Following Up on Food Insecurity

CASCHEW Conference

March 2nd, 2024

"

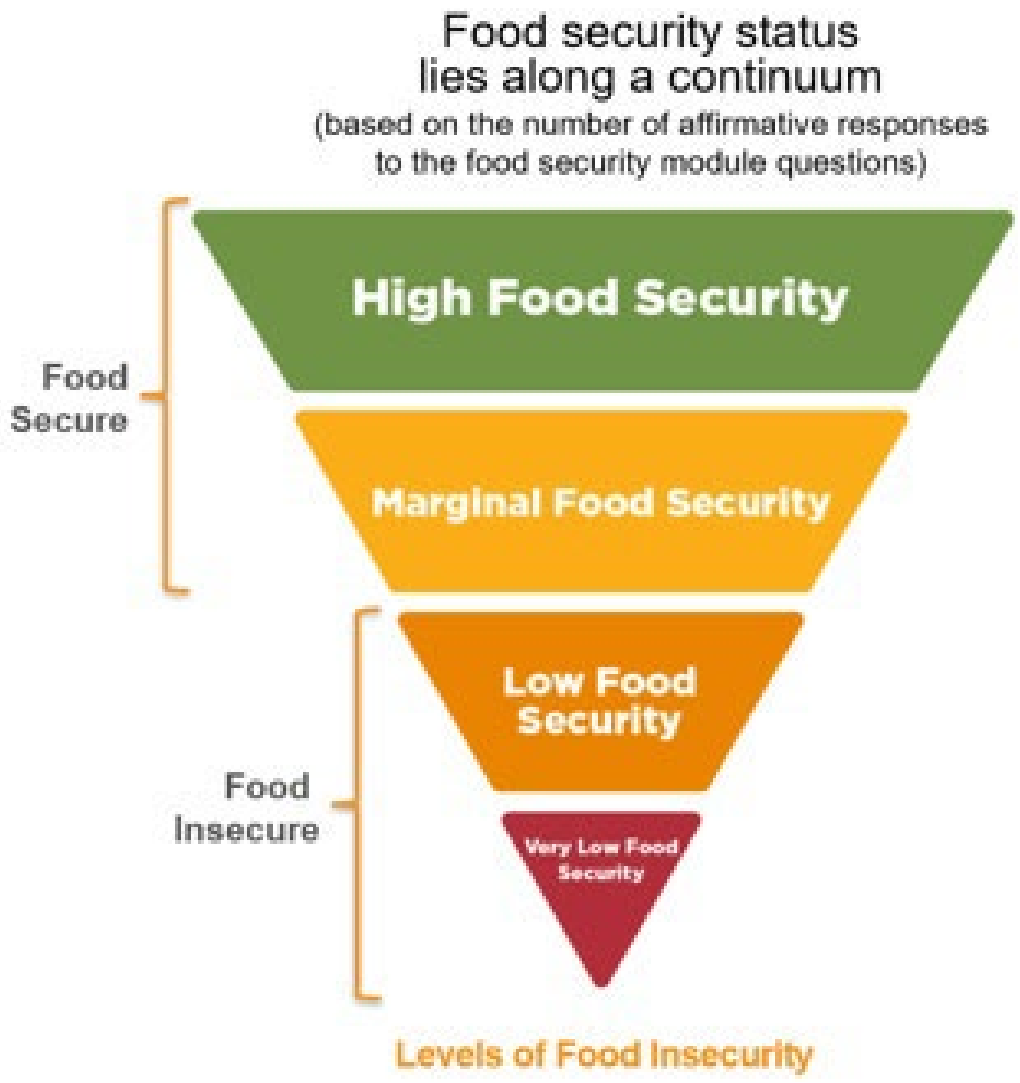
"

LET US MARCH ON POVERTY UNTIL NO AMERICAN PARENT HAS TO SKIP A MEAL SO THAT THEIR CHILDREN MAY EAT.

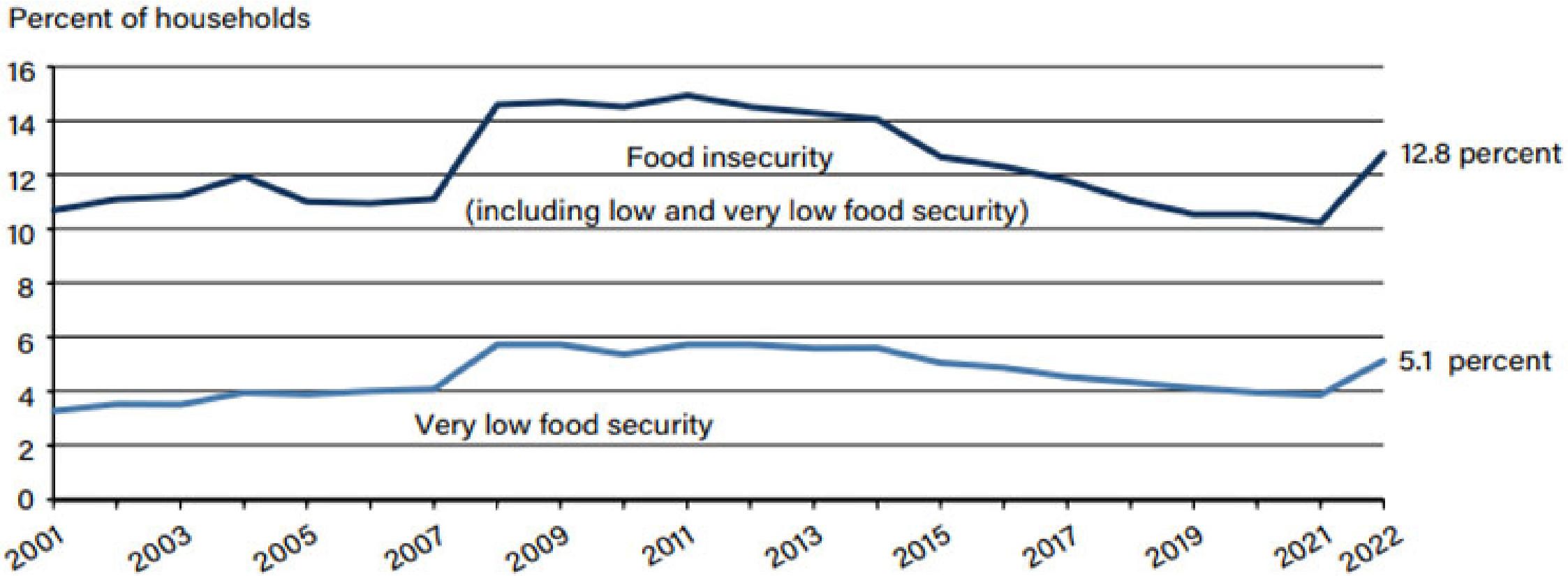
– MARTIN LUTHER KING JR.

Definitions

- Hunger: the individual-level physiological condition (uneasy or painful sensation) that may be the result of food insecurity
- Food security: occurs for a household when “all members, at all times, can access enough food for an active, healthy life.”
- Food insecurity: the limited or uncertain availability of nutritionally adequate and safe foods, or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.
- Nutrition security: defined as “all Americans have consistent and equitable access to healthy, safe, affordable foods **essential to optimal health and well-being**.” (Per USDA)


Food security status
lies along a continuum
(based on the number of affirmative responses
to the food security module questions)
High Food Security
Marginal Food Security
Low Food
Security
Very Low Food
Security
Food
Secure
Food
Insecure
Levels of Food Insecurity

Prevalence of food insecurity in 2022 increased from 2021



Source: USDA, Economic Reserach Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplement.

www.ers.usda.gov

33%

of Coloradans lack reliable access to nutritious food

Hunger Free Colorado, COVID Food Insecurity Survey, April 2021

16%

of Colorado children are not getting adequate nutrition due to financial constraints

Colorado Children's Campaign, KIDS COUNT in Colorado!, Aug 2022

20%

of adults reported having to regularly cut back or skip meals because there wasn't enough money to buy food

Hunger Free Colorado, COVID Food Insecurity Survey, April 2021

7.5%

of older adults face hunger in Colorado, forcing them to make choices between purchasing groceries or medication

James Ziliak and Craig Gunderson, The State of Senior Hunger in America 2020: An Annual Report, May 2022

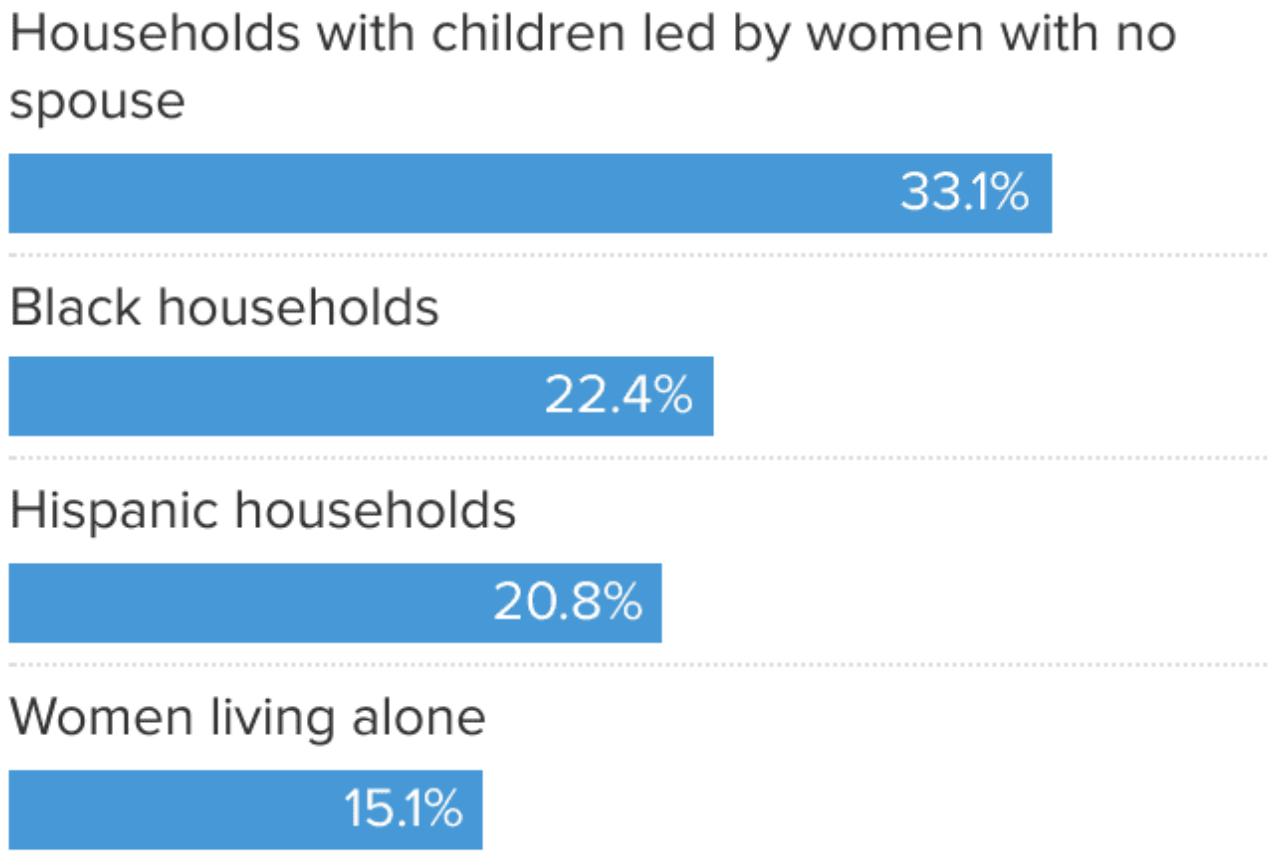
9.7%

of Coloradans struggle financially, living below the federal poverty line

U.S. Census Bureau, 2021 American Community Survey: Poverty, September 2022

https://hungerfreecolorado.org/facts/

Groups with high rates of food insecurity in the U.S. in 2022



Source: U.S. Department of Agriculture Economic Research Service
Data as of October 2023

CNBC

"

"

I HAVE THE AUDACITY TO BELIEVE THAT PEOPLES EVERYWHERE CAN HAVE THREE MEALS A DAY FOR THEIR BODIES, EDUCATION AND CULTURE FOR THEIR MINDS, AND DIGNITY, EQUALITY AND FREEDOM FOR THEIR SPIRITS.

– MARTIN LUTHER KING JR.

Why consider nutrition security?

- 600,000 Americans die each year from diet-related illnesses
- Rates of obesity and diabetes continue to rise
- Associated with decreased quality of and length of life, and costly from a personal and healthcare system perspective
- Not a complete overlap with food insecurity
- Currently no great quick screening tool available

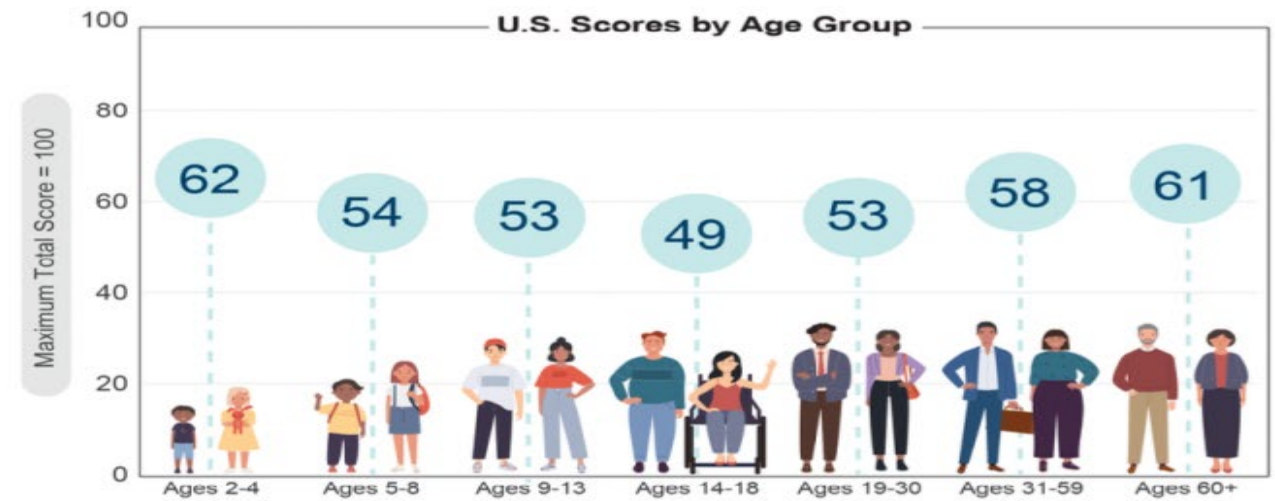
USDA

U.S. DEPARTMENT OF AGRICULTURE

How Healthy Is the American Diet?

The Healthy Eating Index Score

shows that Americans do not align their eating choices with the Dietary Guidelines (on a scale from 0-100)

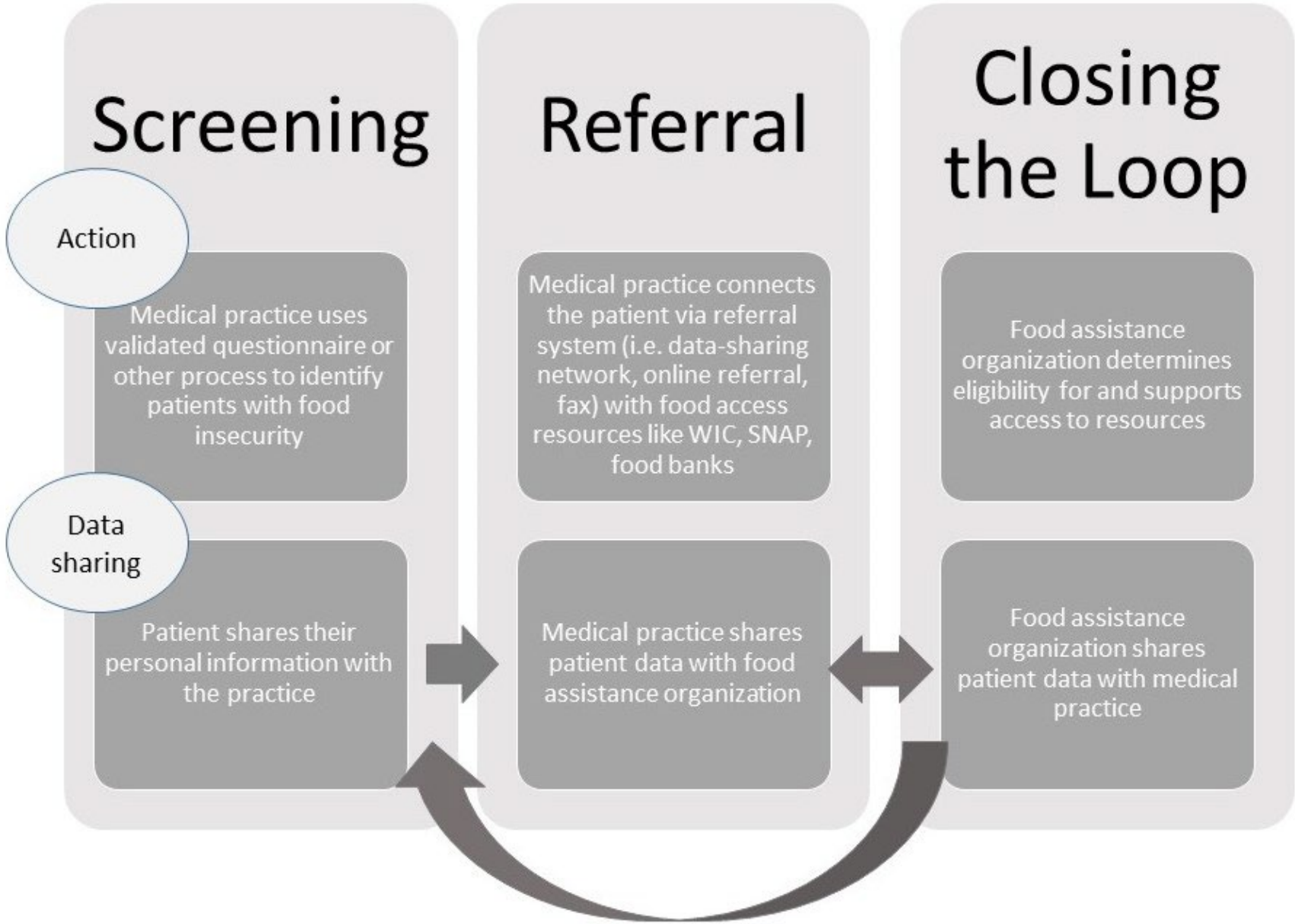


Data source for Healthy Eating Index scores: What We Eat in America, National Health and Nutrition Examination Survey (undated data are from 2017-2018).

October 2021

Previous work in Western Colorado

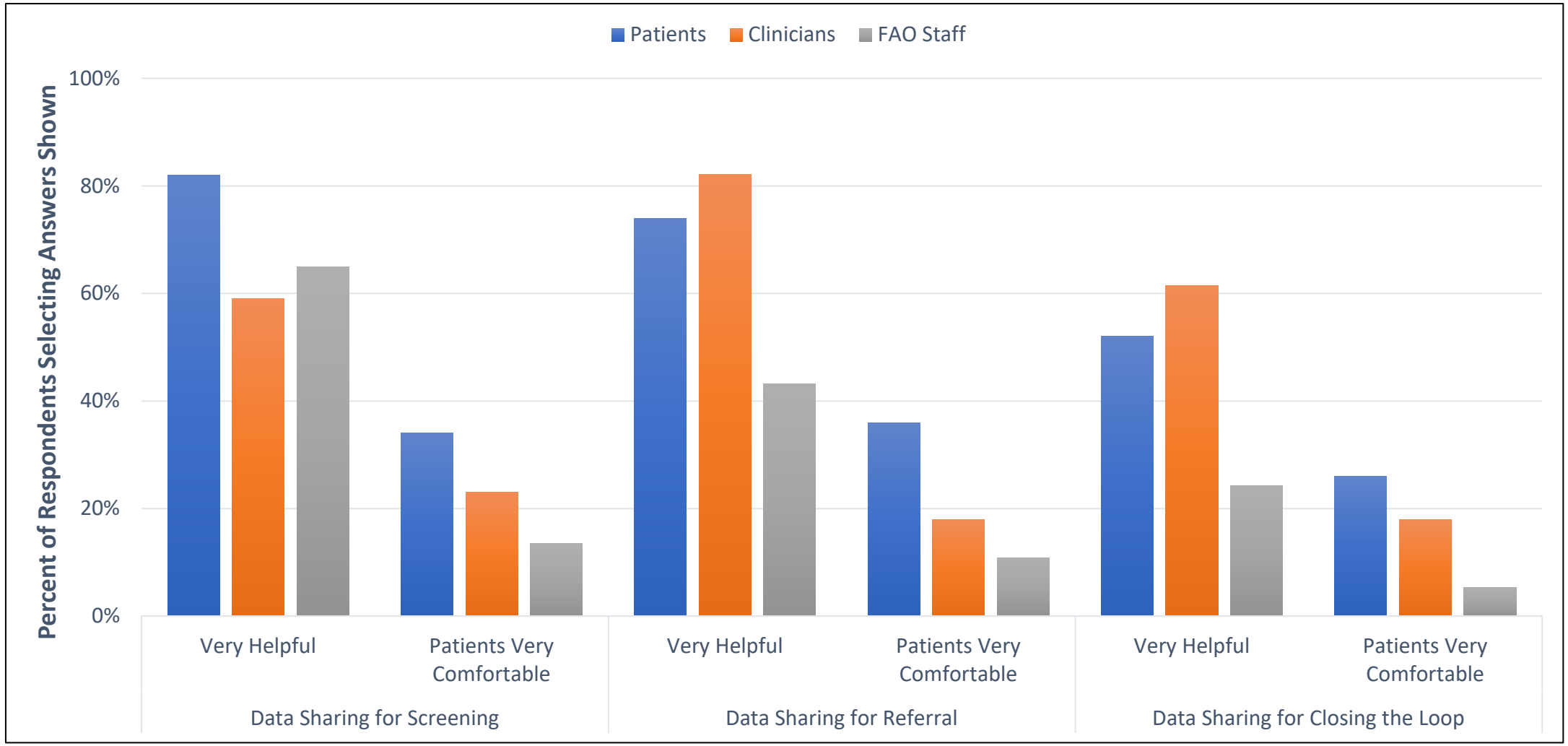
- Started with project in 2019 looking at attitudes around data sharing on food insecurity and clinical staff knowledge
- Pilot with a video teaching module for primary care and educators
- Then funded by SIREN to do work around best way to explain the purpose behind screening and referral to encourage more people to accept referral to resources
- Conducted a survey among healthcare staff in practices/organizations participating in the AHCM to understand what they knew about food insecurity and attitudes toward it
- Found high level of past or present food insecurity in primary care staff


Screening
Referral
Closing the Loop
Action
Medical practice uses validated questionnaire or other process to identify patients with food insecurity
Medical practice connects the patient via referral system (i.e. data-sharing network, online referral, fax) with food access resources like WIC, SNAP, food banks
Food assistance organization determines eligibility for and supports access to resources
Data sharing
Patient shares their personal information with the practice
Medical practice shares patient data with food assistance organization
Food assistance organization shares patient data with medical practice

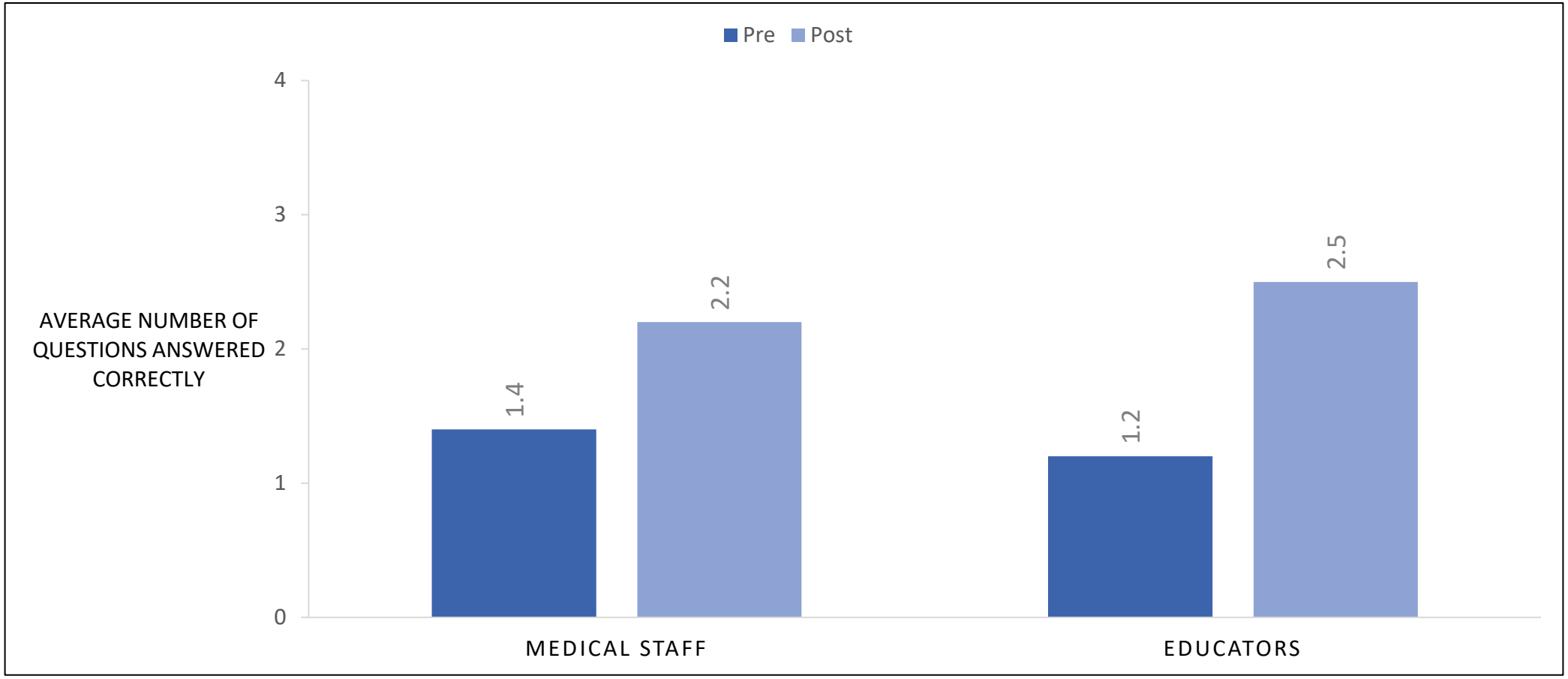
COLAB: Phase 1 Results: Barriers to implementing Screening & Referral for FI

- Practice Level: buy-in and funding
- Community Level: Capacity and siloing
- Patient Level: multiple needs and chaos
- Data sharing and collaboration perspectives

Phase 1 Survey Results: Perceived Helpfulness of and Patient Comfort with Data Sharing

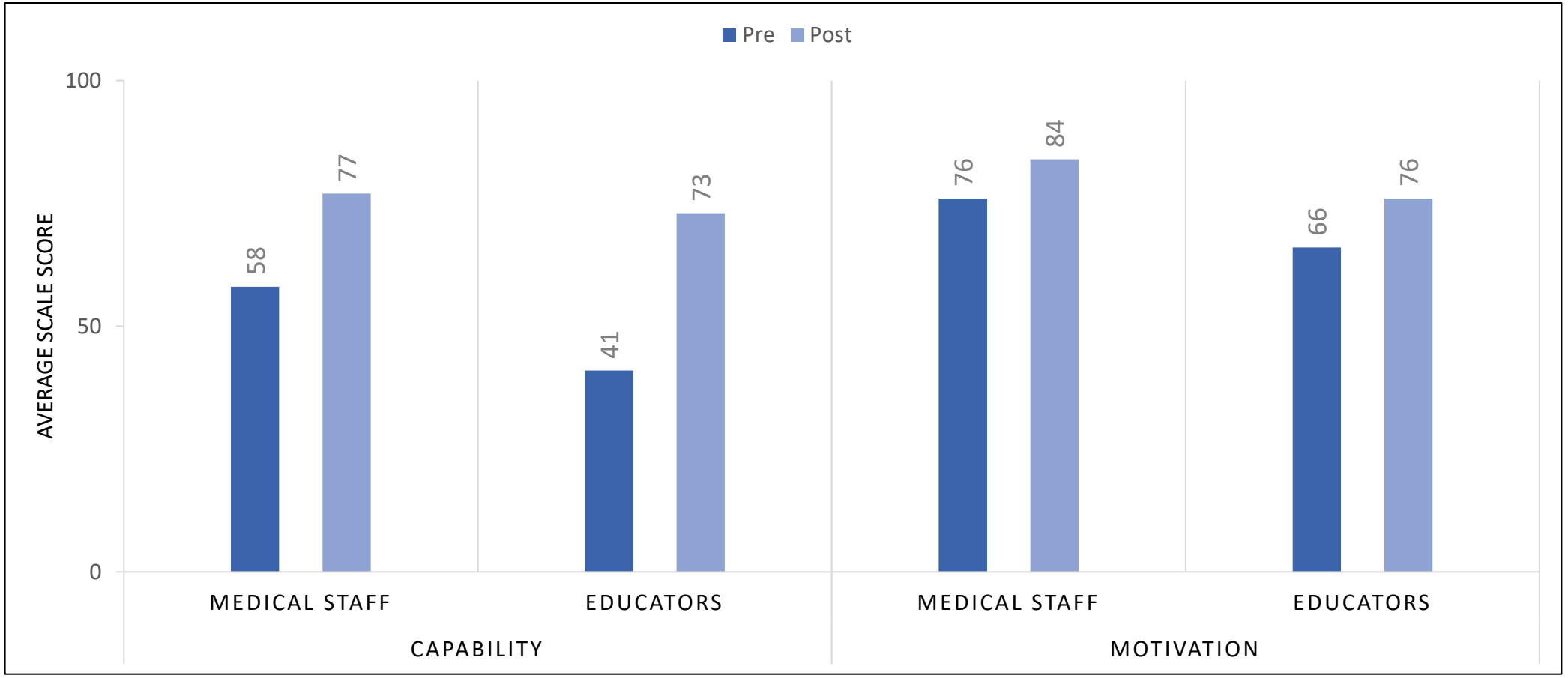


COLAB: Phase 2 Results: Increased Knowledge



- Both significant increases ($p < 0.01$)

Phase 2 Results: Increased Capability & Motivation



- All significant increases ($p < 0.01$)

SIREN Project: Phase 1

Importance of taking a patient- and person-centered approach to social needs screening

Value of incorporating specific messages into communications with patients

Key role that care managers play– need for more resources and support

Potential for practice-wide training related to the facilitators that we identified to support implementation of social needs screening and referral

Patient-Friendly Cover-Sheet

Many patients struggle with basic needs like access to housing and food. We are asking all our patients the following questions about their basic needs. Your answers help us understand what local resources might be helpful.

Please answer as many of these questions as you feel comfortable.

It's For Your Health

- We care about your health and well-being.
- When your basic needs are met, it helps you and your family stay healthy.

It May Help Your Community

- Your answers help us better meet the basic needs of the whole community.

Connect to Resources

- We use your answers about basic needs to suggest local resources.
- For example, programs that provide help with food, housing, or paying utility bills.

It's Private

- Privacy is our priority.
- We keep your answers private just like your other medical information.

We are always here to support you and suggest resources to help you stay healthier. Feel free to reach out to our staff if you have any needs or questions.

Muchos pacientes batallan con las necesidades básicas como el acceso a la vivienda y los alimentos. Estamos preguntando a todos nuestros pacientes las siguientes preguntas sobre sus necesidades básicas. Sus respuestas nos ayudarán a entender que recursos locales podrían ser útiles.

Por favor responda a las siguientes preguntas cómo se sienta cómodo.

Es Para Su Salud

- Nos importa su salud y bienestar.
- Cuando las necesidades básicas están satisfechas, le ayuda a usted y a su familia a mantenerse saludable.

Podría Ayudar a Su Comunidad

- Sus respuestas nos ayudarán a satisfacer mejor las necesidades de toda la comunidad.

Conectarse a Los Recursos

- Usamos sus respuestas sobre las necesidades básicas para sugerir los recursos locales.
- Por ejemplo, programas que proveen ayuda con los alimentos, las viviendas, o el pago de recibos de servicios públicos.

Es Privado

- Su privacidad es nuestra prioridad.
- Sus respuestas son privadas como su otra información médica.

Siempre estamos aquí para apoyar y sugerir recursos que puedan ayudarle con la salud. Comuníquese con nuestro personal si tiene alguna necesidad o pregunta.

Trial Stages

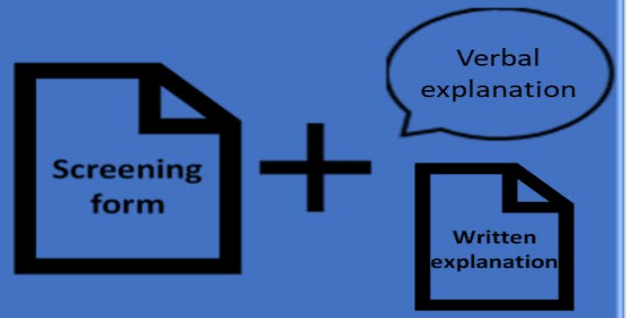
Stage 1 (S1): Usual Clinic Screening Process

Form given out at front desk during check-in with no specific explanation

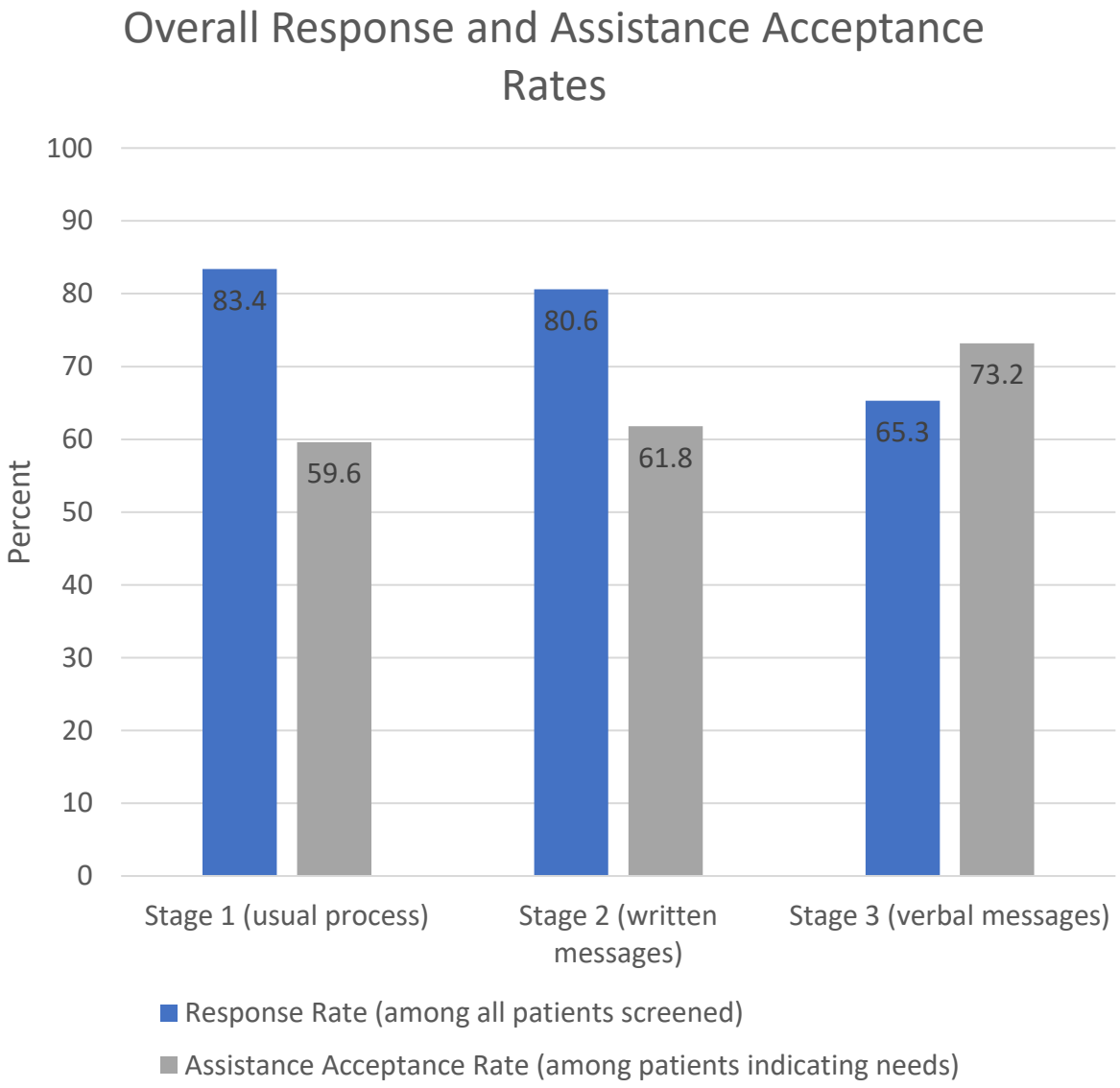
Stage 2 (S2): Addition of Written Messages

Patient-friendly cover sheet added to top of screening form; still given out at front desk during check in

Stage 3 (S3): Addition of Verbal Messages

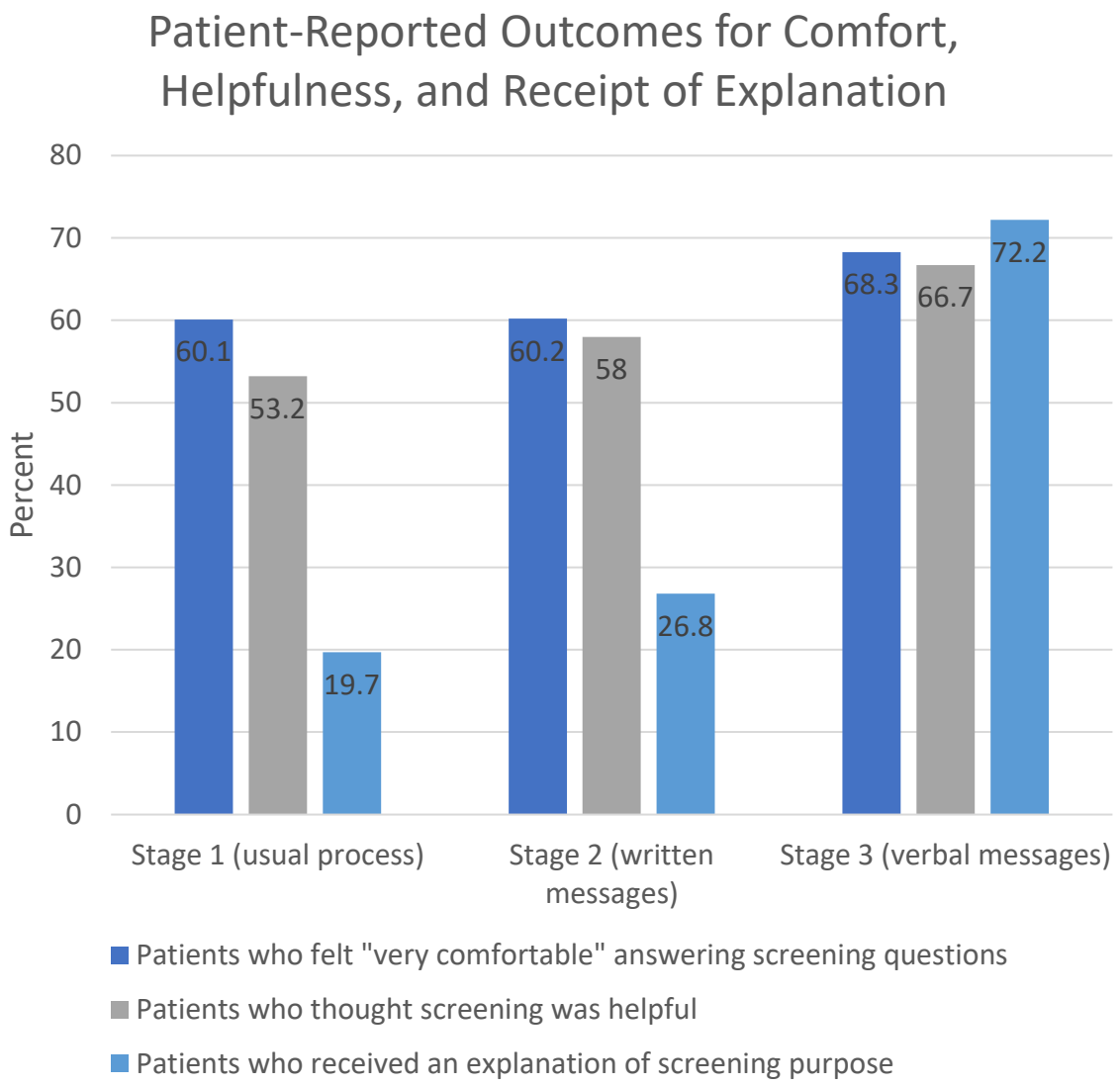


Form (with cover sheet) given out by MA who gives a brief verbal explanation while rooming the patient



Primary Outcomes

- No significant differences for stage 2 vs. stage 1
- For stage 3 vs. stage 1, adjusted regression results indicated:
  - A significant decrease in response rate within two clinics (OR 0.1 [CI: 0.1-0.3]; OR 0.4 [CI: 0.2-0.7]), but not the third clinic (OR 1.2 [CI: 0.6-0.3])
  - A significant increase in assistance acceptance rate (no clinic-specific differences) (OR 2.1 [CI: 1.1-4.0])



Secondary Outcomes

- No significant differences for stage 2 vs. stage 1
- For stage 3 vs. stage 1, adjusted regression results indicated:
  - A non-significant increase in comfort (OR 1.5 [CI: 0.9-2.4])
  - A significant increase in helpfulness (OR 1.9 [CI: 1.2-3.0])
  - A large significant increase in receipt of explanation (OR 12.0 [7.0-20.6])

Key Take-Aways from Stage 2

Addition of written messages alone (stage 2) had little impact

Increase in patient-reported receipt of explanation in stage 3 indicates MAs were delivering verbal messages when they gave forms to patients

Effects of verbal messages (stage 3) seem contradictory

Possible reasons for decreased response rate in stage 3 include workflow challenges and more selective non-response

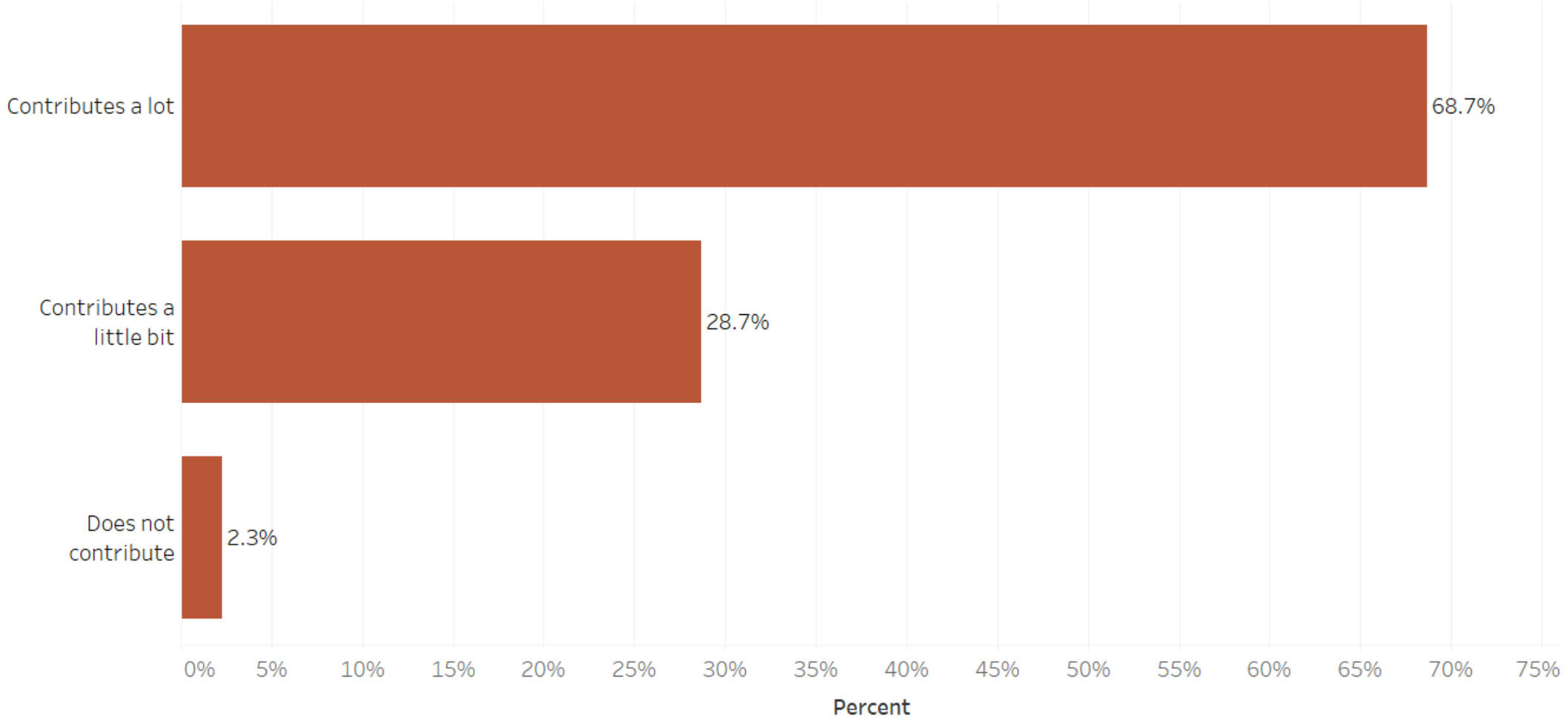
Respondent Role

Role	N = 344
Front desk staff	33 (9.6%)
MA	26 (7.6%)
Physician	13 (3.8%)
RN	59 (17.2%)
LPN	2 (0.6%)
Nurse practitioner	5 (1.5%)
PA	7 (2.0%)
Behavioral health provider	17 (4.9%)
Care manager/coordinator	24 (7.0%)
Practice manager	15 (4.4%)
Quality improvement	20 (5.8%)
Other	123 (35.8%)

Personal Experience with Food Insecurity

Respondents reporting:	N = 282
Current food insecurity (based on the 2-item Hunger Vital Sign screener)	52 (18.3%)
Past food insecurity (based on 1-item measure)	129 (46.0%)

Perceived causes of food insecurity: factors that place responsibility on the individual



N = 341

Idea for current study

- As part of the AHCM, practices were supported and encouraged to screen for HRSNs
- Regional health connectors in W Co have generally chosen food insecurity as an area of focus
- Practices in the West Mountain region expressed an interest in understanding whether their efforts at screening and referral were “working” – were people being connected to resources and was their nutrition or food security improving?

Partners

- West Mountain Regional Health Alliance: regional entity formed in 2010, working to align healthcare providers and partners, expand access, and advocate for change.
- Mountain Family Health Centers: FQHC system with clinics in Avon, Basalt, Glenwood Springs, Gypsum and Rifle
- Quality Health Network (providing the funding for this pilot): Western Colorado Health Information Exchange, also home of the Community Resource Network

Data collection

- After screening occurs at MFHC, people who screen “positive” for food insecurity are offered participation
- If they complete HIPAA A form, contact information is shared with study team
- They then receive a text and/or phone call asking them to participate
- If they agree, they receive a specific REDCap link to complete
- If they complete baseline survey, automatic links sent again at 1 and 3 months
- Receive City Market/King Soopers gift cards for each survey completed

Measures we are collecting

- USDA long form food insecurity tool
- 4D-FIS
- Brief nutrition quality screening tool
- Qualitative interviews with a subgroup (approx. 20) at 3 months

USDA screening questions

- The first statement is “(I/We) worried whether (my/our) food would run out before (I/we) got money to buy more.” Was that often true, sometimes true, or never true for (you/your household) in the last 12 months?
  - [ ] Often true
  - [ ] Sometimes true
  - [ ] Never true
  - [ ] DK or Refused
- “The food that (I/we) bought just didn’t last, and (I/we) didn’t have money to get more.” Was that often, sometimes, or never true for (you/your household) in the last 12 months?
  - [ ] Often true
  - [ ] Sometimes true
  - [ ] Never true
  - [ ] DK or Refused

During the last 30 days…

Quantitative

1. How often did you eat something small or a snack instead of eating a full meal because there was not enough food?
2. How often did your stomach ache, cramp, or feel uneasy because you needed to eat but there was not enough food?
3. How often did you go to bed feeling hungry because you needed to eat but there was not enough food?

Qualitative

4. How often did you eat very little of the foods you thought were important, because there was not enough food?
5. How often did you eat very little foods you preferred to eat because there was not enough food?
6. How often did you eat only canned foods, boxed foods, or packaged foods for several days in a row because there was not enough food?
7. How often did you eat the same foods or meals over and over again because there was not enough food?
8. How often did you have a main meal without meat because there was not enough food?
9. How often did you eat foods that were bruised, moldy, or looked unsafe to eat because there was not enough food?

Psychological

10. How often did you worry that you would not have enough food for that night or the next night?
11. How often did you worry that you would not have enough food next week or the week after that?
12. How often did you feel anxious or stressed because you did not know how you would get enough food?

Social

13. I felt that I had little control over my food situation
14. It's not fair that some people can have all the food they need and I cannot have the food I need.
15. I felt embarrassed or hid my food situation from others.
16. I felt different from other people because I could not get enough food.

Fig 1 | The Four Domain Food Insecurity Scale (4D-FIS). The 4D-FIS covers the four domains of the food access dimension of food insecurity: quantitative (3 items), qualitative (6 items), psychological (3 items), and social (4 items). For the quantitative, qualitative,

Fruit and Vegetable Checklist

Table 3. Current 16-Item Food Behavior Checklist for Use with Some Low-Income Clientele; Properties of 5 Content Areas: Criterion Validity for Fruit/Vegetable Subscale, Convergent Validity for 4 Subscales, Internal Consistency for Subscales.

	Criterion Validity for Subscale: Serum Carotenoid Correlation (n = 59)	Convergent Validity for Subscale: Recall Nutrient and Food Group Correlation (n = 100)	Internal Consistency for Subscale (α) or Spearman Correlation if Only 2 Items (*r*) (n = 100)
	r, *P* Value	*r*, *P* Value	α or *r*, *P* Value
Fruit and Vegetable			
1. Do you eat more than 1 kind of fruit daily?†			
2. During the past week, did you have citrus fruit or citrus juice?‡ Reword:During the past week, did you have citrus fruit (such as orange or grapefruit) or citrus juice?			
3. Do you eat more than 1 kind of vegetable a day?†			
4. How many servings of vegetables do you eat each day?§			
5. Do you eat 2 or more servings of vegetables at your main meal?†			
6. Do you eat fruit or vegetables as snacks?†			
7. How many servings of fruit do you eat each day?§			
7-Item fruit and vegetable scale Expect positive correlations with serum carotenoids, vitamins A and C, beta-carotene, folate, dietary fiber, servings of fruit and vegetables, and Healthy Eating Index (HEI)	0.44***	Servings fruit, .36**** vegetables, .33*** fiber, .31** vitamin C, .32*** vitamin A, .29** folate, .26* beta-carotene, .25*	α = .80

Progress so far

- 25 people have completed the HIPAA A form, 10 have completed the survey
- Initial data shows mostly low food security – worry and concern over not having enough food, but little true hunger (one respondent reported missing meals, going to bed hungry)
- Will need to continue assertive outreach to recruit given we would like to survey 60 people (would require 150 people to agree to HIPAA A if current trend continues)

Future Directions

- This data will give us an idea of what changes for people after screening occurs
- Will also give us an idea of whether people are connected to new resources
- May indicate some ways that this process could be more effective
- May indicate some ideas for interventions or studies that cross-sectors, and possibly ideas around improving diet quality

"HUNGER IS NOT A PROBLEM. IT IS AN OBSCENITY. HOW WONDERFUL IT IS THAT NOBODY NEED WAIT A SINGLE MOMENT BEFORE STARTING TO IMPROVE THE WORLD.

– ANNE FRANK

"

"

FOOD IS NATIONAL SECURITY. FOOD IS ECONOMY. IT IS EMPLOYMENT, ENERGY, HISTORY. FOOD IS EVERYTHING.

– CHEF JOSÉ ANDRÉS