

Identification of food insecurity and interdisciplinary team interventions in home parenteral nutrition patients



Hannah Welch MS, RD; Wendy Raissle RD, CNSC; Maria Karimbakas RD, CNSC; Optum Infusion Pharmacy

Introduction

Food insecurity is when people do not have enough food to eat and do not know where their next meal will come from. In the United States, approximately 49 million people relied on food assistance charities in 2022. Patients receiving parenteral nutrition (PN), who may be capable of supplementing with oral intake, may experience food insecurity due to chronic health conditions limiting work capability and total family income. Patients may also experience lack of affordable housing, increased utilities and the burden of medical expenses. Signs of food insecurity may present as weight loss, malnourishment, low energy, difficulty concentrating, or other physical indicators such as edema, chronically cracked lips, dry skin, and itchy eyes. The purpose of this abstract is to highlight two unique patient case presentations where food insecurity prompted clinicians to intervene.

Methods

Patient 1: A 50-year-old male with short bowel syndrome (SBS) on long-term PN called the dietitian regarding financial difficulties with feeding the family (Table 1). The patient and clinician relationship allowed the patient to convey sensitive concerns to the registered dietitian (RD) regarding inability to feed himself and his family, which resulted in the patient relying on the PN for all nutrition. Due to the food insecurity present, the clinician made changes to PN/hydration to help improve patient's clinical status.

Patient 2: A 21-year-old male with SBS on long-term PN spoke with his in-home registered nurse (RN) regarding family's difficulties affording food (see Table 2). The RN informed the clinical team of suspected food insecurity and the insurance case manager (CM) was contacted regarding food affordability. The RD reached out to local community resources such as food banks, food boxes and community programs. A community program was able to assist the patient with meals until patient's aunt started cooking meals for him. This patient did not directly share food insecurity with RD; however, the relationship with the in-home RN proved valuable in having these face-to-face conversations with the patient.

Results

In these two patient examples, difficulty obtaining food affected the patients' clinical status. The clinical team identified food insecurity and the need for further education for the interdisciplinary team. A food insecurity informational handout was created by the RD with an in-service to nursing to help aid recognition of signs (Figure 1) to detect possible food insecurity and potential patient resources available in the community. Figure 2 presents suggested questions to ask if an issue is suspected.

Table 1. Patient 1 information

| Dates | October 2023 | November 2023 | December 2023 |
|--------------------------------------|--|--|---|
| Weight | 115# | 108# | 117# |
| BMI | 19.2 | 18 | 19.5 |
| PN providing | 1653 kcal (32kcal/kg), 72g pro (1.4g/kg), 1800mL fluid (PN) | 2010 kcal (41kcal/kg), 85g pro (1.7g/kg), 3100mL fluid (PN + hydration) | 2010 kcal (38kcal/kg), 85g pro (1.6g/kg), 3100mL fluid (PN + hydration) |
| Social/clinical concerns | -No concerns. -Pt did voice that he lost his job and had several interviews for new jobs. | -Pt asked RD for calorie increase in PN due to constantly feeling hungry, dry mouth, decreased skin turgor. States family is unable to afford food at this time. Pt does have PO intake however has sacrificed his food to help provide food for his family. -Low body weight and weight loss observed. | -Pt states face is filling in and he is feeling and looking better. -Family situation with finances has improved since signing up for assistance from community resources. |
| Interdisciplinary team Interventions | -No changes to formula. | -Provided patient with community resources. -Increased calories in PN. -Additional hydration added to patient's regimen. | -Pt received assistance from food banks and the Social Security Administration. |

Table 2. Patient 2 information

| Event date | 4/10/23 | 6/24/23 | 7/1/23 | 7/11/23 | 7/25/23 | 12/13/23 |
|---|---------------------------------|--|---|---|--|---|
| Weight | 163.4# | 159# | 157# | 157# | 158# | 151# |
| BMI | 24.1 | 23.5 | 23.2 | 23.2 | 23.3 | 22.3 |
| PN days/week | 7 days | 6 days | 6 days | 6 days | 6 days | 6 days |
| PN providing | 2185 kcal 120g pro 2500mL | 1843 kcal 103g pro 2500mL | 1843 kcal 103g pro 2500mL | 1843 kcal 103g pro 2500mL | 1843 kcal 103g pro 2500mL | 1843 kcal 103g pro 2500mL |
| Hydration providing | 1L NS daily | 1L NS daily | 1L NS daily | 1.5L NS 6d/wk 3L NS 1d/wk | 1.5L NS 6d/wk 3L NS 1d/wk | 1.5L NS 6d/wk 3L NS 1d/wk |
| Total volume providing (PN + hydration) | 3.5L | 3.1L | 3.1L | 3.85L | 3.85L | 3.85L |
| Social/clinical concerns | -No concerns. | -Self reported difficulty affording food to RN. | -Pt decreased PO intakes. | -Reported s/s dehydration. | -No concerns. -Denies s/s dehydration. -Improved appetite. | -Suspect food selection changes related to food access, weight loss. |
| Interdisciplinary team Interventions | -None. | -RD/RN collaborate on community resources. -RN contacted insurance CM to assist with gaining resources in the home. | -RN provides resource guide to pt in home. -RD finds community food charity resource to deliver food to pt and family. | -Orders obtained for increase in daily hydration. | -Denies s/s dehydration. -Visiting family member cooking 3 meals/day for patient. | -RD reviewed budget friendly food examples to aid in increasing calories. Pt wants to stay on 6 days/week PN. |

NS=Normal saline (sodium chloride 0.9%)

Conclusion

Given the prevalence of food insecurity, routine assessment for signs and symptoms is essential. Home nutrition support teams (including RDs, RNs, pharmacists and care technicians) are positioned to assist in this effort as they have frequent phone and in-home contact with patients and together build a trusted relationship with patients and caregivers. Clinicians should be aware regarding potential social situations which can warrant changes to PN formulations. To approach this sensitive issue thoughtfully, PN infusion providers should consider enhancing patient assessments and promote education across the interdisciplinary team to create awareness of accessible community resources.

Figure 1: Signs to detect food insecurity

In adults:

- They have low energy or miss work.
- They have difficulty concentrating or may react strongly or angrily to questions.
- Physical indicators may be swollen or puffy skin, chronically cracked lips, dry skin or itchy eyes.

In children:

- They have low energy, miss school, or have poor attention span, poor memory or trouble concentrating.
- They ask about food every day and are not picky about what they eat.
- They suddenly lose or gain weight but don't change their activity level.
- They hoard snacks and food.
- They bully others or behave badly, are hyperactive or impulsive, or show aggressive or antisocial behavior.

Information adapted from [feedingamerica.gov](https://www.feedingamerica.gov).

Figure 2: Questions to ask

- How often are you getting to the grocery store?
- How do you prepare your meals in the kitchen?
- Do you have any concerns about having enough food?
- Have you worried whether your food would run out?
- Have you gone to bed hungry?
- Has your household run out of food?
- Have you skipped meals?
- Have you waited until you got paid before going to the grocery store?

Information adapted from [feedingamerica.gov](https://www.feedingamerica.gov).

