



MEALS ON WHEELS

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ANNUAL CONFERENCE AND EXPO

DALLAS, TX



ADVANCES IN MALNUTRITION

SPEAKERS:

1. Susan Saffel-Shrier, MS, RDN, CD, Certified Gerontologist, Professor, Department of Family & Preventive Medicine , University of Utah School of Medicine
2. Seanna Marceaux, MS, RDN, LD, Vice President of Nutrition, Health and Impact

THE ADVANCES IN ADDRESSING MALNUTRITION



Susan Saffel-Shrier, MS, RDN, CD

Certified Gerontologist

Professor

Department of Family & Preventive Medicine

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No Disclosures



ACL INNOVATIONS IN NUTRITION PROGRAMS AND SERVICES GRANT

Bridging High Quality Malnutrition Screening, Assessment,
and Intervention for Older Adults from Hospital to Home:
Impact of Nutrition Home Visitations

Susan Saffel-Shrier, MS, RD, CD, Certified Gerontologist
Amy Covington, MS, RDN, CD
Charlotte Vincent, PhD, RDN, CD



Objectives: Why, What, Who, Where & How

Review premise of current ACL malnutrition grant

- Why project is timely
- What project entails
- Who are players
- Where project was conducted
- How YOU can apply to your setting

University of Utah ACL Innovation Grant 101

- Who: University of Utah and Aging and Adult Protective Services and three Utah Area Agencies on Aging (AAA)
- What: Develop a high-quality, malnutrition home visitation pilot program for home delivered meal (HDM)
- Malnutrition project outcomes:
 - Implement malnutrition protocol, training, and resources for nutrition home visitation programs
 - Demonstrate a transferable home visitation model program
 - Provide RDN directed nutritional assessment and interventions •improve coordination of home and community-based services (HCBS) to address malnutrition risk factors
 - Tailor nutrition home visitation programs for urban, rural, or frontier



Why: Malnutrition Project

51.3 billion annual cost— disease associated malnutrition

1 out of 2 older adults at risk for malnutrition

Need *Outcomes That Matter*

Impact of nutrition assessment and therapy

- Hospital readmissions
- Quality of life
- Functionality
- Social isolation
- Mental health
- Cognition
- Coordination of services



What: Malnutrition Assessment

An acute, subacute or chronic state of nutrition in which a combination of varying degrees of overnutrition or undernutrition with or without inflammatory activity have led to a change in body composition and diminished function.



What: Screening vs Assessment

The purpose of **screening** is to determine whether an **assessment** is needed. The purpose of **assessment** is to gather the detailed information needed for a treatment plan that meets the individual needs. ... **Screening** is a process for evaluating the possible presence of a particular problem.

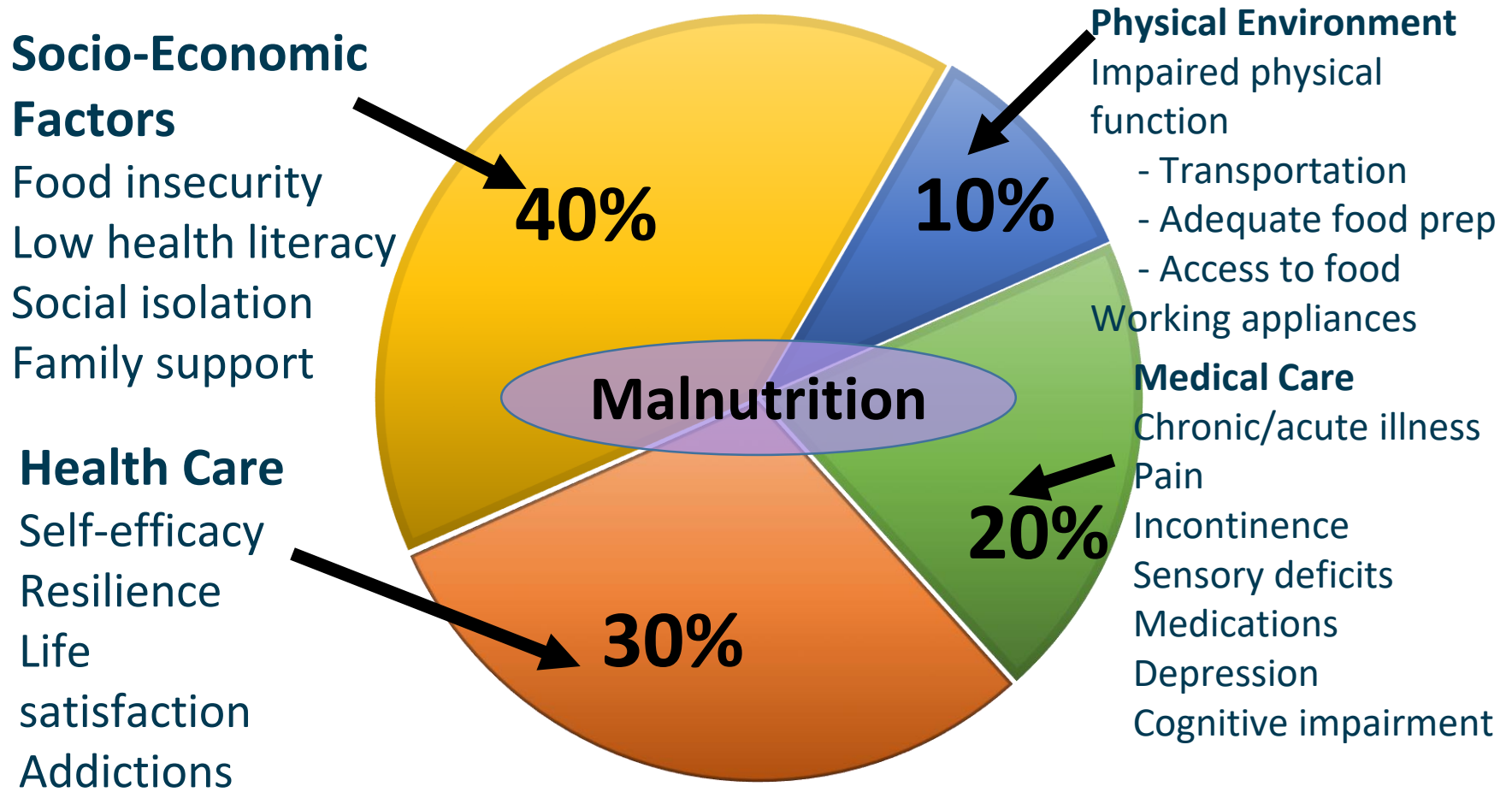


What: Comprehensive Nutrition Assessment

RDN licensed to performed | Components: Best Practice

- Functional assessment
 - Instrumental activities of daily living
 - Activities of daily living
- Social/environmental assessment: social determinants of health
- Medical history
- Dietary intake
- Nutrition-focused physical exam
 - Anthropometrics: Muscle wasting/Fat loss
 - Hand grip Strength
- Mental
 - Cognition
 - Depression
- Health care wishes

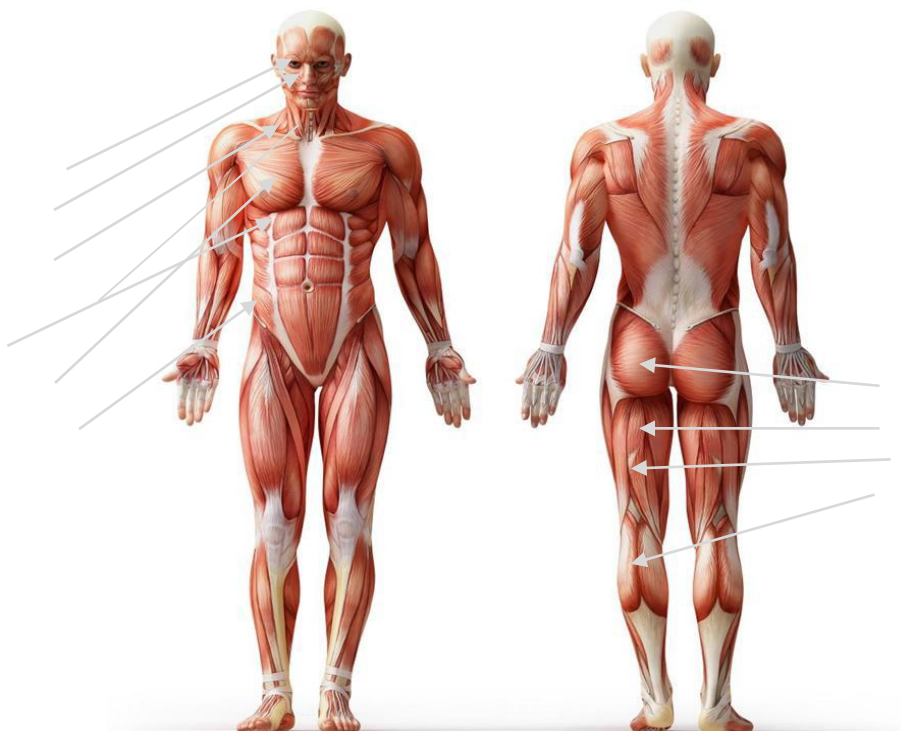
What: Malnutrition & Social Determinants of Health



What: Nutrition Focused Physical Exam

• Upper Body

- Temples
- Orbital
- Clavicle
- Shoulders
- Ribs
- Arms
- Hands



• Lower Body

- Thigh
- Knee
- Calf
- Ankle

Temporal Wasting



Orbital Region

Normal



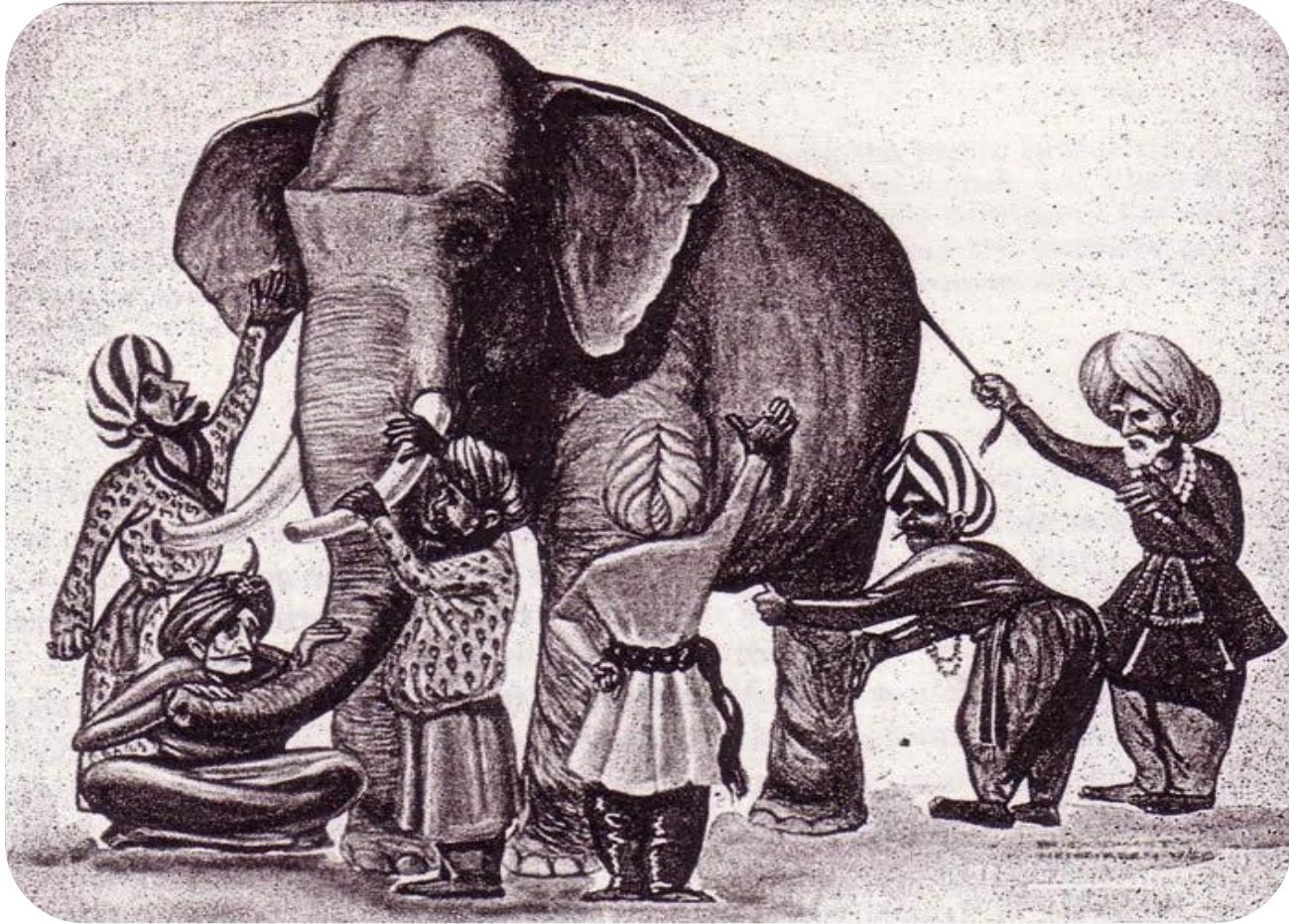
Moderate



Severe



Who: The Elephant in the Room & Malnutrition



The Blind Men and the Elephant John Godfrey Saxe (1816-1887)



Who Are the Players?

Health care providers

- Hospital readmissions
- Population health
- Nutrition services

Administrators

Insurance companies

Community-based services

- YOU
- Home health
- Skilled Nursing
- Etc

Who: ACL Grant Participant Characteristics

- 75 yrs.
- Female
- Lives in a home alone
- Divorced
- Does not have adequate finances
- 44% use other services (food stamps, HEAT, lifeline, food pantry/bank, subsidized housing, tax abatements)
- Is a U.S. citizen or resident
- Caucasian
- Not a vet or spouse of a vet
- 50% have pets
- Reports anxiety
- Reports depression
- Able to heat and serve pre-made meals
- Able to eat independently
- Can feed, dress, and groom themselves, but requires assistance ambulating
- Have had UWL in the past 6 months

Who: Home Assessments Impact on Participants

Adherence to nutrition recommendations

- Manage nutrition Rx
- Apply nutrition concepts to daily eating

More likely to continue MOW

Understand importance of nutrition in maintaining health



Who: Registered Dietitian Nutritionist (RDN): Community vs Clinical

Antiquated terms:

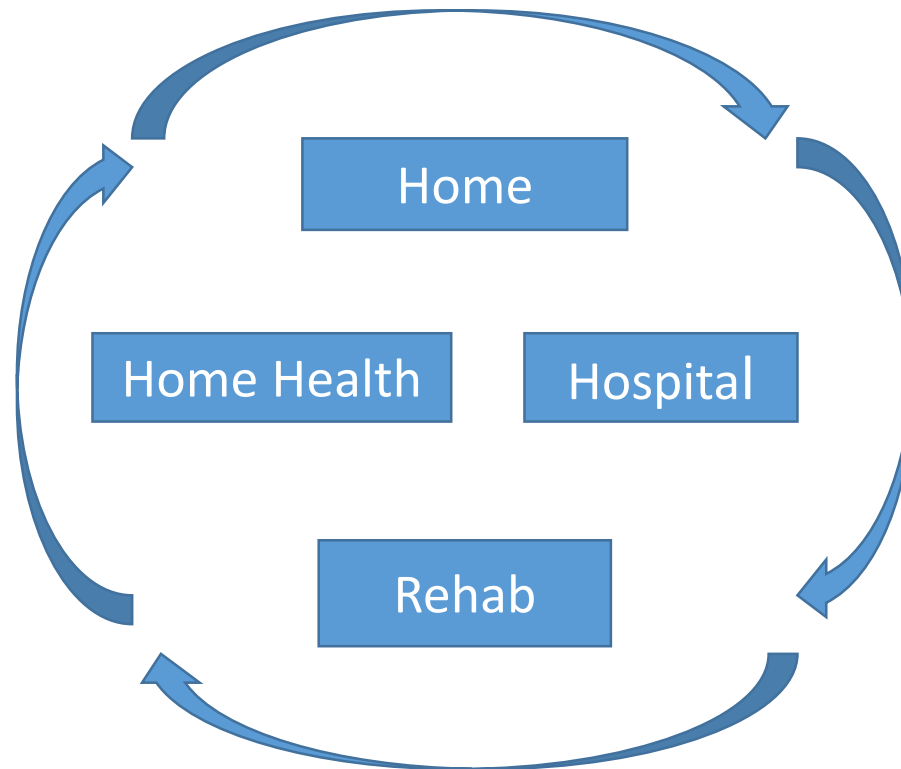
Clinical RDN = Hospital

Community RDN = Public health

Food Service RDN?

- ✓ Expansion of breadth and depth of nutrition services
- ✓ Clinical RDNs needed in the community
- ✓ Clinical RDNs needed to assess community-based malnutrition

Where: Malnutrition Cycle



Where: Bridging Transitions of Care

- Transitions of care: “A set of actions designed to ensure the coordination and continuity of care received by patients as they transfer between different locations or levels of care.” (E Coleman)
- Or, more simply, “every transition of care involves a throw and a catch.”



Where: Transitions & Malnutrition

Patient outcomes

- 2 out of 3 Medicare beneficiaries are readmitted or die within 1 year of their index hospitalization.*
- About 50% of hospital discharges are associated with at least one medication error.†
- About 50% higher readmission rate associated with malnutrition**

Costs

- Hospital readmissions among Medicare recipients cost \$26 billion annually, of which \$17 billion is potentially avoidable. ‡
- Malnutrition increases hospital cost between 19%-29%***

*Jencks SF, Williams MV, Coleman EA. NEJM 2011

**Isabel M et al Clinical Nutr 2003;22(3):235.

***Guerra RS J. Hum. Nutr. Diet., 29, 165.

†Moore C et al. J Gen Intern Med 2003.

‡Robert Wood Johnson Foundation, 2013.



Where: The “Silo” Problem

Medical care & health care “silos” often do not communicate well with one another:

- Financial silos
 - e.g. government/private insurance
- Professional silos
 - e.g. hospital/clinics/community services/providers
- Technological silos
 - e.g. non-interoperable electronic health records





How: Take the Malnutrition Challenge

- ✓ Awareness
- ✓ Recognition/identification
 - Screening
 - Assessment & treatment
- ✓ Coordination of services
 - ✓ Across continuum of care
 - ✓ Transitions of care



Do Our Meals ‘Work’?



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Objectives

- About Meals on Wheels Central Texas
- Why outcomes matter?
- Our experience with translating research into practice using an evidence-based screening tool
 - How we piloted and implemented this process
 - How this is used for program evaluation, prioritization and resource allocation
- Our current outcomes
- What now?



Meals on Wheels Central Texas

Mission

Meals on Wheels Central Texas seeks to **nourish** and **enrich** the lives of the homebound and other people in need through programs that **promote dignity and independent living.**

OUR PROGRAMS*

MEALS ON WHEELS

Nutritious home-delivered meals

Volunteers delivered 565,727 meals!

HOME REPAIR

Major home repairs/renovations done by professionals

178 homes transformed into safer places to live!

IN-HOME CARE

Assistance with the everyday activities of daily living

200,652 hours of in-home care provided!

SENIOR CENTERS

Meals and activities at local senior centers

109,260 congregate meals provided!

CASE MANAGEMENT

Designed to fit specific needs of clients, including technology assistance

9,450 hours of case management provided!

PALS

Pet food and medical care for our clients' pets

37,712 pounds of dog and cat food delivered!

MIKE'S PLACE

Respite and activity center for those with Alzheimer's or dementia

3,567 hours of fun and respite provided!

GROCERIES TO GO

Grocery and prescription shopping assistance

8,189 volunteer hours dedicated to helping clients!

BREAKFAST MEALS

Additional meals for those who are food insecure

Clients received 42,860 breakfast meals!

COUNTRY WHEELS

Home-delivered meals for those living in rural areas

30,091 meals delivered to rural clients!

HANDY WHEELS

Safety-related minor home improvements and repairs

849 jobs completed!

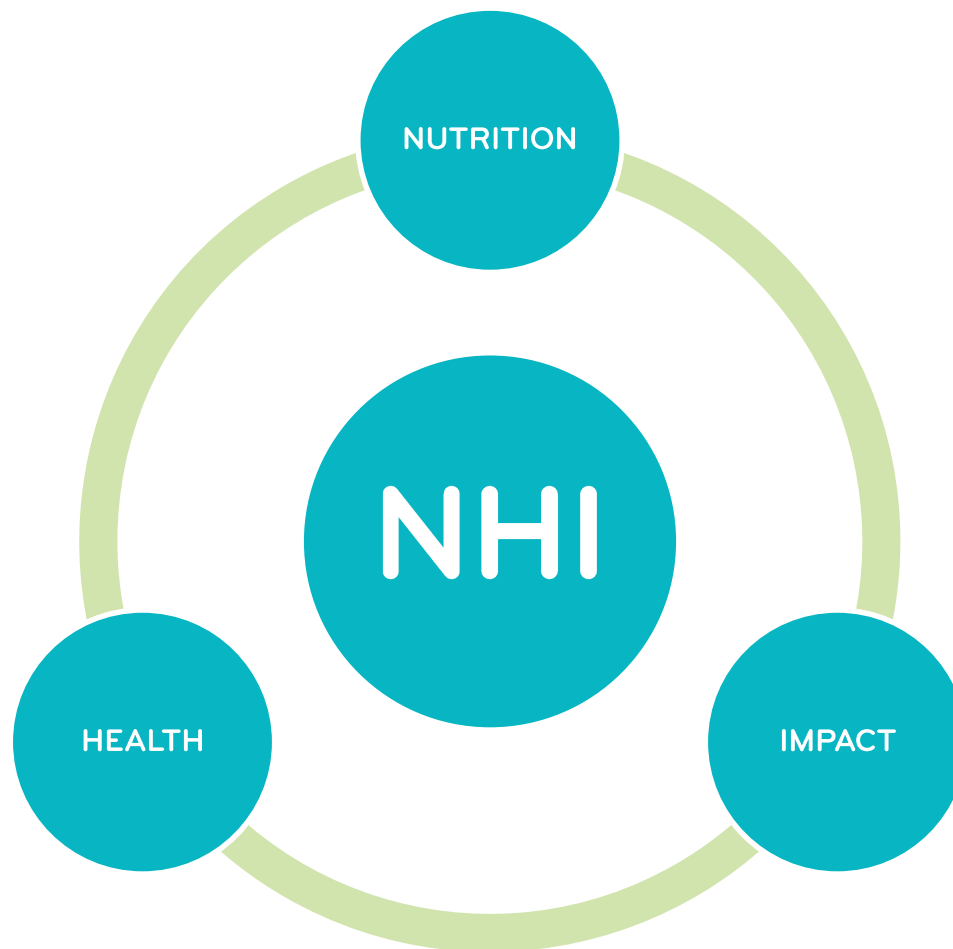
HOPE

Shelf-stable groceries for our most at-risk clients

94,907 lbs. of food delivered!

**All statistics from FY2018*

NHI Department



Why Outcomes Matter for Meals on Wheels programs?

Justification for funding has moved from
the concept of:

‘Doing good in the community’ → ‘A Portfolio of investment’

Reduce uncertainty, reduce risk = creates value for our Stakeholders

Experience-based
*food consumption,
satisfaction, self-reported
health improvement*



Measurable Outcomes
*health, functional,
healthcare related
outcomes*

Kali S. Thomas (2015) Outcomes Matter: The Need for Improved Data
Collection and Measurement in Our Nation's Home-Delivered Meals
Programs, *Journal of Nutrition in Gerontology and Geriatrics*, 34:2, 85-89,
DOI: [10.1080/21551197.2015.1031591](https://doi.org/10.1080/21551197.2015.1031591)

Why Outcomes Matter

- What are we doing right?
- What improvements are needed?
- New funding possibilities

“Quality in a product or service is not what the supplier puts in. It is what the Customer gets out.”

-Peter Drucker (1909-2005)

We provide valuable service to a large population but the lack of data has led to lack of evidence-based need for our services

“How do we demonstrate a need beyond outputs?”

(Thomas 2015)

Outputs- a measurement of something your organization does– “producing 3000 meals/day”

Outcomes- a measurement of the impact your organization has– “improved nutrition status in x clients”

Meals

Our Marquee Program

MTM (Medically-Tailored Meals)

Chronic Disease Self- Management

- General Health
- Diabetes-Friendly
- Heart Healthy
- Renal-Friendly
- Digestive-Friendly

**Soft and Pureed versions for each are available*

CHOICE MEAL PROGRAM

Increasing Satisfaction

Beef or chicken?
Turkey or Vegetarian?

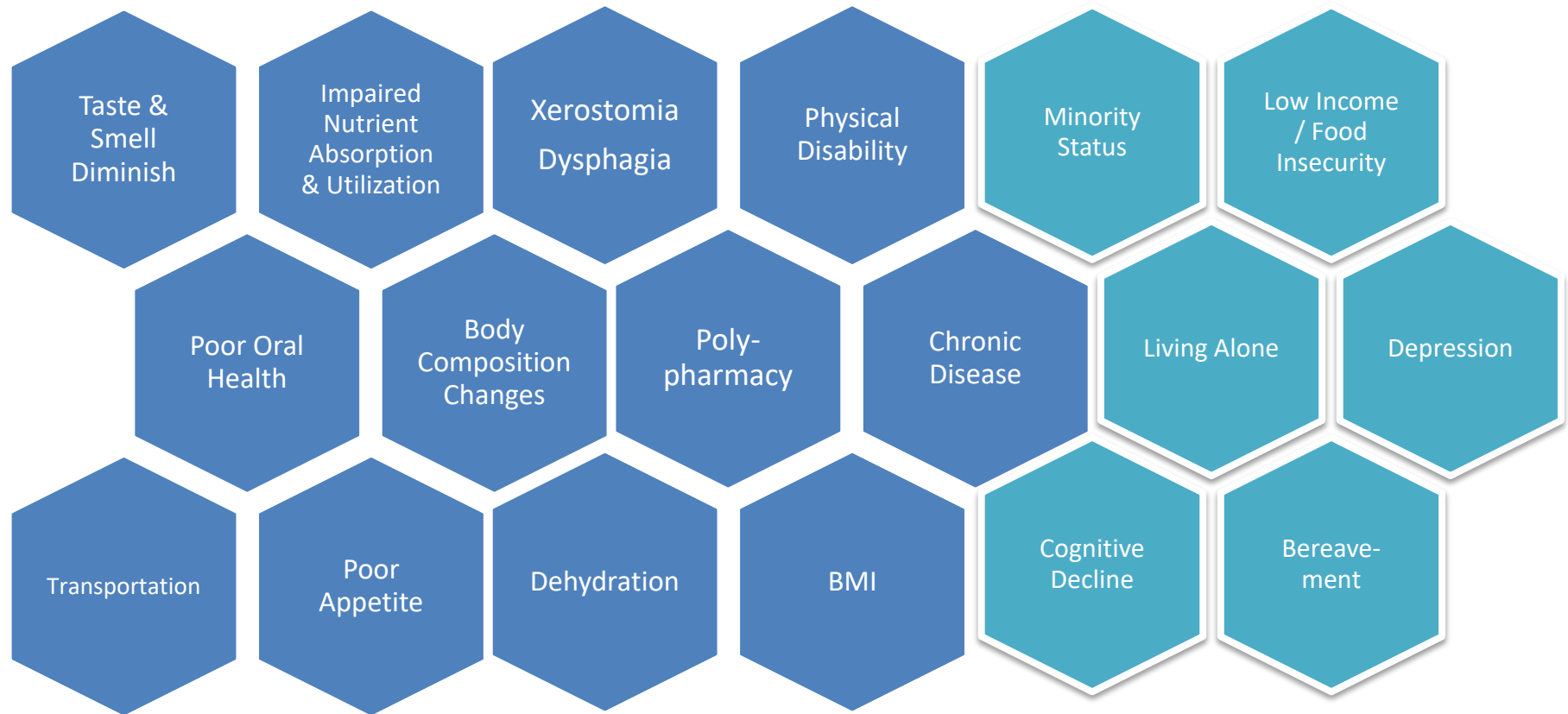
Clients decide – promoting dignity and independence!

Our Current Demographics

Meals on Wheels Central Texas

- 2400 active homebound clients
- <1,000 active congregate participants
- 72% over 65 yoa
- 87% live below 200% FPL
- 52% live alone
- Average time on program 3 years

Factors Strongly Influencing Nutritional Well-Being





Malnutrition

Affects:

- Independent living
- Healthy aging
- Severity of chronic conditions and disabilities

Leads to:

- Vulnerable immune systems
- Poor wound healing capacity
- Physical disability
- Poor quality of life
- Higher health care and societal costs

National Blueprint: Achieving Quality Malnutrition Care for Older Adults 2017, Curtis et al 2017, Goates et al 2016, Abizanda et al 2016, Bilotta et al 2010, Sharkey 2008; Hickson, 2006, Lee & Frongillo, 2001



What We Know

- Nutrient Intake is lower in homebound population
- HDM Meal contributes markedly to the participants' intake

But do we improve malnourishment status?

Millen et al 2001, Payette 1995, Ritchie 1997, Gloth et al 1996, (Wright et al 2015, Sahyoun and Vaudin 2014, Zhu and An 2013 Dasgupta et al 2005, Sharkey et al 2003, Sharkey et al 2002, Krondl et al 2003, Lokken et al 2002, MacLellan 1997, Herndon 1995, Stevens et al 1992, Bunker et al 1986, Lipshitz et al 1985, Davies et al 1981



Using the Mini Nutritional Assessment

An evidence-based approach to measure success

65+ ONLY

Food intake and weight loss

Frailty/Functionality

Hospitalization

Depression & dementia

Body composition

Mini Nutritional Assessment MNA®

Nestlé
Nutrition Institute

Last name:		First name:		
Sex:	Age:	Weight, kg:	Height, cm:	Date:

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?

- 0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake

B Weight loss during the last 3 months

- 0 = weight loss greater than 3 kg (6.6 lbs)
1 = does not know
2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs)
3 = no weight loss

C Mobility

- 0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out

D Has suffered psychological stress or acute disease in the past 3 months?

- 0 = yes 2 = no

E Neuropsychological problems

- 0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems

F1 Body Mass Index (BMI) (weight in kg) / (height in m)

- 0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater

Self Reported: height overestimated
Weight underestimated

Barrett et al 2015, Gorber 2007, Babiarczyk and Sternal 2014

IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2.
DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.

F2 Calf circumference (CC) in cm

- 0 = CC less than 31
3 = CC 31 or greater

Screening score (max. 14 points)

- 12 - 14 points: Normal nutritional status
8 - 11 points: At risk of malnutrition
0 - 7 points: Malnourished

Mini Nutritional Assessment (MNA)

- Full MNA validated & considered Gold Standard (MDs assessments, biochemical, anthropometrics)
- Extensively tested for validity, sensitivity, specificity, reliability
- MNA validated & has high specificity, sensitivity, and diagnostic accuracy
- MNA most appropriate for elderly community setting (when compared with other tools)

Guigoz, Vellas, & Garry, 1994; Guigoz et al., 1996, Sieber, 2006, Green & Watson, 2006, Rubenstein et al., 2001, Kaiser et al., 2009, Wikby et al., 2008; Cuervo et al., 2008, Isenring et al., 2012, Phillips et al 2010



...and they lived
happily ever after.



Feasibility Pilot, 2011



Focus Group with Case Managers

Initial Concerns

- “We are not medical professionals”
- Calf Circumference:
 - “What if the client has weeping wounds?”
 - “Amputations?”
 - “Client not comfortable with measurement?”
 - “Client makes me uncomfortable?”
- “Will this increase **time** of home visit?”



3 Month Pilot

- Timed screening tool
- Asked client's permission to do measurement

“One way we check your nutritional health is by measuring your calf. When we don't get enough nutrition, we lose muscle. The first place we lose muscle is in our calf. May I measure you calf muscle?”
- Asked how comfortable client was with measurement afterwards
- Case manager documented their comfort level with measurement



Results of Pilot

- 60 clients screened
- Client Comfort Level (scale of 1-5)= 4.4
- Only 1 client felt uncomfortable with calf circumference measurement afterwards
- Case manager comfort level
- Average Time Spent MNA-SF: 3.5 minutes



Before
Meals
~MNA~

Hot Meals
delivered by
volunteers

After 3 mo.
of Meals
~MNA~

FY 2018



2 out of 3 **new Meals on Wheels clients** who were malnourished or 'at risk' **improved** in just 3 months

Meals on Wheels program shown to significantly improve nutrition status

J Nutr Health Aging. 2018;22(7):861-868

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IMPACT OF HOME-DELIVERED MEALS ON NUTRITION STATUS AND NUTRIENT INTAKE AMONG OLDER ADULTS IN CENTRAL TEXAS

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S. MARCEAUX², BJ FRIEDMAN²

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Abstract: *Objective:* This study aimed to measure changes in nutrition risk and nutrient intake after older adults received home-delivered meals (HDM) for 3 months. *Design:* This study used a pre-posttest study design, with data collected before and after 3 months of HDM services. *Setting:* Two HDM programs that serve the metropolitan areas of Austin and San Antonio, Texas. *Participants:* Study participants were aged 60 years or older, without dementia or terminal illness, and receiving HDM in Austin, Texas and San Antonio, Texas for 3 months. *Measurements:* The Nutrition Screening Initiative (NSI) and Mini Nutrition Assessment-Short Form (MNA-SF) were used to assess nutritional risk. The National Cancer Institute Diet History Questionnaire II (DHQ II) was used to assess nutrient intake over the past month. *Results:* After receiving 3 months of HDM, nutrition status significantly improved as measured by the NSI and MNA-SF. More participants met or exceeded the recommended dietary allowances (RDA) for magnesium and zinc after receiving HDM compared to before receiving HDM. Dietary supplement intake was associated with a higher nutritional risk. *Conclusion:* Improvements in nutrition status were found after 3 months of receiving HDM, whereas intake of most nutrients did not change significantly. Results of this study provide further evidence that HDM can reduce nutritional risk of older adults, and may inform HDM programs on the differences of NSI and/or MNA-SF to assess nutritional risk of clients.



Using the USDA Food Security Questionnaire

An evidence-based approach to prioritize resources
and measure success



Food Insecurity (FI)

- Contributes to malnutrition
- FI is now also being associated with greater subsequent health care expenditures in the US
- FI older adults eat fewer nutrients and are more likely to:
 - Be in poor health
 - Suffer from depression
 - Have limitations when it comes to activities of daily living-- a strong predictor of institutionalization and is one of the greatest threats to the ability of older adults to live independently
- From 2001-2016, the number of food insecure seniors increased by 200% representing rates higher than before the Great Recession in 2007
- # of FI older adults will increase by 50% in 2025

Berkowitz et al 2018, Ziliak and Gunderson 2015, Ziliak and Gunderson 2018, Edemekong and Levy 2018, Beswick et al 2010, National Blueprint: Achieving Quality Malnutrition Care for Older Adults 2017



USDA Food Security Questionnaire

- Food bought didn't last and didn't have money to get more
- Couldn't afford to eat balanced meals
- Ever cut the size of or skip meals because there wasn't enough money for food (how often)
- Eat less than you felt you should because wasn't enough money for food
- Every hungry because there wasn't enough money for food



Scoring Guide

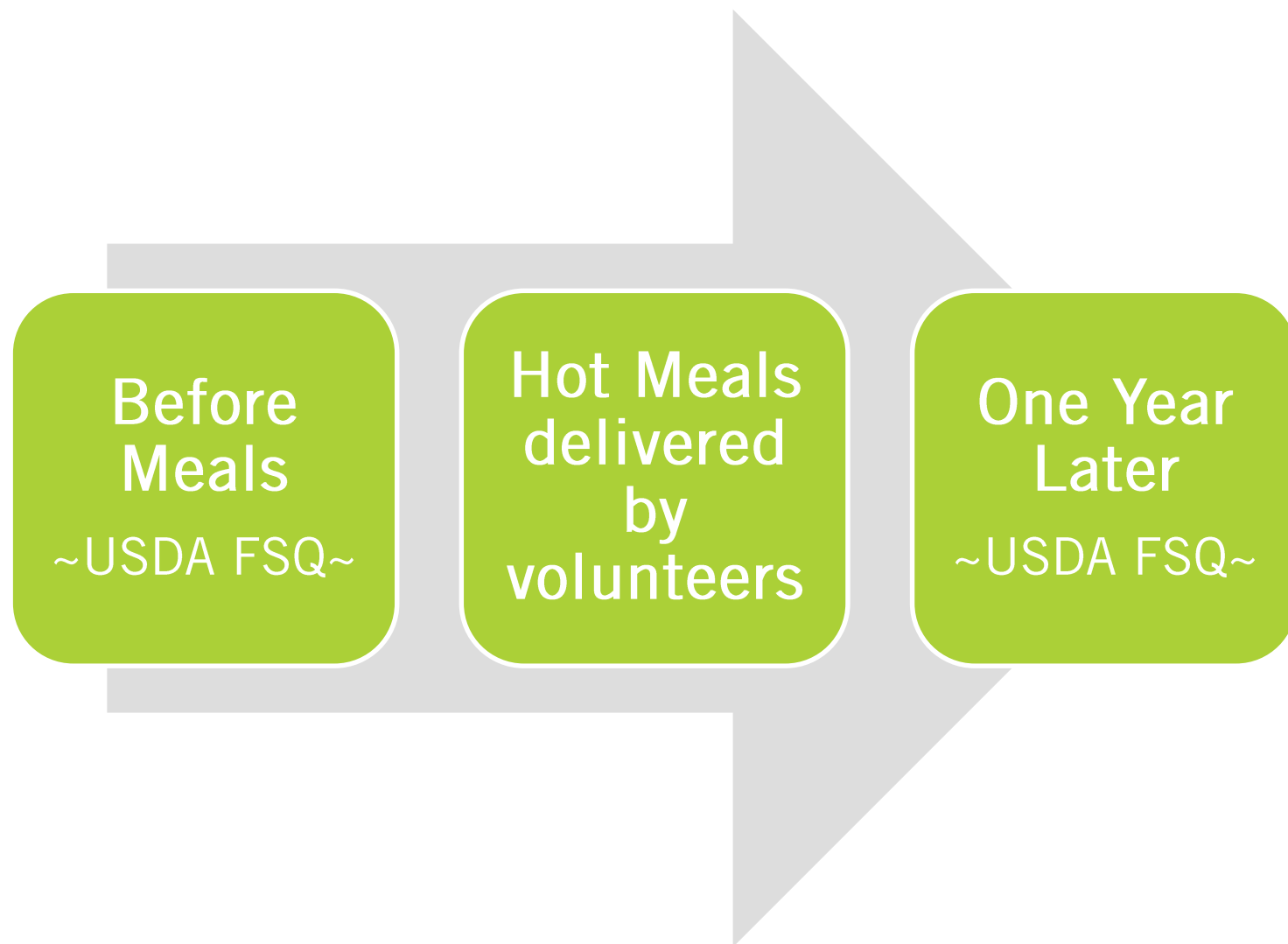
0 = High Food Security

1 = Marginal Food Security

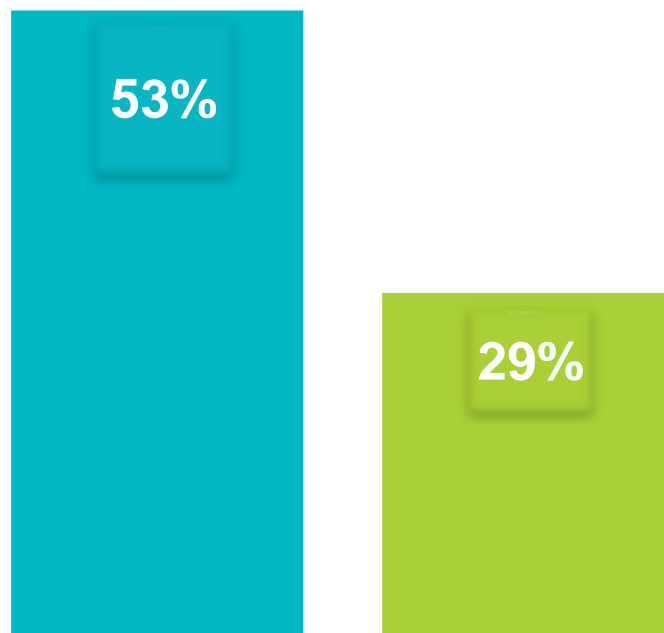
2-4 = Low Food Security

5-6 = Very Low Food Security

- Eligibility for our Breakfast Meal Program
- Prioritize the most food insecure (5-6)



% of Food Insecure Clients Before and After One Year on Meals



A sample of new MOWCTX clients screened for food insecurity at enrollment of meal program during January-June 2018 and one year later at their recertification visit.



What Now?

What about the 1 out of 3 still malnourished?

- ONS pilot/program

What about the 29% still food insecure?

- Leverage for more funding to provide more breakfast meals

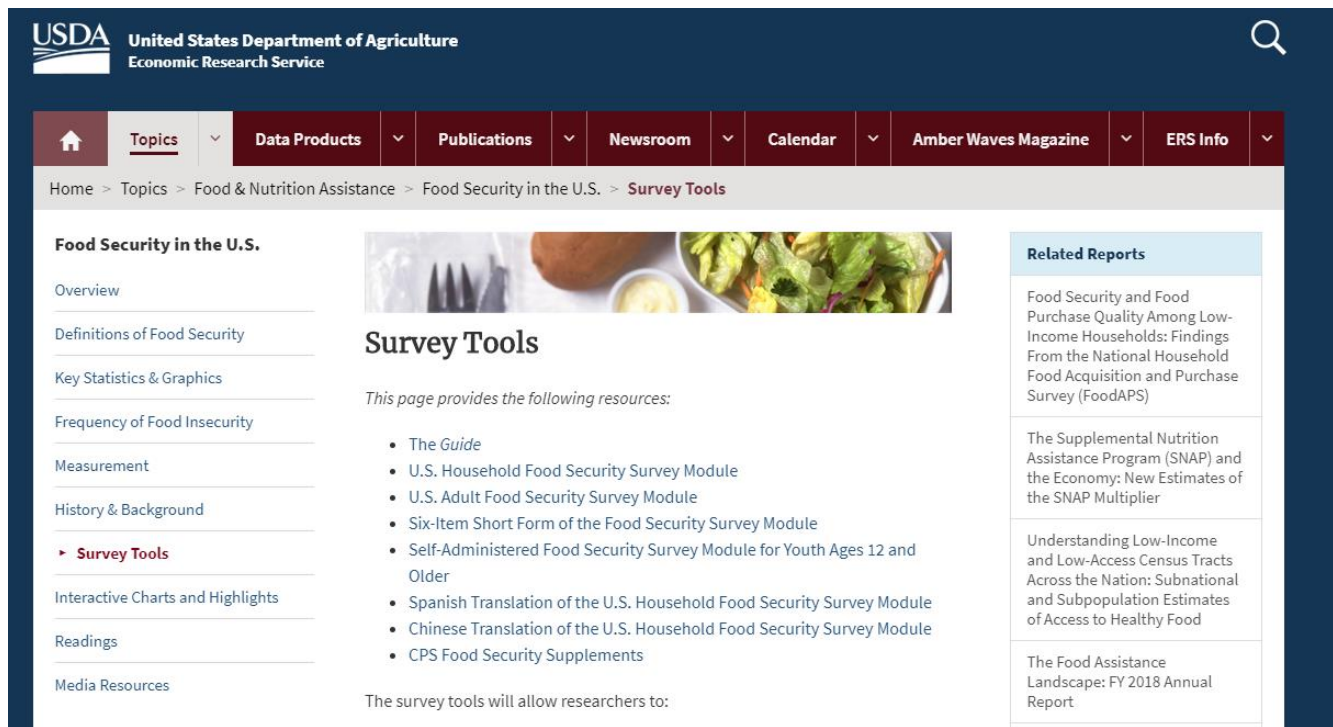
Progress NOT Perfection

<http://www.mna-elderly.com/>

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USDA Food Security Questionnaire

<https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools.aspx>



The screenshot shows the USDA Economic Research Service website. The header includes the USDA logo and the text "United States Department of Agriculture Economic Research Service". A navigation bar contains links for Home, Topics, Data Products, Publications, Newsroom, Calendar, Amber Waves Magazine, and ERS Info. The breadcrumb trail reads: Home > Topics > Food & Nutrition Assistance > Food Security in the U.S. > Survey Tools.

Food Security in the U.S.

- Overview
- Definitions of Food Security
- Key Statistics & Graphics
- Frequency of Food Insecurity
- Measurement
- History & Background
- Survey Tools**
- Interactive Charts and Highlights
- Readings
- Media Resources

Survey Tools

This page provides the following resources:

- The Guide
- U.S. Household Food Security Survey Module
- U.S. Adult Food Security Survey Module
- Six-Item Short Form of the Food Security Survey Module
- Self-Administered Food Security Survey Module for Youth Ages 12 and Older
- Spanish Translation of the U.S. Household Food Security Survey Module
- Chinese Translation of the U.S. Household Food Security Survey Module
- CPS Food Security Supplements

The survey tools will allow researchers to:

Related Reports

- Food Security and Food Purchase Quality Among Low-Income Households: Findings From the National Household Food Acquisition and Purchase Survey (FoodAPS)
- The Supplemental Nutrition Assistance Program (SNAP) and the Economy: New Estimates of the SNAP Multiplier
- Understanding Low-Income and Low-Access Census Tracts Across the Nation: Subnational and Subpopulation Estimates of Access to Healthy Food
- The Food Assistance Landscape: FY 2018 Annual Report



Thank you!