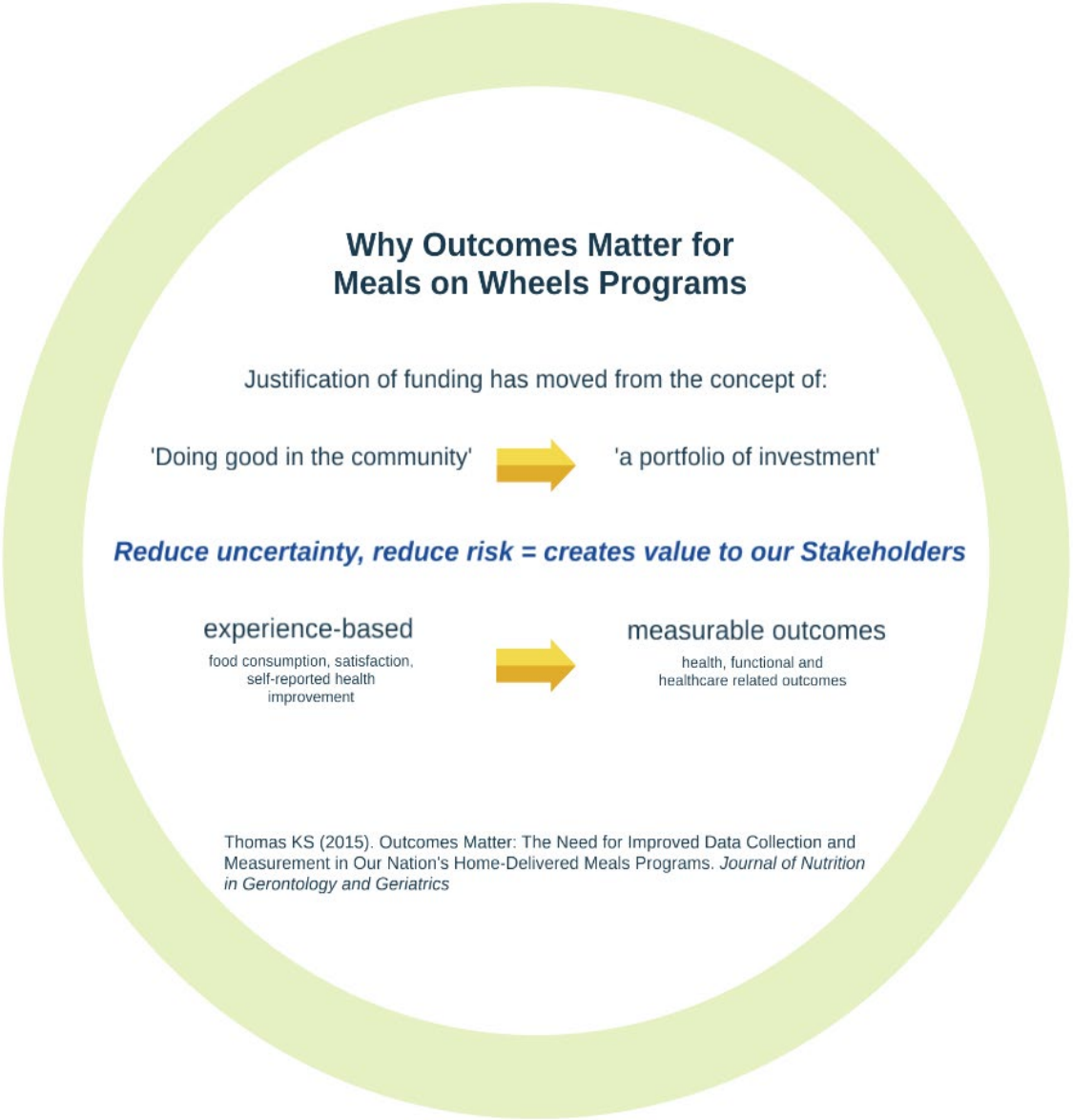
DELIVERING MORE THAN A MEAL

MEALS on WHEELS
CENTRAL TEXAS

MEASURING SUCCESS

Are we making a difference?

WHY OUTCOMES MATTER FOR MEALS ON WHEELS PROGRAMS



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 after 3 months of meals"

MEALS on WHEELS
CENTRAL TEXAS

OK, SO……WHAT DO WE MEASURE??

ROLE OF PROVIDERS IN MEETING OLDER ADULT WELLNESS NEEDS

FOUNDATIONAL PURPOSE

- Reduce hunger, food insecurity and malnutrition of older adults
- Promote socialization of older adults
- Promote health and well-being in older people (nutrition education and nutrition support)

IMPACT OF MEALS

Past **SEVERAL** Decades

- Nutrient intake is lower in homebound population
- On the days HDM participants do NOT receive a meal, their nutrient intake is significantly lower
- Homebound population is at an even higher risk of poor nutrition status than independent older adult counterparts
- HDM Meal contributes markedly to the participants' intake

NOW– PAST DECADE: More work is being done to show whether we impact

- Malnutrition
- Food insecurity
- Healthcare Expenditures
- Chronic disease management

Fayrouz et al 2021, Fleury et al 2021, Ullevig et al 2018, Wright et al 2015, Sahyoun and Vaudin 2014, Zhu and An 2013, Dasgupta et al 2005, Sharkey et al 2003, Sharkey et al 2022, Krondl et al 2003, Lokken et al 2002, Millen et al 2001, MacLellan 1997, Ritchie 1997, Goth et al 1996, Herndon 1996, Payette 1995, Stevens et al 1992, Bunker et al 1986, Lipshitz et al 1985, Davies et al 1981

MEASURING IMPACT ON MALNUTRITION

TRAINING GUIDE

65+ ONLY

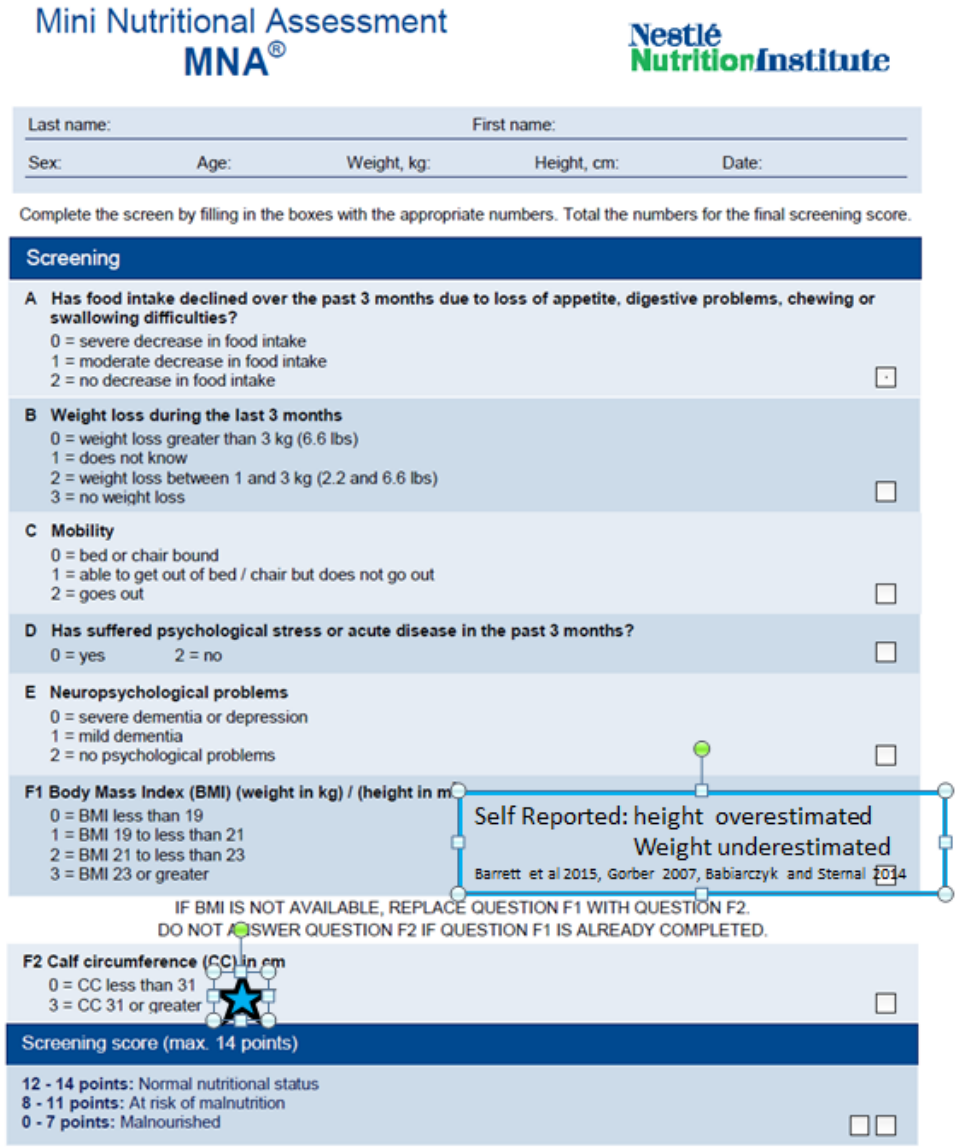
Food intake and weight loss

Frailty/Functionality

Hospitalization

Depression & dementia

Body composition



Mini Nutritional Assessment
MNA®

Nestlé NutritionInstitute

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)

MINI NUTRITIONAL ASSESSMENT (MNA) *CONTINUED*

- 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

Nutrition Screening Initiative (NSI) AKA Nutrition Risk Assessment (NRA)

American Academy of Family Physicians, Academy of Nutrition and Dietetics, and National Council on Aging, Inc.

	YES
I have an illness or condition that made me change the kind and/or amount of food I eat.	2
I eat fewer than two meals a day.	3
I eat few fruits or vegetables, or milk products.	2
I have three or more drinks of beer, liquor or wine almost every day.	2
I have tooth or mouth problems that make it hard for me to eat.	2
I don't always have enough money to buy the food I need.	4
I eat alone most of the time.	1
I take three or more different prescribed or over-the-counter drugs a day.	1
Without wanting to, I have lost or gained ten pounds in the last six month.	2
I am not always physically able to shop, cook and/or feed myself.	2
TOTAL	

Nutritional Health Score

0 – 2	Good
3 – 5	Moderate Nutritional Risk
6 or More	High Nutritional Risk

Refer to the Determine Your Nutritional Health Handout to learn more about the warning signs of poor nutritional health.

Developed as awareness tool; Does not accurately flag malnourishment

(Phillips et al 2010, Charlton et al 2007, Guigoz 1996, Sayhoun et al 1997, Marshal et al 2001, Quigley et al 2008, Sinett et al 2010)

NUTRITION RISK ASSESSMENT

Pros

- Used widely in HDM; HDM comparison
- Identifies ‘risk factors’- educational purposes
- Quickly administered- 10 ‘yes/no’ questions

Cons

- Lacks validation, has low specificity, & overestimates nutrition risk Phillip et al., 2010; Coulston et al., 1996
- Limited effect on ability to detect malnutrition MacLellan & Van Til, 1998
- Designed as an effective awareness/educational tool Sayhoun et al., 1997; Marshal et al., 2001
- Uses beyond education?

MNA

Pros

- **Full MNA** validated & considered Gold Standard (MDs assessments, blood work, measurements) Guigoz, Vellas, & Garry, 1994; Guigoz et al., 1996, Sieber, 2006
- Extensively tested for validity, sensitivity, specificity, reliability Green & Watson, 2006
- **MNA-SF** validated & has high specificity, sensitivity, diagnostic accuracy Rubenstein et al., 2001, Kaiser et al., 2009, Wikby et al., 2008; Cuervo et al., 2008, Isenring et al., 2012
- **MNA-SF** most appropriate for elderly community setting (when compared with other tools) Phillips et al 2010

Cons

- Requires Training
- Calf measurement

RESEARCH PROJECT 2010– THESIS WORK
MEALS ON WHEELS CENTRAL TEXAS, AUSTIN, TX

WHAT DID THE TOOLS SHOW?

BEFORE MEALS		AFTER MEALS
NSI: 'HIGH RISK'		NSI: 'HIGH RISK'
31 (77.5%)		28 (70%)
MNA-SF: 'MALNOURISHED'		MNA-SF: 'MALNOURISHED'
13 (32.5%)		3 (7.5%)

MNA-SF more sensitive to nutrition status change

More people moved out of 'malnourished' category versus ' high risk' category

WHAT DID THE TOOLS SHOW? *CONTINUED*

BEFORE MEALS		AFTER MEALS
NSI: 'GOOD'	→	NSI: 'GOOD'
0		2 (5%)

MNA-SF: 'NORMAL STATUS'	→	MNA-SF: 'NORMAL STATUS'
8 (20%)		19 (47.5%)

MNA-SF more sensitive to nutrition status change

More moved into 'normal' category versus 'good' category

SO, LET'S GET STARTED! → BRIDGING THE GAP!!

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 FEASIBILITY PILOT

- Timed both screening tools
- Asked client's permission to do measurement
- 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: 3.65 minutes
- Average Time Spent NRA: 3.5 minutes

MNA AT MOWCTX

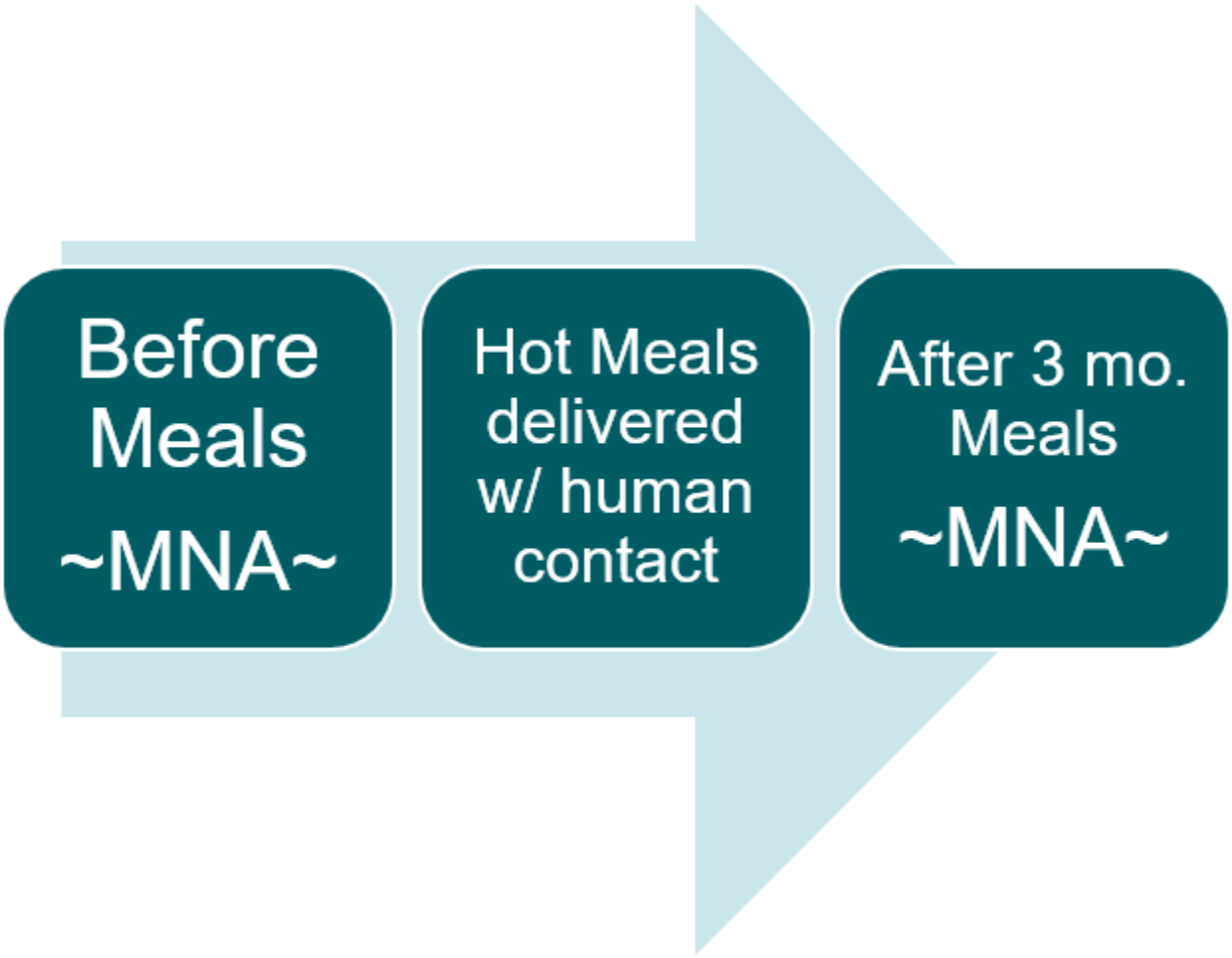
PROS

- More specific
- Takes same time
- Is now used to:
  - Program Evaluation
  - Prioritize enrollment for second meals program

CONS

- Only used on 60+
- If don’t have calf circumference- can’t score tool
- Does not replace other tools- is an additional tool to use

MNA (PROCESS)


Before Meals
~MNA~
Hot Meals delivered w/ human contact
After 3 mo. Meals
~MNA~

FY 2019

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

BOTTOM LINE

- MNA strongly supported by research in identifying malnourished
- MNA was a more sensitive indicator of change in nutrition status in our research
- MNA can assist in prioritizing those most in need
- Metric now widely desired by Development and Funders

MEALS ON WHEELS PROGRAM SHOWN TO SIGNIFICANTLY IMPROVE NUTRITION STATUS

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

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

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1. Department of Kinesiology, Health, and Nutrition, University of Texas at San Antonio, San Antonio, TX, USA; 2. School of Family and Consumer Sciences, Texas State University, San Marcos, TX, USA. Corresponding author: Sarah L. Ullevig, Department of Kinesiology, Health, and Nutrition, University of Texas at San Antonio, San Antonio, TX, USA, sarah.ullevig@utsa.edu

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.

MEASURING SUCCESS
IMPACT ON FOOD INSECURITY

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
- Ever hungry because there wasn't enough money for food

USDA FOOD SECURITY SURVEY

SCORING GUIDE

0 = High Food Security

1 = Marginal Food Security

2-4 = Low Food Security

5-6 = Very Low Food Security

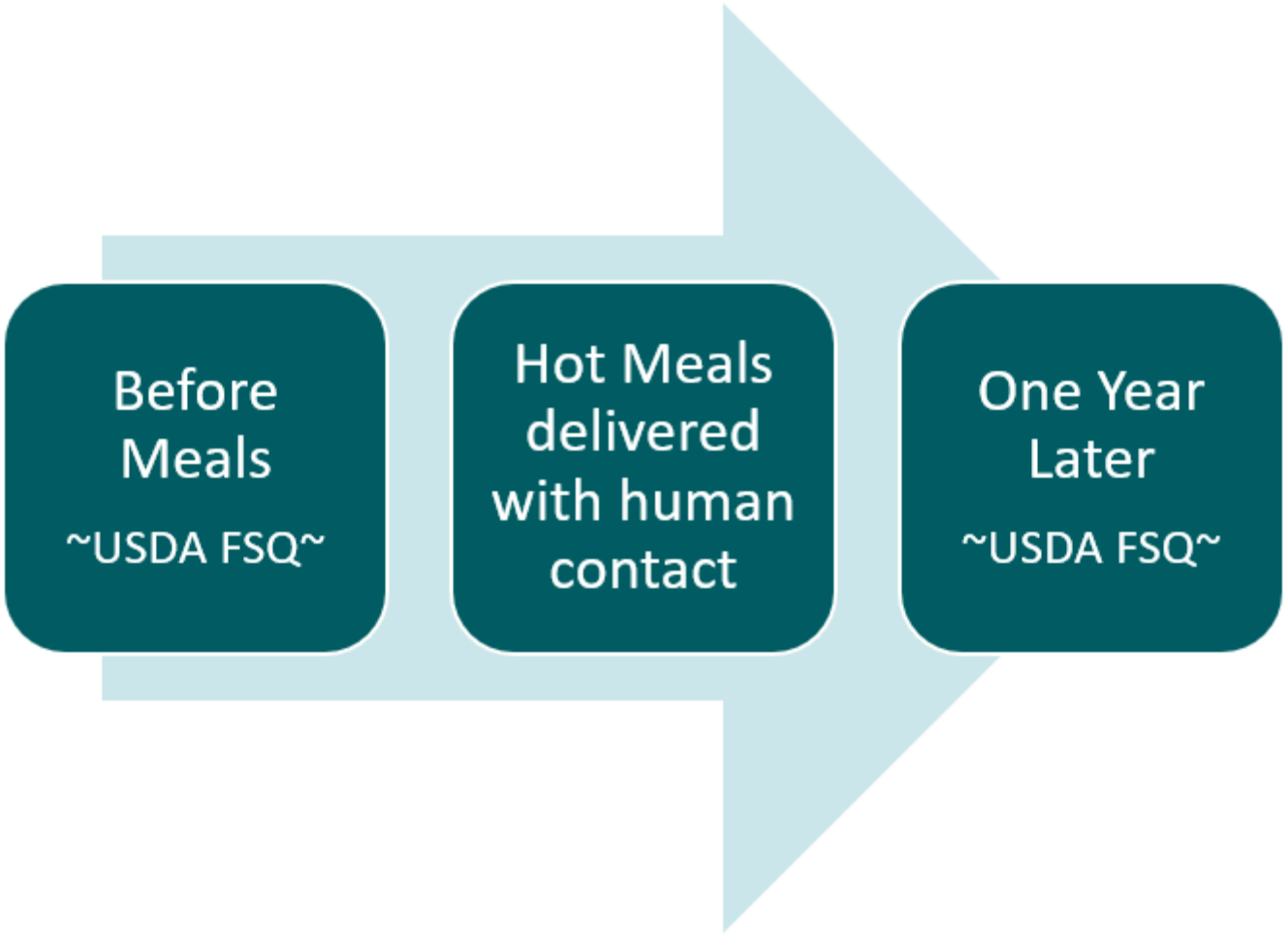
USES

<u>Prioritize Limited Resources:</u>

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

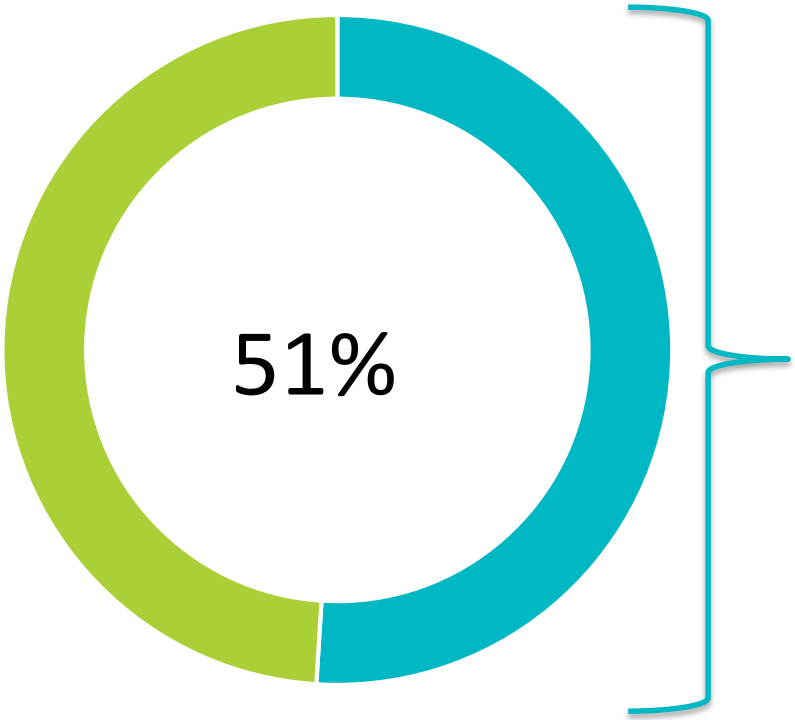
<u>Funding cuts</u>

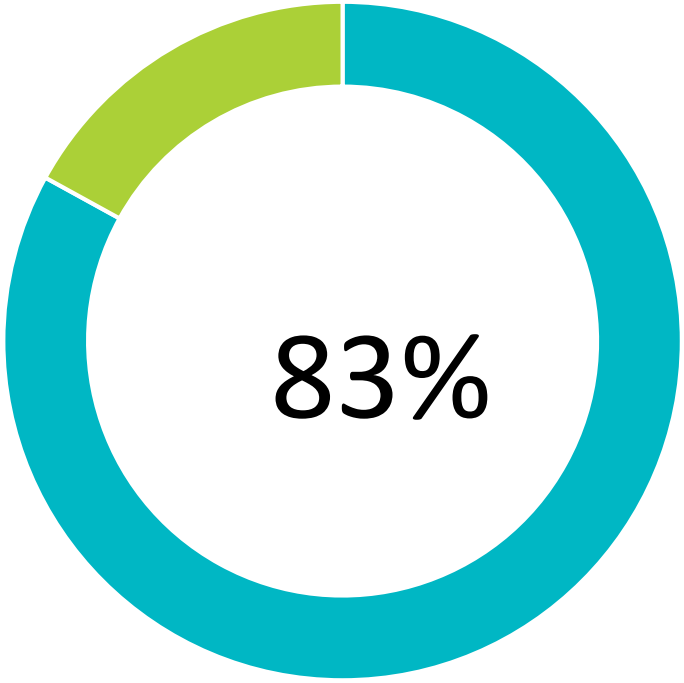
USDA FAQ


Before Meals
~USDA FSQ~
Hot Meals delivered with human contact
One Year Later
~USDA FSQ~

IMPROVEMENT IN FOOD INSECURITY (MOW PROGRAM)

New Enrollees identified as Food Insecure
FY 20





% improvement after 1 Year
FY 21

MEALS on WHEELS
CENTRAL TEXAS

ADDITIONAL OPTIONS AND CONSIDERATIONS

HUNGER VITAL SIGN SURVEY

Hunger Vital Sign™ Survey

Name: _____ Today's Date: _____

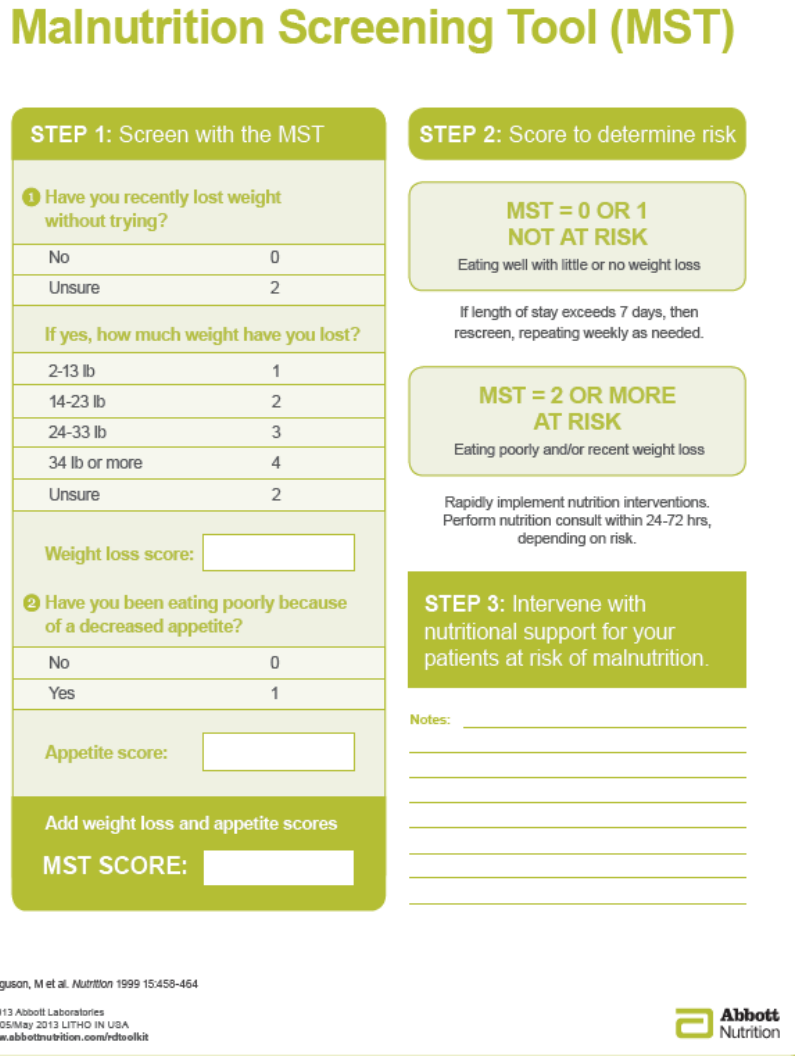
Please answer these 2 questions by checking the box ☑ next to your answer.

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

Hunger Vital Sign™ by Hager, E. R., Quigg, A. M., Black, M. M., Coleman, S. M., Heeren, T., Rose-Jacobs, R., Cook, J. T., Ettinger de Cuba, S. E., Casey, P. H., Chilton, M., Cutts, D. B., Meyers A. F., Frank, D. A. (2010). Development and Validity of a 2-Item Screen to Identify Families at Risk for Food Insecurity. Pediatrics, 126(1), 26-32. doi:10.1542/peds.2009-3146.

MALNUTRITION SCREENING TOOL (MST)



Malnutrition Screening Tool (MST)

STEP 1: Screen with the MST

1. Have you recently lost weight without trying?

No	0
Unsure	2

If yes, how much weight have you lost?

2-13 lb	1
14-23 lb	2
24-33 lb	3
34 lb or more	4
Unsure	2

Weight loss score: ____

2. Have you been eating poorly because of a decreased appetite?

No	0
Yes	1

Appetite score: ____

Add weight loss and appetite scores

MST SCORE: ____

STEP 2: Score to determine risk

MST = 0 OR 1
NOT AT RISK
Eating well with little or no weight loss

If length of stay exceeds 7 days, then rescreen, repeating weekly as needed.

MST = 2 OR MORE
AT RISK
Eating poorly and/or recent weight loss

Rapidly implement nutrition interventions. Perform nutrition consult within 24-72 hrs, depending on risk.

STEP 3: Intervene with nutritional support for your patients at risk of malnutrition.

Notes: _____

Ferguson, M et al. *Nutrition* 1999 15:458-464

Abbott Nutrition

NEW FOOD SECURITY SCREENING…..JUST FOR OLDER ADULTS!

THE GERONTOLOGICAL SOCIETY OF AMERICA®

Journals of Gerontology: Social Sciences
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doi:10.1093/geronb/gbaa147
Advance Access publication October 1, 2020

OXFORD

Research Article

Conceptualizing Food Insecurity Among Older Adults: Development of a Summary Indicator in the National Health and Aging Trends Study

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https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8599055/

USDA FOOD SECURITY SURVEY CULTURALLY RELEVANT TO ALL GROUPS?

- Not necessarily….
- “And, in turn, may result in misunderstandings of the survey questions and data that do not quantify the full extent of food insecurity”.
- “For example, respondents from Latinx households report that ‘running out of food’ is not an issue because there is ‘always something to make to eat’.”
- “This disconnect can lead to underestimating the extent of severity of food insecurity.”

https://news.txst.edu/research-and-innovation/2021/usda-grant-seeks-to-improve-measurement-of-food-insecurity.html

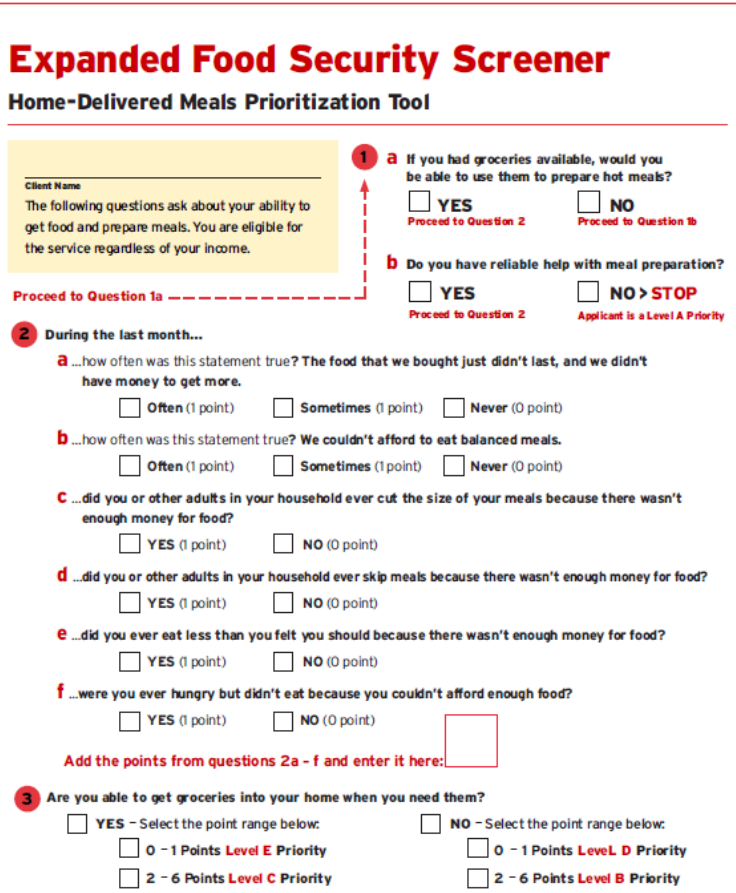
https://nfsc.umd.edu/extension/expanded-food-security-screener

EXPANDED FOOD SECURITY SCREENER

Expanded Food Security Screener

Home-Delivered Meals Prioritization Tool

Developed by the College of Agriculture & Natural Resources Department of Nutrition and Food Science at the **University of Maryland.**



Expanded Food Security Screener

Home-Delivered Meals Prioritization Tool

Client Name

The following questions ask about your ability to get food and prepare meals. You are eligible for the service regardless of your income.

1 a If you had groceries available, would you be able to use them to prepare hot meals?

☐ YES — Proceed to Question 2 ☐ NO — Proceed to Question 1b

b Do you have reliable help with meal preparation?

☐ YES — Proceed to Question 2 ☐ NO > STOP — Applicant is a Level A Priority

Proceed to Question 1a

2 During the last month...

a ...how often was this statement true? **The food that we bought just didn't last, and we didn't have money to get more.**

☐ Often (1 point) ☐ Sometimes (1 point) ☐ Never (0 point)

b ...how often was this statement true? **We couldn't afford to eat balanced meals.**

☐ Often (1 point) ☐ Sometimes (1 point) ☐ Never (0 point)

c ...did you or other adults in your household ever cut the size of your meals because there wasn't enough money for food?

☐ YES (1 point) ☐ NO (0 point)

d ...did you or other adults in your household ever skip meals because there wasn't enough money for food?

☐ YES (1 point) ☐ NO (0 point)

e ...did you ever eat less than you felt you should because there wasn't enough money for food?

☐ YES (1 point) ☐ NO (0 point)

f ...were you ever hungry but didn't eat because you couldn't afford enough food?

☐ YES (1 point) ☐ NO (0 point)

Add the points from questions 2a - f and enter it here: ☐

3 Are you able to get groceries into your home when you need them?

☐ YES – Select the point range below:
- ☐ 0 – 1 Points Level E Priority
- ☐ 2 – 6 Points Level C Priority

☐ NO – Select the point range below:
- ☐ 0 – 1 Points Level D Priority
- ☐ 2 – 6 Points Level B Priority

Priority Levels and Recommended Nutrition Service(s)

LEVEL	CRITERIA	PRIORITY LEVEL REASONING	SERVICE
A	Unable to cook and no reliable help	Even if food is affordable and in the home, it cannot be prepared, therefore, it is unlikely there are consistent healthy meals.	Home-Delivered Meals **PRIORITIZED on wait list if resources are limited.**
B	Can cook or has help. Economically food insecure. Cannot obtain groceries.	Affordability and access to groceries are both issues. With financial support and grocery delivery, healthy meals could be prepared at home.	Home-Delivered Meals **ALL clients should receive home-delivered meals if resources are available.** If there is a wait list for home-delivered meals clients should be prioritized B - E. Regardless of wait list status, all clients may benefit from additional nutrition services: USDA Supplemental Nutrition Assistance Program (SNAP) Grocery Delivery Services Additional State or Local Services as Needed
C	Can cook or has help. Economically food insecure. Can obtain groceries.	Affordability is the only issue, can obtain groceries and prepare healthy meals at home.	
D	Can cook or has help. Economically food secure. Cannot obtain groceries.	Groceries and food delivery are affordable, not physically limited from food preparation (or help is available) therefore healthy meals can be prepared at home.	
E	Can cook or has help. Economically food secure. Can obtain groceries.	These individuals fulfill the basic eligibility requirements for the home delivered meal program; however, they are able to afford and obtain groceries, and are not physically limited from food preparation (or help is available), therefore healthy meals can be prepared at home.	

MEALS on WHEELS
CENTRAL TEXAS

QUICK TIP

Descriptive Statistic of YOUR Population

DEFINING 'ECONOMIC INSECURITY' IN YOUR POPULATION

- % 'low income'?
- % 'living in poverty'?

Recommend using: https://elderindex.org/

The Gerontology Institute at the University of Massachusetts Boston developed The Elder Index– estimates the minimum amount seniors need to meet monthly expenses, based on county, household size, housing and health status.

ELDER INDEX

Elder Index | Measuring the income older adults need to live independently

The site contains new state, county and metropolitan area data for the 2022 Elder Index, last updated on February 14, 2023.

STEP ONE

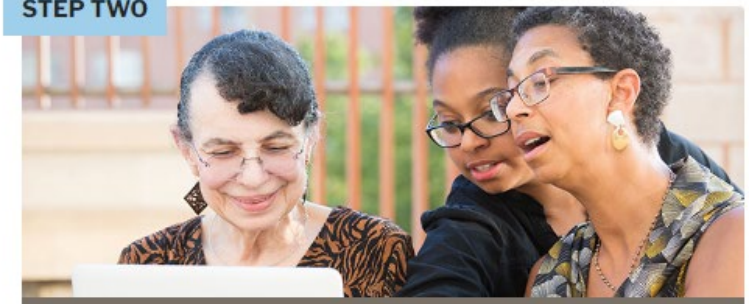
Choose Your Location(s)

County, State, and/or Metropolitan Area*

Choose some options

Select up to four counties and states using the drop-down menu or by typing in the name. For more than four locations, please contact us.

STEP TWO



Choose Your Filters

Household*
- ○ Single
- ○ Couple

Housing Status*
- ☐ Renter
- ☐ Homeowner, mortgage
- ☐ Homeowner, no mortgage

Health Status*
- ○ Poor health
- ○ Good health
- ○ Excellent health

Apply

> *The Elder Index allows researchers to tailor the adequacy measure to the elderly while still providing a relatively simple way to evaluate retirement security.*
>
> —Congressional Budget Office (2017). Measuring the adequacy of retirement income: A primer.

KEY ACTION ITEM

Explore the use of a tool to measure food insecurity or nutrition status (is a nutrition provider of some kind).

- Operational workflow on onboarding
- What can be done via phone, where in the process
- Discuss with your leadership
- Conduct a feasibility pilot– learn, gain buy in
- Don’t be afraid to fail…Fail Forward…real example SCREEN II

CONTACT INFO

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DELIVERING MORE THAN A MEAL