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A Rapid, Comprehensive Oral Nutritional Supplement Quality Improvement Program Reduces 30-Day Readmission in Malnourished Hospitalized Patients

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Purpose: Positive clinical and economic effects of oral nutritional supplements (ONS) on 30-day hospital readmissions (ReAdm) have been reported. The practical, programmatic aspects of implementing use of a validated malnutrition screening tool—together with developing and enforcing a sustained clinical environment of ONS consumption within the malnourished inpatient population—has not been studied. Nutrition-related initiatives are rarely considered in ReAdm reduction measures. The objective was to investigate the effect of the administration of a quality improvement program (QIP) integrating nutrition risk screening by nursing staff at the time of admission and ONS supplementation of hospitalized patients on non-elective 30-day ReAdm as compared to pre-QIP historical rate of ReAdm. An absolute difference of 4% reduction in 30-day ReAdm rates was targeted.

Methods: The ReAdm rate of historical comparison pre-QIP was 20%. In the QIP, 2 hospitals (a teaching hospital and a community hospital) from a 10-member system were selected where the electronic medical record (EMR) was upgraded to include Malnutrition Screening Tool (MST) and automatic condition-specific ONS administration to all patients at risk for malnutrition (MST \geq 2). Dietitians assessed patients who screened positive to confirm the diagnosis of malnutrition and design the patient-specific nutrition plans. The enhanced QIP (QIP+) included 2 other hospitals (same mix as QIP), where in addition to the initiatives in QIP, aggressive nutrition-related procedures were implemented (faster administration of ONS, specific discharge instructions, coupons for purchase of ONS, and 4 follow-up/compliance telephone calls). More important, in the QIP+ hospitals, additional educational activities for nurses and dietitians were initiated, reinforcing patient and caregiver education about the importance of ONS. ReAdm data were obtained from the institution's electronic data warehouse and reconfirmed by manual extraction and review by one or more blinded investigators.

Results: Data from 1269 patients enrolled between October 2014 and April 2015 were analyzed: QIP, n = 769; QIP+, n = 500. Between the 2 QIP groups, the demographic, clinical characteristics, and length of stay were comparable. The post-QIP 30-day ReAdm rate in the QIP+ was 15.6%, showing an absolute rate reduction of 4.4%, as compared to pre-QIP (22% relative risk reduction of readmission, $P < .01$). Similarly, an absolute reduction of 3.6% (18% relative risk reduction of readmission, $P < .01$) was seen in the QIP (post-QIP ReAdm rate = 16.4%), as compared to pre-QIP. A negative correlation was observed between educational activities and errors in malnutrition risk identification using the MST ($P < .01$). Significant cost savings were estimated for both QIP groups.

Conclusions: Thirty-day unplanned hospital ReAdm can be significantly decreased among the malnourished inpatient population through a comprehensive QIP with a validated nurse-initiated nutrition screening tool incorporated into the EMR with multi-disciplinary team follow-up, immediate provision of ONS, ongoing patient education, and sustained provider and administrative programmatic support.

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