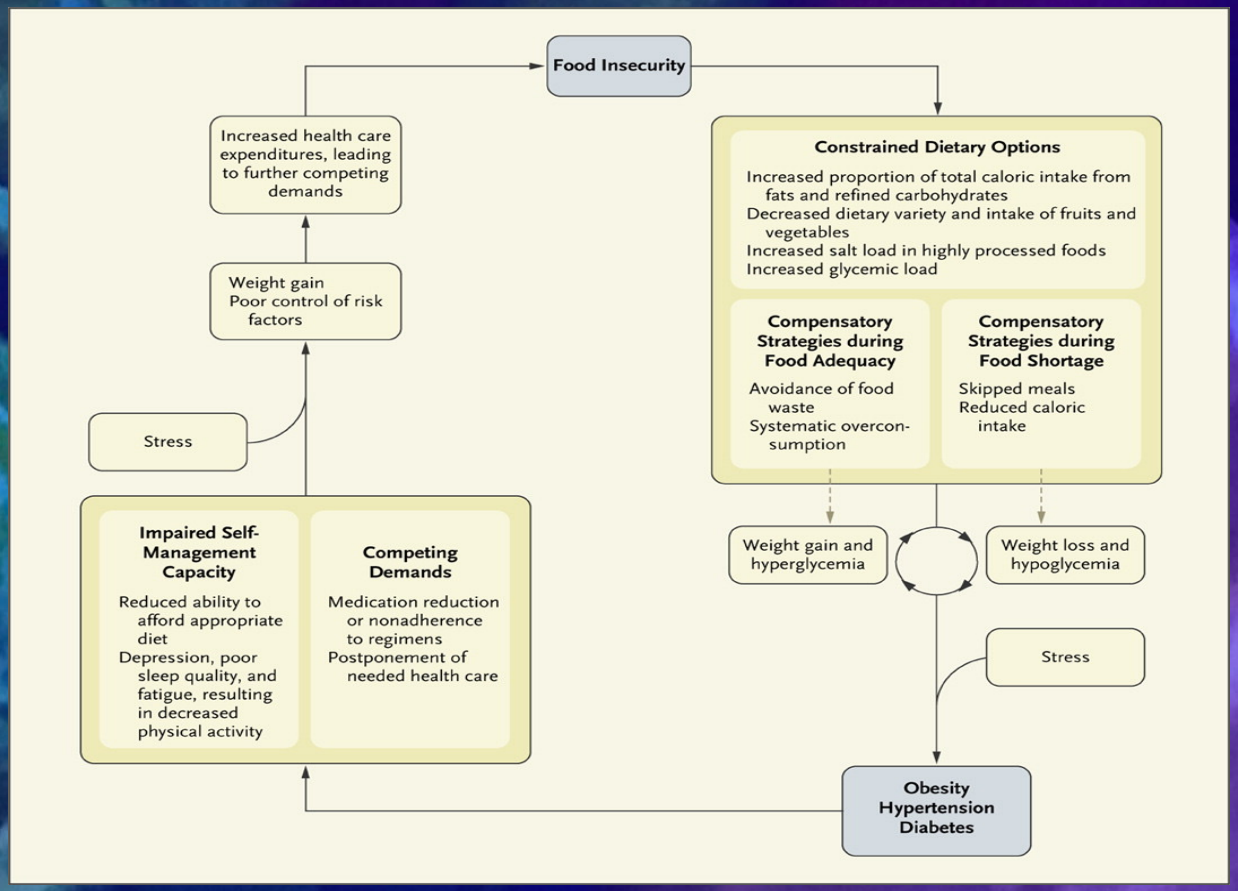

Adapted: Seligman HK, Schillinger D. N Engl J Med. 2010;363:6-9.







# Cycle of Food Insecurity & Chronic Disease




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

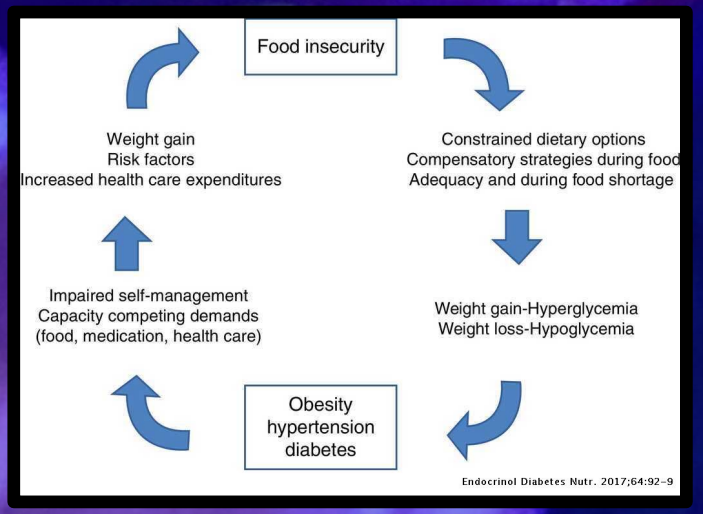
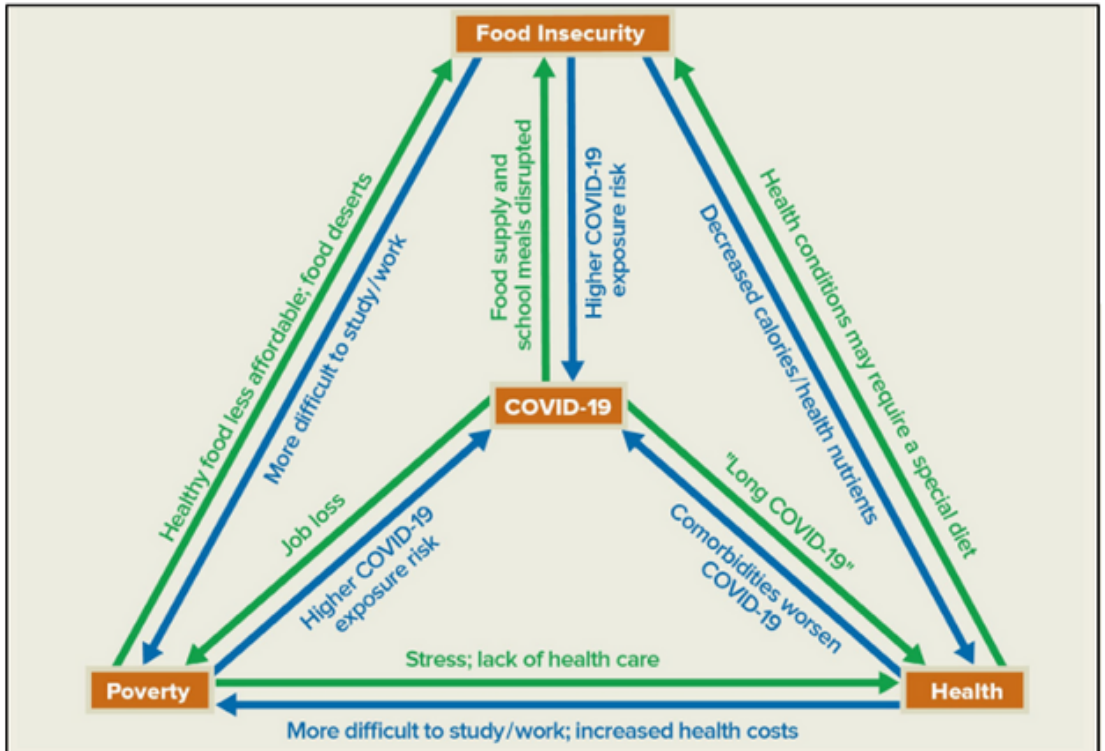


**Figure 3.** Relationships Between Poverty, Hunger, Health, and COVID-19 in Native American Communities




**An equity lens:** These linkages are all influenced by systems of oppression, like structural racism, gender inequity, and classism, making adverse effects and feedback loops stronger among marginalized communities.

Source: FRAC, Linkages Between Food Insecurity, Poverty, and Health During COVID-19.

# Additional Related Barriers to Diabetes Management

- Childcare, elder care
- Transportation
- Stigma
- Housing instability
- Financial strain

# Assessing for Food Insecurity

- Whether to screen for food insecurity is controversial
- It is reasonable to assess food insecurity as part of formulating a diabetes management plan
- Understanding an individual's food security status can be an important part of contextualizing diabetes care

Berkowitz SA, Fabreau GE. Food insecurity: What is the clinician's role?. *CMAJ*. 2015;187(14):1031-1032. doi:10.1503/cmaj.150644

Hessler D, Bowyer V, Gold R, Shields-Zeeman L, Cottrell E, Gottlieb LM. Bringing Social Context into Diabetes Care: Intervening on Social Risks versus Providing Contextualized Care. *Curr Diab Rep*. 2019;19(6):30. doi:10.1007/s11892-019-1149-y

# Hunger Vital Sign ™

*Two-Question Screening for Food Insecurity*

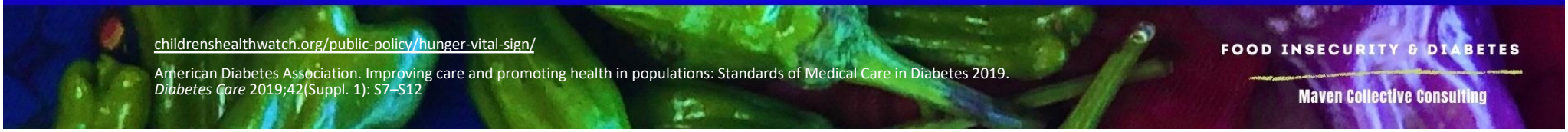
Q1: "Within the past 12 months, we worried whether our food would run out before we got money to buy more."

*- Was this statement often true, sometimes true, or never true for you and your household.*

Q2: "Within the past 12 months, the food we bought just didn't last and we didn't have money to buy more."

*- Is this statement often true, sometimes true, or never true for you and your household.*

**A response of "sometimes true" or "often true" to either or both questions should trigger a more in-depth assessment of food insecurity and potential interventions.**



childrenshealthwatch.org/public-policy/hunger-vital-sign/

American Diabetes Association. Improving care and promoting health in populations: Standards of Medical Care in Diabetes 2019. *Diabetes Care* 2019;42(Suppl. 1): S7–S12

AAFP
AMERICAN ACADEMY OF FAMILY PHYSICIANS

# Social Needs Screening Tool

## HOUSING

1. Are you worried or concerned that in the next two months you may not have stable housing that you own, rent, or stay in as a part of a household?[1]
   - ☐ Yes
   - ☐ No

2. Think about the place you live. Do you have problems with any of the following? (check all that apply)[2]
   - ☐ Bug infestation
   - ☐ Mold
   - ☐ Lead paint or pipes
   - ☐ Inadequate heat
   - ☐ Oven or stove not working
   - ☐ No or not working smoke detectors
   - ☐ Water leaks
   - ☐ None of the above

## FOOD

3. Within the past 12 months, you worried that your food would run out before you got money to buy more.[3]
   - ☐ Often true
   - ☐ Sometimes true
   - ☐ Never true

4. Within the past 12 months, the food you bought just didn't last and you didn't have money to get more.[3]
   - ☐ Often true
   - ☐ Sometimes true
   - ☐ Never true

## TRANSPORTATION

5. Do you put off or neglect going to the doctor because of distance or transportation?[1]
   - ☐ Yes
   - ☐ No

## UTILITIES

6. In the past 12 months has the electric, gas, oil, or water company threatened to shut off services in your home?[4]
   - ☐ Yes
   - ☐ No
   - ☐ Already shut off

## CHILD CARE

7. Do problems getting child care make it difficult for you to work or study?[5]
   - ☐ Yes
   - ☐ No

## EMPLOYMENT

8. Do you have a job?[6]
   - ☐ Yes
   - ☐ No

## EDUCATION

9. Do you have a high school degree?[6]
   - ☐ Yes
   - ☐ No

## FINANCES

10. How often does this describe you? I don't have enough money to pay my bills:[7]
    - ☐ Never
    - ☐ Rarely
    - ☐ Sometimes
    - ☐ Often
    - ☐ Always

## PERSONAL SAFETY

11. How often does anyone, including family, physically hurt you?[8]
    - ☐ Never (1)
    - ☐ Rarely (2)
    - ☐ Sometimes (3)
    - ☐ Fairly often (4)
    - ☐ Frequently (5)

12. How often does anyone, including family, insult or talk down to you?[8]
    - ☐ Never (1)
    - ☐ Rarely (2)
    - ☐ Sometimes (3)
    - ☐ Fairly often (4)
    - ☐ Frequently (5)

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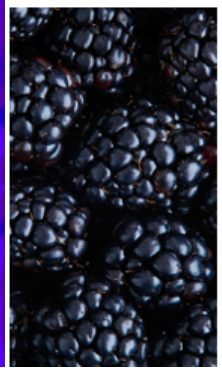
*Advancing health equity in every community*



Section 3:

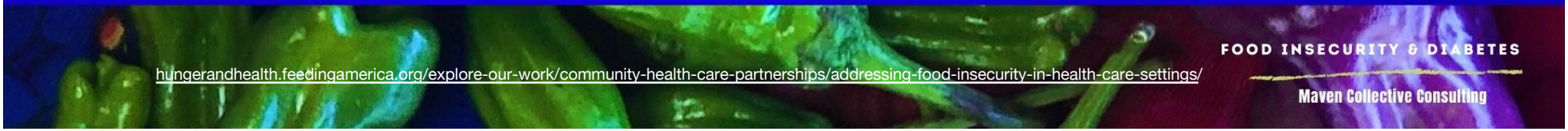
## Conducting a food insecurity assessment

Physicians, clinicians, healthcare professionals, social workers and others can play a critical role in identifying and addressing food insecurity. By screening patients or individuals for social determinants of health, you can easily add food insecurity to your social health discussion, making referrals to community resources if needed.



# Approaches for Improving Food and Nutrition Security in a Clinical Setting

- In an outpatient setting, this could include mobile food distributions, on-site food pantry, emergency food boxes, home delivered food boxes, medically-tailored meal delivery, etc.
- In a hospital setting, this could include an on-site food pantry, food bags or frozen meals to provide to patients upon discharge, home delivered food boxes or meals, etc.



hungerandhealth.feedingamerica.org/explore-our-work/community-health-care-partnerships/addressing-food-insecurity-in-health-care-settings/

# Indigenizing Approaches for Improving Food Security

What good things did you see or hear about happening in tribal communities during the pandemic?

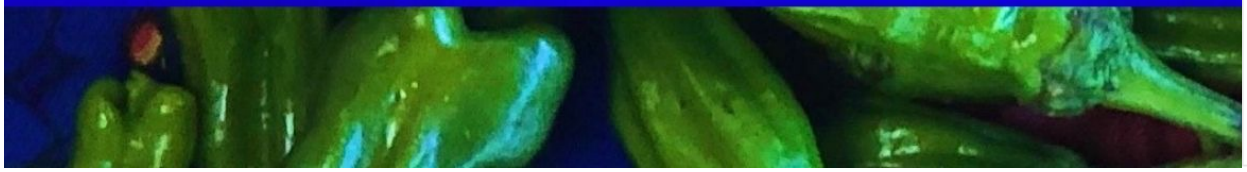
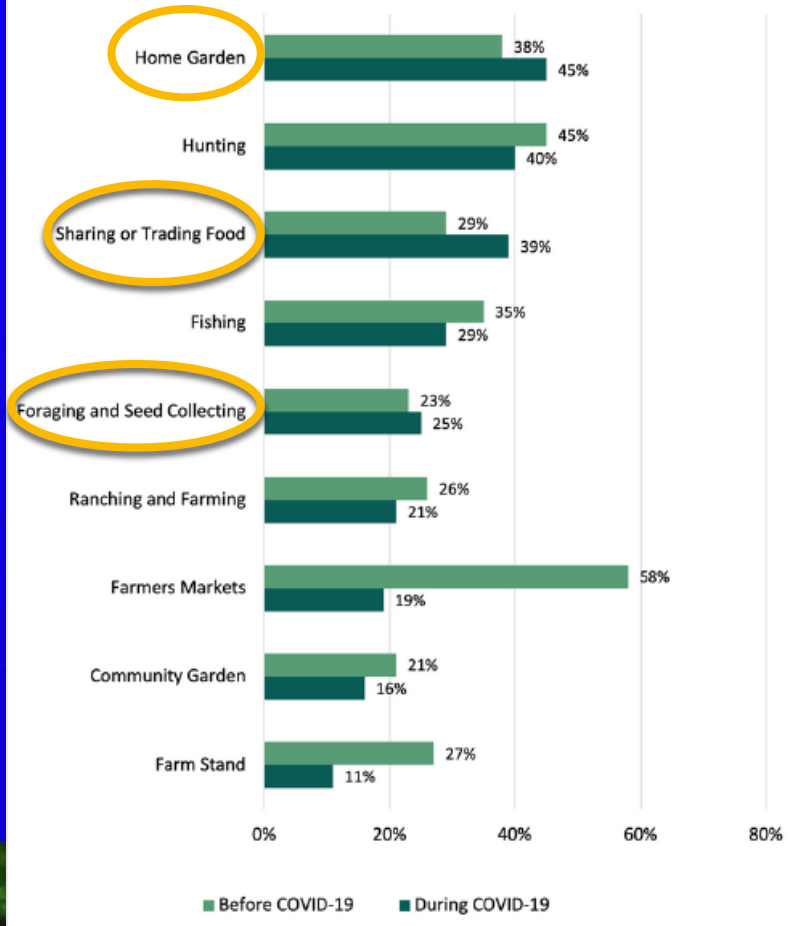


**Figure 13.** Proportion of Respondents That Utilized Each Local Food Procurement Method Before and During COVID-19



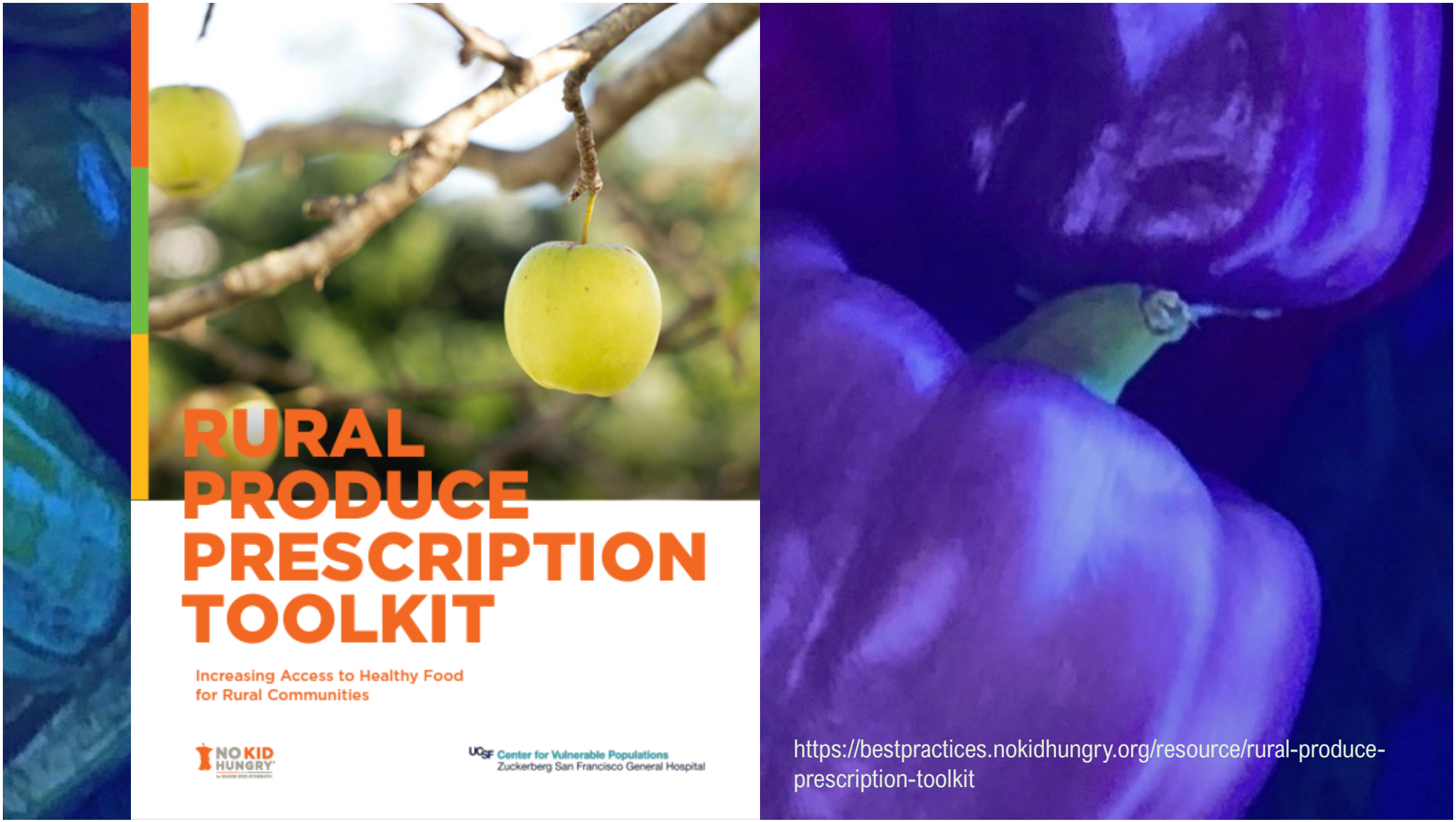

Source: Native American Agriculture Fund Food Access Survey

# Indigenizing Approaches for Improving Food and Nutrition Security

- Honoring ancestors and traditions
- Community leaders and healers
- Creating safe spaces
- Tribal food sovereignty / feeding ourselves

# What is a Produce Prescription Program?


*Not all produce prescription programs require an education component
**Some programs use third party evaluation




https://bestpractices.nokidhungry.org/resource/rural-produce-prescription-toolkit


Poll Question

# COPE
# Navajo FVRx

Community Outreach and
Patient Empowerment Program

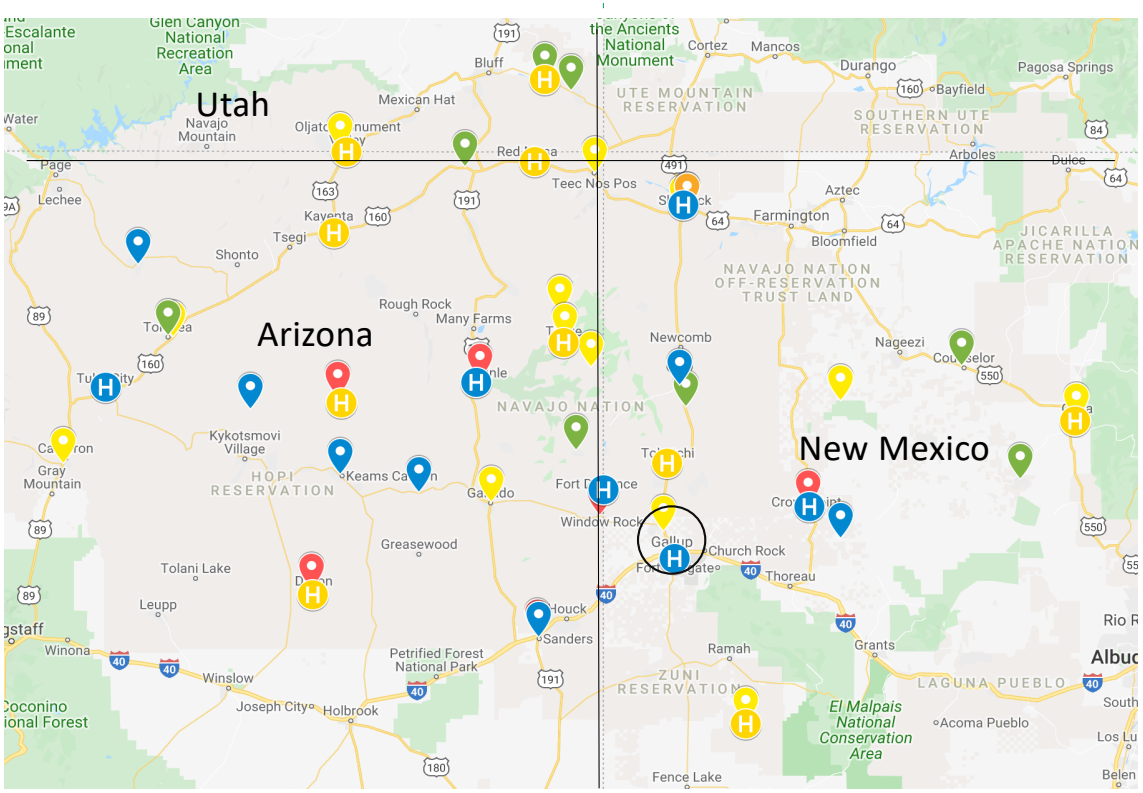
# Navajo FVRx

## Mission

We believe that the power to overturn long-standing, historical health inequalities lies inherently in Native communities themselves. By investing in existing community resources and aligning our work with the vision of tribal leadership, we hope to help catalyze this transformation within our lifetime.

## Goals

- Increase access to healthy foods among Navajo families;
- Increase consumption of healthy and locally grown fruits and vegetables;
- Improve health outcomes in people affected by diet related diseases; and
- Stimulate the economy and promote local sales of healthy foods on Navajo Nation




# Navajo Nation

- Spans across 3 states, (AZ, NM, UT)
- Land base of 27,000 square miles
- There are fewer than 15 grocery stores on the Navajo Nation
- Families often travel an hour or more to the nearest grocery store. (Most often it is off the reservation.)
- Families living on the reservation face food insecurity rates 5x the national average
- FVRx Partners with 11 Clinics and 4 Early Child Centers

# Identifying a need

To create a program that is primarily targeted for a specific regional area, we must identify the need based on feedback, community resources, and health indicators in hopes that the initiative that is deployed is compatible with the need in the community.

- What resources are available in these communities?
- Which population has the highest need?
- How do we tailor the program to become individualized across a large geographical area that meets the needs of the community?

# Fruit and Vegetable Prescription Program

- The FVRx program was first implemented in early 2015 at 6 clinical sites with the help of health care providers and Community Health Representatives who recognized the scarcity of healthy foods offered to Navajo families.
- The program has developed partnerships with healthcare facilities on the Navajo Nation to deliver the program to their community members. In addition to the established partnerships with the healthcare facilities, the FVRx program also extended the partnership to the local retailers who provide the program participants with the opportunity to purchase healthy produce.
- FVRx and it's continuation is heavily reliant on strong strategic partnerships to keep the program operating at an optimal level for our participants.

# Program Challenges

- Limited access to cell service/ Internet
- Data Collection across all sites
- Voucher Redemption
- Personnel bandwidth
- Turnover rates within FVRx Teams
- Electronic systems that are compatible within tribal communities.

# Empowering Navajo communities

- Program vouchers are redeemed at local participating retailers on the Navajo Nation and local growers.
- Food is Medicine concept; cultural foods are including as part of acceptable items that can be purchased at local participating retailers.
- Recipes are often tailored to what is found within their local stores.
- Community partnerships are crucial to the success of the program.
- Motivated healthcare teams!


Utah
Colorado
Montezuma Creek
Cortez
60 mi / 65 min
Teec Nos Pos
Trading Post
38 mi / 38 min
Farmington
90 mi / 90 min
Arizona
New Mexico

TIONA GRANT, MPH
DIABETES COORDINATOR
ASSISTANT CLINICAL MANAGER
TGRANT@UNHSINC.ORG


MONUMENT VALLEY, UT 84536
NAVAJO MOUNTAIN, UT 86044

MONTEZUMA CREEK, UT 84534
BLANDING, UT 84511

# UTAH NAVAJO HEALTH SYSTEM, INC.

# Social Determinants of Health

- According to the U.S. Census Bureau American Community Survey 5-Year Estimates:
  - 2015-2019 Navajo Nation Reservation and Off-Reservation Trust Land (AZ-NM-UT)
    - Percentage of Families and People Whose Income in the Past 12 Months is Below the Poverty Level:
      - All People: U.S.: 12.3% (+/-0.1%)| **AI/AN: 38.7%** (+/-0.9%)
        - Under 18 years: U.S.: 18.5% (+/0.1%) | **AI/AN: 48.1%** (+/-1.7%)
        - Unrelated individuals 15 years and over:
          - U.S.: 24.9% (+/-0.1%) | AI/AN: 55.7% (+/-1.4%)

United States Census Bureau. The American Community Survey. My Tribal Area. https://www.census.gov/tribal/?st=49&aianihh=2430. Accessed July 10, 2021.

# Social Determinants of Health

- According to the 2019 Dig Deep Foundation and U.S. Water Alliance Report:
  - Approx. 2 million Americans live without running water and basic indoor plumbing.
    - 40% of AI/AN on the Navajo Nation haul water and/or use outhouses.
  - AI/AN households are 19x more likely to than white households to lack indoor plumbing.
    - 58 out of every 1,000 AI/AN households lack plumbing, compared with 3 out of every 1,000 white households.
  - Groundwater in some areas has been contaminated by the approx. 521 abandoned uranium mines.
    - Gastric cancer rates doubled in the 1990s where uranium mining occurred.
    - According to the Environmental Protection Agency (EPA), unregulated drinking water sources are the greatest public health risk on the Navajo Nation.

US Water Alliance. Closing The Water Access Gap National Plan. http://uswateralliance.org/resources/blog/us-water-alliance-and-partners-release-closing-water-gap-united-states. Copyright 2021. Accessed July 10, 2021.

# Social Determinants of Health

- According to the U.S. Energy Information Administration (EIA):
  - It is Estimated that 10%-14% of households (i.e. 15,000 families, approx. 60,000 people) on the Navajo Nation do not have access to electricity.
    - This is 10x higher than the national average.
- According to the Navajo Tribal Utility Authority (NTUA):
  - It costs an average home $60,000-$70,000 for a utility line that is around a mile long to be instilled (depending on the terrain).
  - It costs around $1 billion to light up each home at $40,000 per home, along with hundreds of millions dollars needed for electric transmission and distribution stations.
    - For 200 new homes, it would cost approx. $8 million dollars.

Energy Information Administration. Current Issues and Trends. https://www.eia.gov/electricity/. Accessed July 10, 2021.

Navajo Tribal Utility Authority. Light Up Navajo Project. https://www.powermag.com/did-you-know-there-are-60000-u-s-citizens-who-lack-access-to-electricity/. October 2020. Accessed July 10, 2021.

# During Pandemic: Challenges

- Navajo Nation was “At stay at home” or shelter in place
  - Navajo Nation Police were citing individuals were out past curfew without any written memo
  - Only 1 person per vehicle to get necessary items from town
- Residents who did not have running water or any form of washing their hands frequently
- Patients were afraid of getting their care at the clinic especially the elders
- Telephone visits were struggle because of location of home
- Televisits: Lack of internet or electricity
- Patients without Transportation-Retrieve food for their families

# During Pandemic: Successes

- Provided food drives for elders with COVID-19 Relief fund (Weekly)
- Home Visits (85 homes): Elders who were home alone and no other guardians
- Utah Navajo COVID-19 Eldery Emergency Supplies
  - Encouraging the senior community to stay home by minimizing the need to leave for groceries and supplies
- Chizh for Cheii
  - In effort to care for our elders during the winter season
  - 732 loads of free firewood for past 5 years
- Navajo and Hopi Families COVID-19 Relief Fund

# Diabetes Care and Prevention

- The team consists of 8 primary (FTE) individuals:
  - Nick Fox, RN: Program Manager
  - Alan Wygant, FNP: Program Lead
  - Tiona Grant, MPH: Montezuma Creek Diabetes Coordinator
  - Megan Burke, RN: Blanding Family Practice Diabetes Coordinator
  - Christine Schulte, RD, LD: Clinical Dietitian
  - Emily Hunter, PharmD: Clinical Pharmacist
  - Andy Bayless, PharmD: Clinical Pharmacist
  - Thelia Rojas, CNA: Diabetes Specialist

# Diabetes Care and Prevention

- Established in the year 2000 when UNHS became a single service corporation (i.e. Urban Indian Health Center).
- UNHS is located in the Navajo IHS area as a tribal organization (type) under SDPI and received approx. $451,999 in SDPI grant funding. Reports to the ADC and DGM of the Navajo Area.
- The past 11 years have been under the same program manager (Nick Fox, RN).
- 50%-70% of SDPI grant funding pay for full-time employees (FTE) wages with the remainder 50%-30% towards education materials, health promotions, etc. for the Diabetes Care and Prevention (DCP) Team.

# Diabetes Care and Prevention

- Certified Diabetes Education Accredited Program (DEAP) under Association of Diabetes Care and Education Specialists (ADCES)
  - Requirement for reimbursement through the Centers for Medicare and Medicaid (CMS) under outpatient Diabetes Self-Management Training (DSMT).
  - Follow ADCES7 Self-Care Behaviors for Managing Diabetes Effectively (i.e. guidelines for education):
    - Healthy Eating: DCP1
    - Being Active: DCP2
    - Monitoring: DCP3
    - Medications: DCP4
    - Problem Solving: DCP5
    - Reducing Risks: DCP6
    - Healthy Coping: DCP7

Association of Diabetes Care and Education Specialists. Practice. Diabetes Education Accreditation Program. https://www.diabeteseducator.org/practice/diabetes-education-accreditation-program-(deap)/interested-in-learning-more-about-deap. Accessed July 10, 2021.

# Diabetes Care and Prevention

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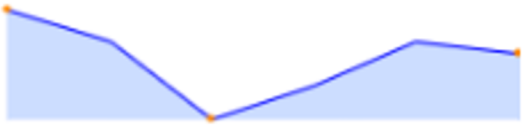
**Patients with Diabetes**

**TY June 2021**

1,420

Pts w/ Diabetes

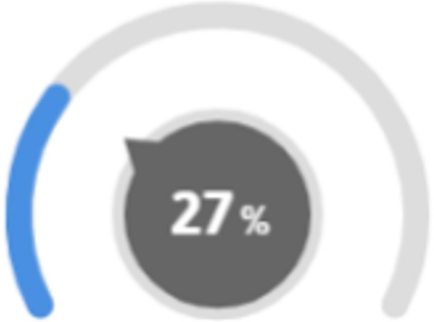


-31 ▼

TY 1/21

**A1c < 7%**

**TY June 2021**



# Diabetes Care and Prevention

athenahealth

azara healthcare

**Diabetes Scorecard**

| TY June 2021 | | | | | |
|---|---|---|---|---|---|
| MEASURE | RESULT | CHANGE | NUM | DENOM | EXCL |
| DM BP < 130/80 | 32.6% | +0.8% ↑ | 463 | 1,420 | 7 |
| DM BP < 140/90 | 65.4% | +0.9% ↑ | 928 | 1,420 | 7 |
| DM Depression Screening | 60.1% | -10.7% ↓ | 755 | 1,256 | 171 |
| DM Eye Exam | 32.9% | +25.4% ↑ | 491 | 1,492 | 0 |
| DM Foot Exam | 21.7% | +4.4% ↑ | 309 | 1,426 | 1 |
| DM Tobacco Use Assessment & Cessation | 46.6% | -13.6% ↓ | 662 | 1,420 | 7 |
| DM Urine Protein Screening | 70.1% | -0.5% ↓ | 1,000 | 1,427 | 0 |

# Diabetes Care and Prevention

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azara healthcare

**A1c Cascade**

| TY June 2021 | | |
|---|---|---|
| PTS W/ DIABETES | 1,420 | |
| DM A1c < 7 | 387 | 27% |
| DM A1c > 8 and A1c <= 9 | 164 | 11.5% |
| DM A1c >= 7 and A1c <= 8 | 253 | 17.8% |
| DM A1c > 9 | 440 | 31% |
| DM A1c does not exist | 170 | 12.0% |

**LDL Cascade**

| TY June 2021 | | |
|---|---|---|
| PTS W/ DIABETES | 1,427 | |
| DM LDL < 100 | 692 | 48% |
| DM LDL >= 100 AND < 130 | 149 | 10% |
| DM LDL >= 130 | 49 | 3% |
| DM LDL Untested | 537 | 38% |

# Diabetes Care and Prevention

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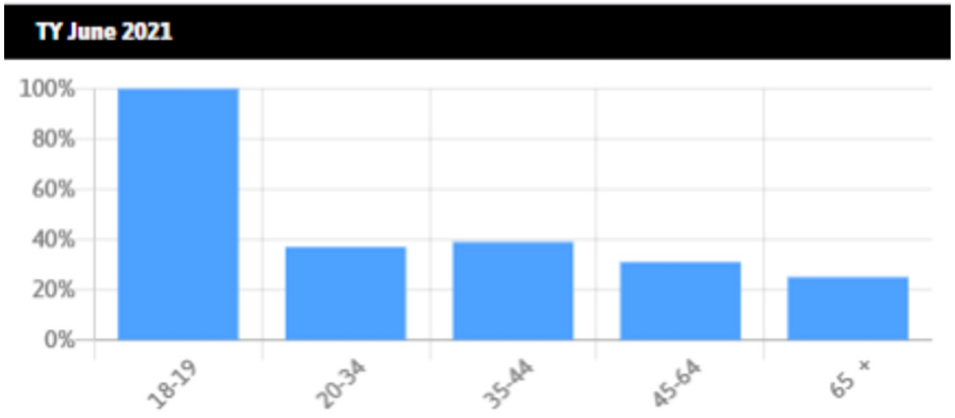
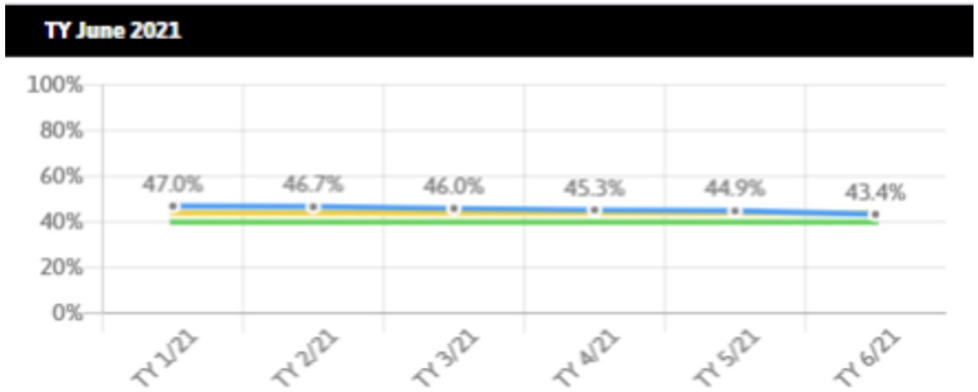
**A1c Uncontrolled by Age**




**A1c > 9% / Untested**



# Diabetes Care and Prevention

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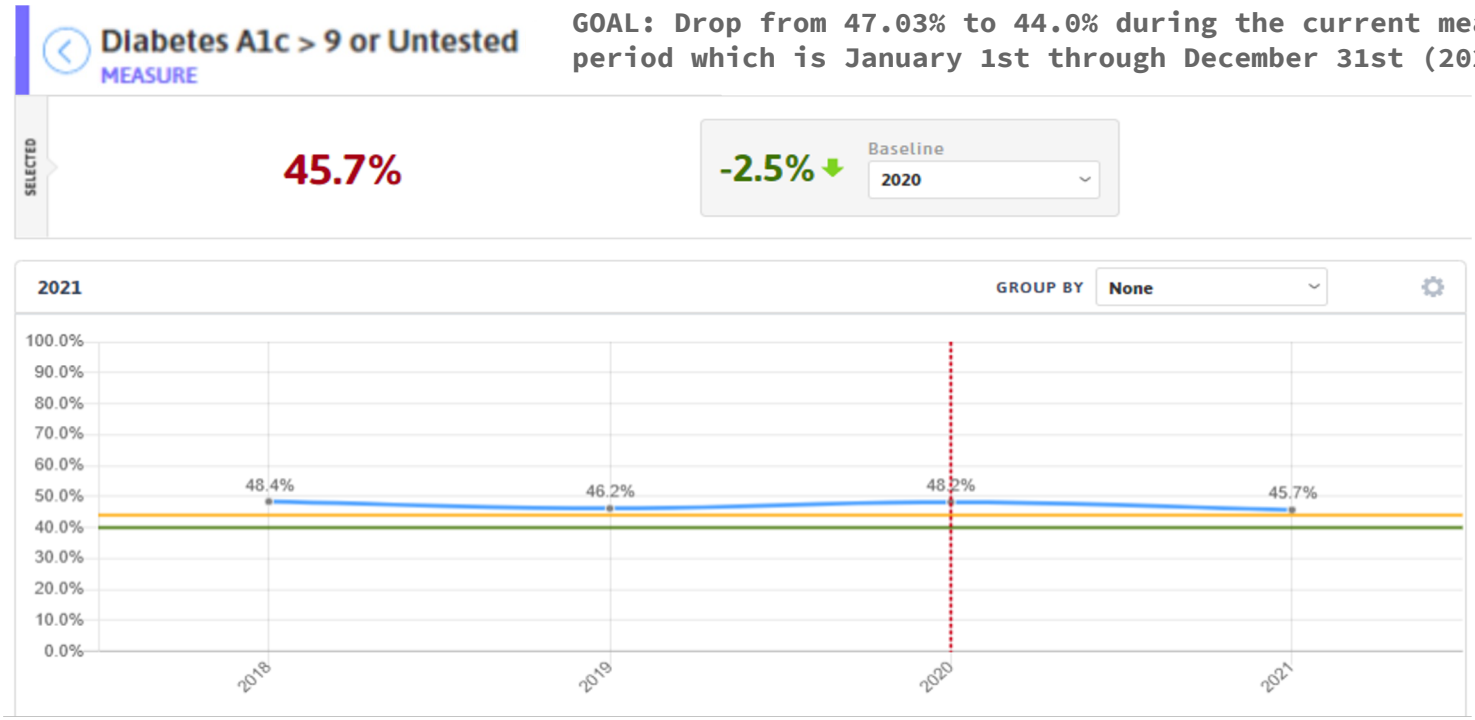
**GOAL: Drop from 47.03% to 44.0% during the current measurement period which is January 1st through December 31st (2021).**



# Diabetes Care and Prevention

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azara healthcare

## Diabetes A1c > 9 or Untested

MEASURE

Comparison GROUP BY Rendering Locations 2ND None Selected

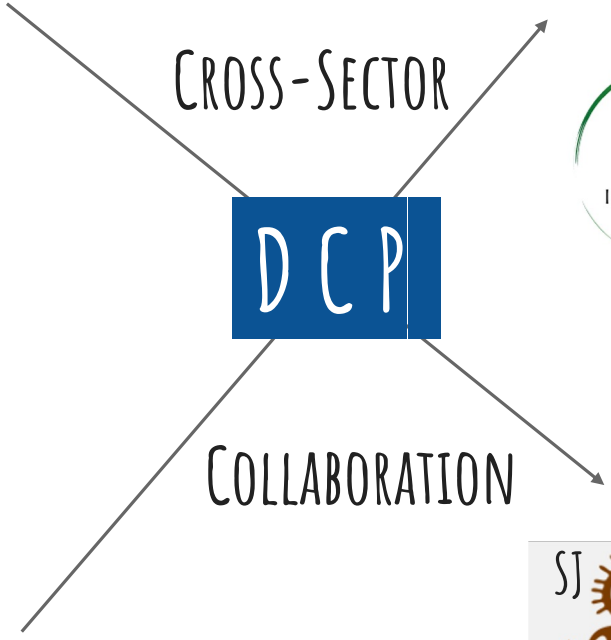
| RENDERING LOCATIONS | RESULT | CHANGE | NUM | DENOM | EXCL |
|---|---|---|---|---|---|
| Navajo Mountain Comm... | 55% | + 6.1% ▲ | 28 | 51 | 0 |
| Monument Valley Comm... | 52% | - 0.9% ▼ | 172 | 329 | 1 |
| Blanding Family Practice ... | 43% | - 1.3% ▼ | 256 | 596 | 1 |
| Montezuma Creek Comm... | 41% | - 2.8% ▼ | 204 | 493 | 1 |

# Our Mission

We exist to improve quality of life through comprehensive, self-empowered, culturally-sensitive healthcare and amazing customer service.

# Our Vision

UNHS will develop and expand health care services and community partnerships while improving economic opportunities for all communities.




SAN JUAN COUNTY

INDIAN HEALTH SERVICE · PHS · 1955 ·

SSEP

COPE
Community Outreach & Patient Empowerment

IINA BIHOO'AAH

CDC
NATIONAL DIABETES PREVENTION PROGRAM

HEALTH
UNIVERSITY OF UTAH

EXTENSION
UtahStateUniversity

SJ SD

SHARE OUR STRENGTH'S
COOKING MATTERS

# Community Outreach & Patient Empowerment

- Navajo FVRx Program
  - Maternal Cohort: currently pregnant or 2 years postpartum
    - Mother is participant; entire family (e.g. parents) benefit from vouchers
    - Enrollment is for 9 month period
  - Pediatric Cohort: children ages 0-5 years
    - Child is the participant; child + family benefit from vouchers (e.g. solids foods, larger portions)

    Enrollment is for 6 month period
  - Adult (Geriatric) Cohort: 18+ (New Cohort, working on details
    - Focus on adults 65+
    - Enrollment is 6 months

NAVAJO FVRx

# Community Outreach & Patient Empowerment

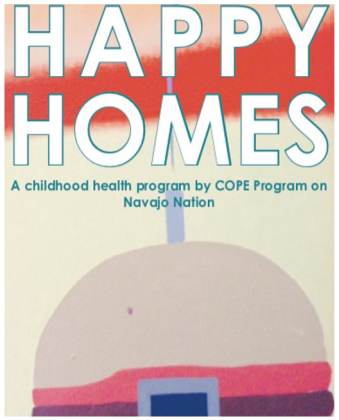
- Navajo FVRx Program
  - Cycle enrollment sessions are every 10 months after the prenatal cohort.
    - Pediatric/Maternal Cohort: Sessions 1-6
    - Maternal Cohort: Sessions 7-9
  - There is a continued enrollment wait list for the following cycle.
  - Participants receive a total of $112 per month of vouchers; must be used by expiration date.

NAVAJO FVRx

# Community Outreach & Patient Empowerment

- 2017-2019: Cycles 1-4
  - 10 Participants (6 months)
- 2019: Cycle 5
  - 13 Pediatric (6 months)
  - 11 Maternal (9 months)
- 2020: Cycle 6
  - 15 Pediatric (6 months)
  - 12 Maternal (9 months )
- 2020: Cycle 7
  - 12 Pediatric (6 months)
  - 15 Maternal (9 months)
- 2021: Cycle 8
  - 10 Maternal (9 months)
  - 7 Pediatric (6 months)

Served: 53 Maternal Participants
55 Pediatric Participants




**AM I ELIGIBLE?**

- Families with children ages 0–5
- Pregnant mothers
- Mothers 2 years postpartum can participate
- Must be a Navajo Nation resident
- Program does not interfere with current food benefits


- National Diabetes Prevention Program-or National DPP was created in 2010 to address the increasing burden of prediabetes and type 2 diabetes in the United States
- Evidence-based cost-effective interventions that help prevent type 2 diabetes in communities across the United States
- Curriculum: CDC Recognized lifestyle change program focus on healthy eating and physical activity which showed that people with preDM who take part in structured lifestyle change program
- Results: Participants achieved weight loss 5-7% of their body weight and reduce the risk of developing type 2 diabetes by 58% in adults at high risk for the disease

PREVENT T2

A PROVEN PROGRAM TO PREVENT OR DELAY TYPE 2 DIABETES

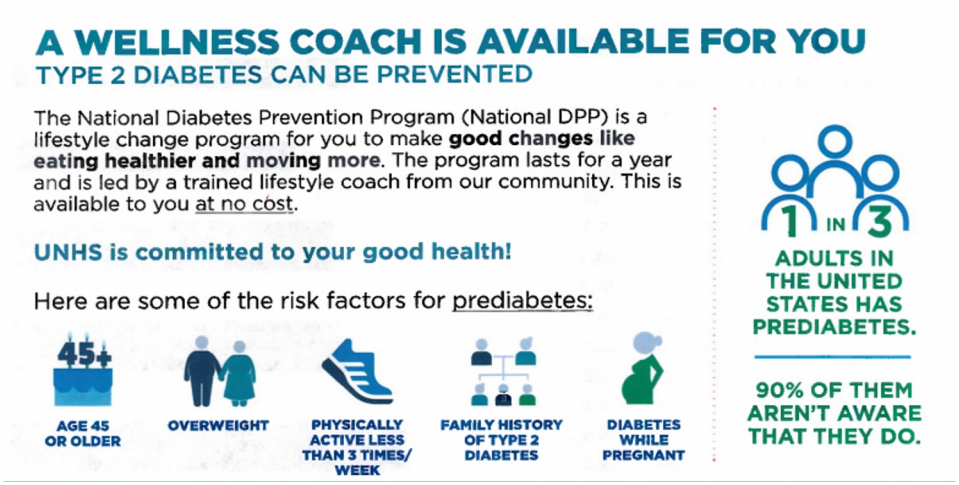
- 1 year committed program
  - 12 weeks weekly sessions
  - 12 weeks every other week sessions
  - 6-12 months- Monthly sessions

2018-2019: Montezuma Creek 10(8 Finished)

2019-2020:(Pandemic) Blanding(In person-Hybrid) 7 participants

2021:Blanding(Hybrid) 3 participants

2022: Blanding (Hybrid) 5 participants





QUESTIONS?

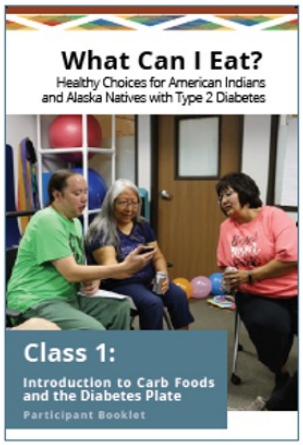
# Upcoming Webinar

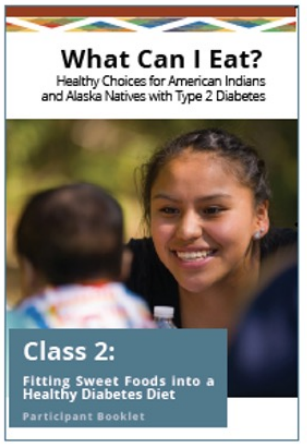
**What Can I Eat?** Diabetes Nutrition Education Program for American Indians and Alaska Natives with Type 2 Diabetes

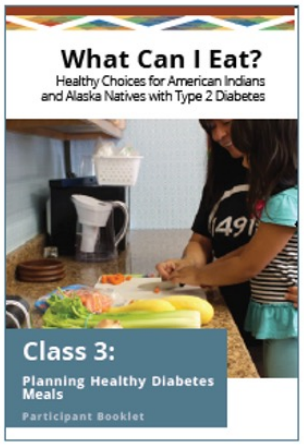
## Experiences of Site Coordinators and Educators

**Thursday, July 14, 12pm-1pm MT**

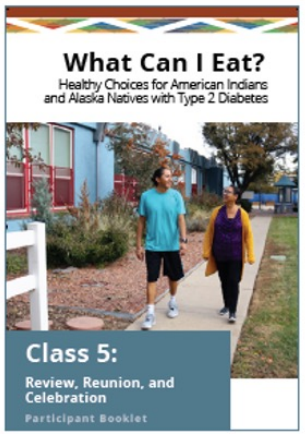
Registration link in the chat








Colorado School of
PUBLIC HEALTH

# Center for American Indian and Alaska Native Diabetes Translation Research

For questions about pilot funding or the Center:

Angela.Brega@cuanschutz.edu

To learn more about CAIANDTR:

https://coloradosph.cuanschutz.edu/research-and-practice/centers-programs/caianh/projects/CAIANDTR

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