

Use of the Nutrition Care Process Quality Evaluation and Standardization Tool (NCP-QUEST) to Inform Training in a Student Cohort



THE OHIO STATE UNIVERSITY
COLLEGE OF MEDICINE

Kristen Heitman, MS, RDN, LD¹; Marcia Nahikian-Nelms, PhD, RDN, LD, CNSC, FAND^{1,2}; Holly Estes-Doetsch, MS, RD, LD^{1,2}; Kristen M. Roberts, PhD, RDN, LD, CNSC, FAND, FASPEN^{1,2}; Jennifer Garner, PhD, RD^{1,3}; Julie Kennel, PhD, RDN, LD⁴; Christopher A. Taylor, PhD, RDN, LD, FAND^{1,2}

¹The Ohio State University School of Health and Rehabilitation Sciences; ²The Ohio State University, Division of Medical Dietetics; ³The Ohio State University College of Public Affairs; ⁴The Ohio State University College of Education and Human Ecology

BACKGROUND

Provision of Medical Nutrition Therapy (MNT) distinguishes registered dietitian nutritionists (RDN) from other healthcare providers. To communicate effective nutrition care, RDNs use the Nutrition Care Process (NCP): a systematic method for providing and documenting nutrition care. Training students in the NCP is a critical component of their educational journey to becoming a RDN. Leveraging real-world scenarios through case studies gives students an opportunity to apply the NCP in a low-stakes environment, and provides space for instructor guidance and feedback.

The NCP Quality Evaluation and Standardization Tool (NCP-QUEST) is an instrument used to perform documentation quality audits in the clinical setting, and guide improvement efforts. Moreover, it has the potential to demonstrate effectiveness of nutrition care. However, it has not yet been used to assess changes in quality of nutrition care documentation in the classroom. This tool may support instructors in focusing their training efforts.

The objective of this study is to assess changes in quality of nutrition care documentation as students progress through MNT courses.

- **THEORY:** Adult Learning Theory guided design and delivery of courses within the Future Education Model dietetics program.
- **AUDIENCE:** First-year students enrolled in the masters-level Future Education Model dietetics program during the fall semester of 2021.
- **CURRICULUM:** Lecture, peer-to-peer activities, case studies, and standardized patient experiences are used to develop student competence in nutrition care over the course of the semester.

METHODS

- Educational record data from first-year students enrolled in the Future Education Model masters-level dietetics program at The Ohio State University (OSU) during the 2021-2022 academic year were accessed and anonymized (n=31).
- Two case study notes completed by students during the 8th and 15th weeks of the semester were analyzed for quality using the validated NCP-QUEST (Figure 3).
- Differences in mean scores were assessed for changes with paired samples t-tests.
- This study was approved by the OSU IRB.

Figure 1. Note Quality by Category

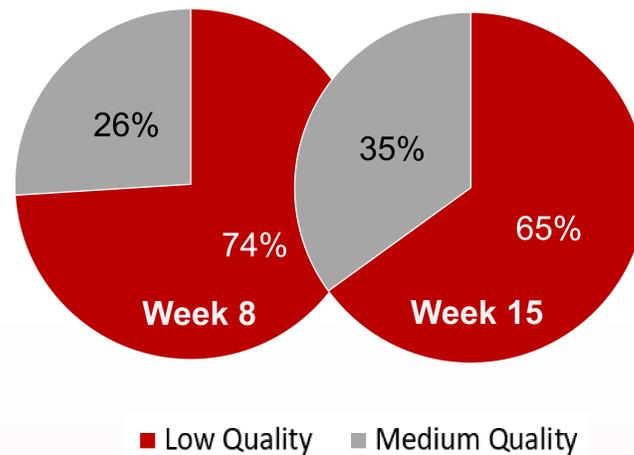


Figure 3. NCP-QUEST Tool

Criteria	Initial Assessment	Re-assessment
NA - NUTRITION ASSESSMENT - EVIDENCE - 4 points	Yes=1 No=0	Yes=1 No=0
NA 1. Documents assessment data that is outside of accepted standards, recommendations and/or goals		
NA 2. Uses comparative standards in the NA that are essential to the ND, when applicable		
NA 3. Measurable assessment data provides evidence that a nutrition diagnosis is present		
NA 4. Assessment data is succinct and relevant		
ND - NUTRITION DIAGNOSIS - 4 points		
ND 1. Problem: label of the PES uses standardized terminology (or approved synonym)		
ND 2. Etiology: is the root cause of the ND that a nutrition provider can resolve or mitigate S/Sx		
ND 3. Etiology: in addition to free text etiology, documents the etiology matrix category		
ND 4. S/Sx: provide evidence that the ND exists		
NI - NUTRITION INTERVENTION - 6 points		
NI 1. Each NI has an action consistent with the goals of care		
NI 2. A nutrition prescription is written		
NI 3. Directs NI to resolve the etiology and/or improve the S/Sx		
NI 4. There is at least one NI for each etiology listed in PES		
NI 5. Uses standardized terminology to document NI		
NI 6. Documents a specifies reassessment plan and timeline (i.e., Follow-up in 1 month/discontinuation)		
NM - NUTRITION MONITORING SECTION - 2 points		
NM 1. Uses standardized terminology to document indicators (e.g. weight, glucose, total energy, estimate intake in 24 hours) that reflect the S/Sx to monitor upon reassessment		
NM 2. Documents specific criteria for each indicator (e.g. weight less than 2500 (113 kg) within 1 month)		
NE - NUTRITION EVALUATION - REASSESSMENT SECTION - 6 points		
NE 1. Restates the ND in the reassessment documentation		
NE 2. Addresses the status of ND using standardized terminology (e.g. resolved/active)		
NE 3. Documents intervention success or barriers to implementation/reasons for delay in the application of each intervention		
NE 4. Reassesses the nutrition indicator/assessment data (e.g., weight) from previous interaction (encounter)		
NE 5. Evaluates the goals (actions of the intervention) established at last visit using standardized terminology (e.g., goal achieved, goal not achieved)		
NE 6. Documents the effectiveness of each NI or modifies NI when there is no evidence that the intervention has been effective		
OVERALL QUALITY ASPECTS - 2 points		
OQ 1. Uses clear language in documentation		
OQ 2. All NCP links are present (when assessment and reassessment notes are available)*		
Total Points (Assessment) (Assessment+Reassessment)	0 / 18	0 / 24
Quality Rating	Initial	Initial plus Reassessment
Level A (high quality)	14-18	19-24
Level B (medium quality)	10-13	13-18
Level C (low quality)	<9	<12

Abbreviations: NA-Nutrition Assessment; ND-Nutrition Diagnosis; NI-Nutrition Intervention; NM-Nutrition Monitoring; NE-Nutrition Evaluation; PES-problem/etiology/signs and symptoms; S/Sx-signs and symptoms

Initially Developed by Dee Pate, RD, LDN and Stuart Jones, MS, RD, LD, UPMAC, Pennsylvania State University. Reviewed and updated (2019) with the assistance of Nancy Heibel-Smith, PhD, RD and Dee Pate, RD, LDN. Reviewed and updated (2019) by Academy staff. Reviewed and updated (2021) by Vanessa Adams, CA, Registered Dietitian and Academy staff.

Lewis SL, Miranda LS, Kurtz J, Larison LM, Brewer WJ, Papoutsakis C. Nutrition Care Process Quality Evaluation and Standardization Tool: The Next Frontier in Quality Evaluation of Documentation. *J Acad Nutr Diet.* 2022;122(3):650-660.

RESULTS

Figure 2. Average NCP-QUEST Scores as Percent of Goal

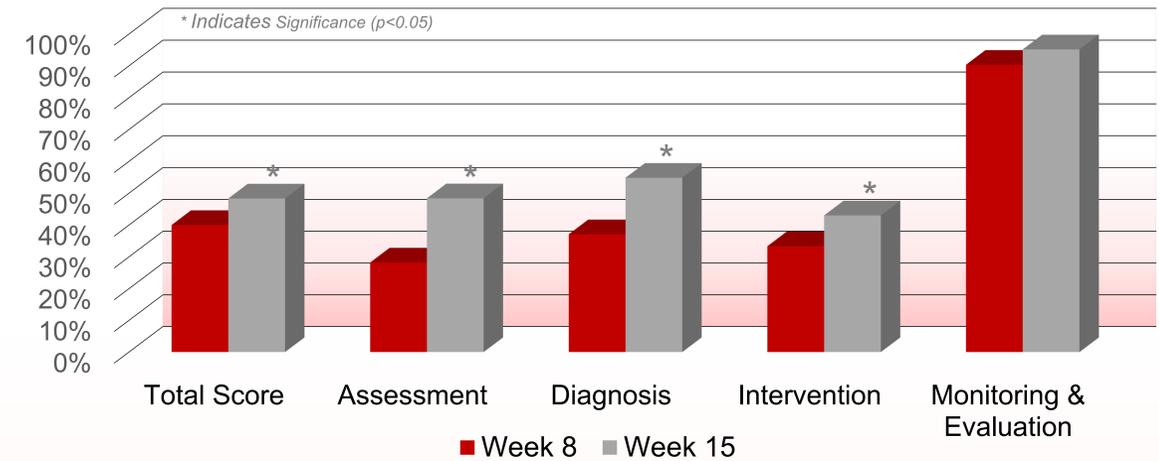


Table 1. Areas of Strength & Opportunities for Improvement

Areas of Strength ≥25 students received point	Opportunities for Improvement ≤1 students received point
ND1: Problem label of the PES uses standardized terminology.	NA4: Assessment data is succinct and relevant.
ND2: Etiology is the root cause of the ND that a nutrition provider can resolve or mitigate S/Sx.	ND3: In addition to free text etiology, documents the etiology matrix category.
NI2: A nutrition prescription is written.	NI5: Uses standardized terminology to document NI.

CONCLUSIONS

Students showed significant improvement between writing their first and second case study notes, indicating gains in knowledge and skill as they progressed through the MNT course.

This study elucidates areas of focus for educators to improve quality of student nutrition notes such as ensuring assessment data supports the remainder of the note (ie: succinct and relevant), using the etiology matrix, and employing standardized terminology to document the intervention. Emphasizing the importance of sequentially linking components of the NCP together (NCP chains) during the education process may support enhancement of these categories.