Accuracy of Malnutrition Documentation in the Hospitalized Adult: A Retrospective Analysis

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INTRODUCTION

- In the hospital setting, disease-related malnutrition affects approximately 30-50% of patients.
- Malnutrition is associated with increased illness severity, necessitating a higher level of care.
- With increased resource utilization comes increased costs. The Centers for Medicare and Medicaid Services (CMS) recognizes this, and thus malnutrition documented and coded as a secondary diagnosis has the potential to shift the reimbursable value for patient care substantially.
- Inaccuracies in documentation and coding persist, leading to missed reimbursement.
- Malnutrition coding terminology/definitions: Major complication/comorbidities (MCCs): severe protein-calorie malnutrition. Complications/comorbidities (CCs): Mild, moderate or unspecified protein-calorie malnutrition.

PROJECT PURPOSE

- To investigate accuracy of malnutrition documentation and coding, calculating both captured and postulated missed reimbursement, among a segment of hospitalized adults at the University of Virginia Health System (UVAHS).

PARTICIPANTS

Adult patients discharged from April 1- September 30, 2015, falling within the following diagnosis related groups (DRGs) were included.

- *MS-DRG 190-192: Chronic Obstructive Pulmonary Disease (COPD)*
- *MS-DRG 193-195: Simple Pneumonia & Pleurisy (Community-Acquired Pneumonia; CAP)*
- *MS-DRG 459-460: Spinal Fusion Except Cervical*
- *MS-DRG 846-848: Chemotherapy w/o Acute Leukemia as a Secondary Diagnosis*

METHODS

- Data was analyzed for the presence of malnutrition as a secondary diagnosis, using ICD-9 codes.
- Subsequent captured hospital reimbursement was calculated.
- All cases were reviewed in the electronic medical record for registered dietitian (RD) documentation of malnutrition, with potential reimbursement calculated to quantify missed opportunities when malnutrition codes are absent or incorrect.
- To determine if a secondary diagnosis of malnutrition would be the primary driver of increased relative weight, and thus reimbursement, individual cases were analyzed for the presence of other MCC's or CC's.

Table 1: Determining Missed Reimbursement Based on Shifts in MS-DRG

MS-DRG + Diagnosis	Relative Weight (RW)	Base Rate (if RW=1)	Total Expected Reimbursement	Change In RW When MS-DRG Shifts	Missed Reimbursement When MS-DRG Shifts
190: COPD w MCC	1.1743	$9066.88	$10,647.24	0.2373 (191-190)	Diff $2,151.57
191: COPD w CC	0.9370		$8,495.67	0.218 (192-191)	Diff $1,976.58
192: COPD w/o CC/MCC	0.7190		$6,519.09	0.4553 (192-190)	Diff $4,128.15
193: CAP w MCC	1.4491		$13,138.82	0.4803 (194-193)	Diff $4,399.83
194: CAP w CC	0.9688		$8,738.99	0.2644 (195-194)	Diff $2,352.28
195: CAP w/o MCC/CC	0.7044		$6,386.71	0.7447 (195-193)	Diff $6,752.11
459: Spinal Fusion w MCC	6.6686		$60,463.40	2.6688 (460-459)	Diff $24,197.69
460: Spinal Fusion w/o MCC	3.9998		$36,265.71		
846: Chemotherapy w MCC	2.3264		$21,093.19	1.1695 (847-846)	Diff $10,603.72
847:Chemotherapy w CC	1.1569		$10,489.47	0.3115 (848-847)	Diff $2,824.33
848: Chemotherapy w/o MCC/CC	0.8454		$7,665.14	1.481 (848-846)	Diff $13,428.05

*References available upon request.

RESULTS

Table 2: Total Captured Increased Reimbursement From Malnutrition Documentation and Coding

MS-DRG + Diagnosis	Total cases	# of cases with malnutrition as a secondary diagnosis	# of cases where malnutrition was the primary driver of reimbursement	Total increased captured reimbursement
190-192: COPD	71	1	0	0
193-195: CAP	81	11	7	$28,751.26
459-460: Spinal Fusion	193	5	1	$24,197.69
846-848: Chemotherapy	111	2	1	$10,603.72
TOTALS	**456**	**19**	**9**	**$63,552.67**

Table 3: Total Missed Reimbursement When Documentation and Coding For Malnutrition Are Absent

MS-DRG + Diagnosis	RD documentation of malnutrition, though no secondary diagnosis code	Secondary diagnosis of malnutrition would have been the primary driver of reimbursement	Total missed reimbursement
190-192: COPD	5	1	$1,976.58
193-195: CAP	10	6	$26,128.92
459-460: Spinal Fusion	3	2	$48,395.38
846-848: Chemotherapy	2	0	0
TOTALS	**20**	**9**	**$76,500.88**

DISCUSSION & CONCLUSION

- 19 patients were coded on discharge with malnutrition as a secondary diagnosis, with 9 as severe protein-calorie malnutrition. In these 9 cases, malnutrition was the primary driver of increased reimbursement, totaling $63,552.67.
- Documentation of malnutrition by the RD was identified in 30 cases lacking a malnutrition diagnosis code on discharge. In 9 of these cases, malnutrition could have been the primary driver of increased reimbursement, producing an additional $76,500.88 (55% of estimated total reimbursement due to malnutrition coding).
- Results demonstrate the significant role of malnutrition diagnoses in determining hospital reimbursement. Limited hospital reimbursement has repercussions regarding resource utilization for the care of future patients as well as the RDs the hospital can support. Furthermore, lack of accurate capture of the prevalence of severe protein-calorie malnutrition negatively impacts the hospital's base rate, thus impacting future reimbursement.
- Limitations: While data obtained indicated whether a diagnosis of malnutrition was flagged as a CC or MCC, further investigation was required to determine if malnutrition is the primary driver in shifting the MS-DRG and subsequent relative weight depending on whether other CCs or MCCs are present. Obtaining this information required extensive collaboration with finance and health information management departments. Therefore, not all patients admitted to the hospital during this time frame were analyzed.
  Future steps necessitate ongoing presentations to hospital leadership and educational interventions across disciplines to address the importance of interdisciplinary communication, from screening to documentation, for concerns of malnutrition. Consistent data collection across multiple patient populations, including pediatrics, at UVAHS on a bi-annual basis may allow for greater monitoring and evaluation of quality improvement measures to come.

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