**BACKGROUND**

Malnutrition: An Under-Recognized Public Health Problem
- Malnutrition is common but challenging to identify among hospitalized adults, with prevalence estimates ranging from 4-45%.
- Chronic disease is a frequent cause of malnutrition, highlighting the need for interventions that treat and prevent malnutrition beyond the hospitalization.

Challenges in Treating Malnutrition Beyond the Hospital Walls
- Few (11.8%) patients received diet instructions specific to malnutrition. Nearly a third (30.3%) provided cardiac or low carbohydrate diet instructions, which are often inappropriate for malnourished patients because they limit the intake of energy- and nutrient-dense foods. The automation and variety of diet instructions in the EMR may facilitate the provision of inappropriate discharge care.
- Only five patients (6.6%) received EMR-documented discharge instructions to consume ONS, despite the fact that nearly 66% of patients were recommended and received ONS while in the hospital. ONS is a potentially effective intervention, but is rarely recommended for home nutrition care.

**METHODS**

**Setting**
Christiana Hospital, part of the Christiana Care Health System, is a 943-bed community hospital in northern Delaware. Dietitians identify malnutrition using a modified version of the criteria established by the Academy of Nutrition and Dietetics and the American Society for Parenteral and Enteral Nutrition (ASPEN), replacing the criterion of handgrip strength with identification of underweight BMI.

**Study Design**
This prospective cohort study followed all patients aged 18 and older who were identified as malnourished by a dietitian during an index hospitalization at Christiana Hospital between November 15, 2017 and March 15, 2018. Study activities included:

- Descriptive analysis of all malnourished adult patients
- N=308 patients/index admissions
- Chart reviews focused on discharge summary/instructions
- n=76 patients/index admissions
- Telephone surveys to assess patients’ home nutrition care
- n=8 patients/index admissions

*Inclusion criteria: under hospital discharge, English-speaking
Exclusion criteria: on maternity, psychiatric, hospice, or comfort care

This study was approved by the Christiana Care Institutional Review Board.

**RESULTS**

**Malnourished Adult Patient Population**

<table>
<thead>
<tr>
<th>Type of malnutrition, n (%)</th>
<th>Malnourished adult patients (n=308)</th>
<th>Chart Reviews (n=76 patients/admissions)</th>
<th>Survey Respondents (n=8 patients/admissions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate due to acute illness or injury</td>
<td>11 (3.6)</td>
<td>3 (3.9)</td>
<td>3 (3.9)</td>
</tr>
<tr>
<td>Moderate due to chronic illness</td>
<td>59 (19.2)</td>
<td>19 (25)</td>
<td>2 (25)</td>
</tr>
<tr>
<td>Moderate due to social/environmental circumstances</td>
<td>2 (0.6)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Severe due to acute illness or injury</td>
<td>73 (23.7)</td>
<td>23 (30.3)</td>
<td>3 (37.5)</td>
</tr>
<tr>
<td>Severe due to chronic illness</td>
<td>162 (52.6)</td>
<td>51 (66.7)</td>
<td>6 (75)</td>
</tr>
<tr>
<td>Severe due to social/environmental circumstances</td>
<td>1 (0.3)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

**Discharge Care Instructions**

<table>
<thead>
<tr>
<th>Informed consent for nutrition care</th>
<th>N=308 patients/index admissions</th>
<th>Chart Reviews (n=76 patients/admissions)</th>
<th>Survey Respondents (n=8 patients/admissions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chart reviews focused on discharge summary/instructions</td>
<td>76 (100)</td>
<td>76 (100)</td>
<td>76 (100)</td>
</tr>
<tr>
<td>Telephone surveys to assess patients’ home nutrition care*</td>
<td>8 (100)</td>
<td>8 (100)</td>
<td>8 (100)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

**Characteristics of the Malnourished Patient Population**

- The mean BMI of this population is in the normal weight range, which runs counter to the perception that malnutrition is synonymous with low weight.
- Nearly three-quarters (71.8%) of malnutrition cases were due to chronic disease, underscoring the importance of nutritional care for chronically ill patients.

**Limitations**

The survey data came from a small sample and should be interpreted with caution. The inclusion/exclusion criteria used to select patients for chart reviews and/or survey participation included only a quarter of all malnourished patients, and findings may not adequately represent the entire study population.

**Core Competencies**

1. Applies ethical principles in accessing, collecting, analyzing, using, maintaining, and disseminating data and information
2. Uses information technology in accessing, collecting, analyzing, using, maintaining, and disseminating data and information
3. Gathers information that can inform options for policies, programs, and services
4. Provides input for developing, implementing, evaluating, and improving policies, programs, and services
5. Recognizes limitations of evidence

**ACKNOWLEDGEMENTS**

Thank you to Rosemary Frasso, PhD, capstone chair; Mia Papas, PhD, capstone preceptor; Michael T. Vest, DO, co-investigator; and Mary Shapero, RN, co-investigator for your support throughout this project.