Nutrition and Hydration Current Awareness Bulletin
August 2018

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Title: Impact of Gastrostomy Feeding Tube Placement on the 1-Year Trajectory of Care in Patients After Stroke.

Citation: Nutrition in Clinical Practice; Aug 2018; vol. 33 (no. 4); p. 553-566
Author(s): Wilmskoetter, Janina; Simpson, Annie N.; Logan, Sarah L.; Simpson, Kit N.; Bonilha, Heather S.

Background: Percutaneous endoscopic gastrostomy (PEG) feeding tubes are commonly placed in acute stroke patients with a need for enteral nutrition. However, PEG tubes are associated with medical complications and a decrease in quality of life. We compared the 1-year care trajectory of stroke patients with and without PEG tube placement to enhance knowledge about the long-term impact of PEG tube placement.

Methods: We conducted a retrospective analysis of commercially insured stroke patients included in the Truven Health MarketScan Research Databases of 2011. We analyzed their index hospital stay and conducted 1-month, 3-months, 6-months, and 1-year follow-ups. We compared admissions to inpatient rehabilitation facilities, acute hospitals, skilled nursing facilities, outpatient hospital visits, and home visits for stroke patients with and without PEG tube placement using unadjusted and adjusted modelling.

Results: Of the 8911 included stroke patients, 148 patients (1.7%) had a PEG tube placed during their index hospital stay. After controlling for age, gender, stroke severity, comorbidities, and stroke type, PEG tube placement was an independent predictor for admissions to inpatient rehabilitation facilities and skilled nursing facilities. Furthermore, PEG tube placement was an independent predictor for all-cause, unplanned hospital readmissions in a multivariable logistic model (area under the receiver operating characteristic curve was .84).

Conclusion: Stroke patients who receive a PEG tube can expect a significantly different care trajectory after being discharged from the acute hospital. Our findings can aide in predicting recovery and planning resources and identifying gaps and points for improvement in stroke care for patients with PEG tube placement.

Title: Improving nutritional discharge planning and follow up in older medical inpatients: Hospital to Home Outreach for Malnourished Elders.

Citation: Nutrition & Dietetics; Jul 2018; vol. 75 (no. 3); p. 283-290
Author(s): Young, Adrienne M.; Mudge, Alison M.; Banks, Merrilyn D.; Rogers, Lauren; Demedio, Kristen; Isenring, Elisabeth

Aim: Nutritional decline during and after acute hospitalisation is common amongst older people. This quality improvement initiative aimed to introduce a dietitian-led discharge planning and follow-up program (Hospital to Home Outreach for Malnourished Elders, HHOME) at two hospitals within usual resources to improve nutritional and functional recovery.

Methods: Prospective pre–post evaluation design was used. Medical patients aged 65+ years at-risk of malnutrition and discharged to independent living were eligible. Participants receiving nutrition discharge planning and dietetic telephone follow up for four weeks post-discharge (‘HHOME’) were compared to usual care (‘pre-HHOME’). Nutritional (weight and mini nutritional assessment (MNA)), functional (gait speed, handgrip strength and modified Barthel index) and assessment of quality of life-6D (AQoL-6D) outcomes were measured on discharge and six weeks later.
**Results:** At six weeks, no significant difference in nutritional status was observed between pre-HHOMEx (n = 39) and HHOMEx cohorts, although the HHOMEx cohort on average maintained weight while pre-HHOMEx cohort lost weight (0.4 ± 2.9 kg vs −1.0 ± 3.7 kg, P = 0.060). Greater improvement in gait speed was seen in HHOMEx group (+0.24 ± 0.27 vs +0.11 ± 0.22, P = 0.046) with no other significant outcome improvements. Across both cohorts, half were readmitted to hospital and 10% died within 12 weeks post-discharge.

**Conclusions:** The nutritional discharge planning and dietetic follow up provided to older community-living malnourished patients made a small impact on nutritional and functional parameters but clinical outcomes remained poor.

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**Title:** Optimizing Nutrition for the Surgical Patient: An Evidenced Based Update to Dispel Five Common Myths in Surgical Nutrition Care.

**Citation:** American Surgeon; Jun 2018; vol. 84 (no. 6); p. 831-835

**Author(s):** Hartwell, Jennifer L.; Cotton, Ann; Rozycki, Grace

**Abstract:** Traditional practices in the delivery of nutrition to the surgical patient include reliance on nonspecific laboratory markers to define malnutrition, prolonged periods of nil per os, early and liberal initiation of parenteral nutrition, withholding enteral feedings based on gastric residual volume measurements, and pursuing feeding tube access for most patients unable to take oral nutrition. However, recent studies call into question all of these practices. This review aims to provide evidenced-based support to abandon these myths regarding nutrition delivery and offer practical up-to-date advice for best practices in patient care.

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**Title:** Early Enteral Nutrition Is Associated with Reduced Morbidity in Critically Ill Soft Tissue Patients.

**Citation:** American Surgeon; Jun 2018; vol. 84 (no. 6); p. 1003-1009

**Author(s):** Haac, Bryce; Henry, Sharon; Diaz, Jose; Scalea, Thomas; Stein, Deborah

**Abstract:** Soft tissue diseases including necrotizing soft tissue infections are associated with high mortality and morbidity with hospital-acquired infection rates up to 76 per cent. Critically ill patients with soft tissue infections have increased metabolic requirements; however, the effect of early nutrition on in-hospital morbidity including nosocomial infection rates remains unclear. We hypothesized that enteral nutrition within 48 hours of intensive care unit admission would be associated with fewer hospital-acquired infections. We conducted a retrospective review of patients with soft tissue infection requiring intensive care unit admission for >72 hours from January 2013 through December 2014 to a high-volume, dedicated soft tissue service. Variables were compared using chi-squared, Student's t test, linear regression, and binary logistic regression analysis. Eighty-five patients met inclusion criteria; 80 per cent started enteral nutrition within 48 hours. Twenty-six per cent had a hospital-acquired infection postadmission requiring treatment. Patients started on enteral nutrition within 48 hours had fewer ventilator days (mean 5 vs 12) and shorter hospital length of stay (mean 18 vs 40 days) when adjusted for age, gender, and confounding variables present on admission. Patients receiving early nutrition also had fewer hospital-acquired infections (18 vs 59%) when adjusted for confounding factors (aOR 0.15, P = 0.045). No significant difference in mortality (13.2% early vs 5.9% late, P = 0.4) or for in-hospital morbidity when evaluating percentage of goal calories or protein received or time to goal tube feed rate was found. Early enteral feeding is associated with reduced inhospital morbidity in critically ill soft tissue patients, including fewer hospital-acquired infections and ventilator days, and shorter total length of stay.
Title: I-Hydrate training intervention for staff working in a care home setting: An observational study.

Citation: Nurse Education Today; Sep 2018; vol. 68; p. 61-65

Author(s): Greene, Carolyn; Canning, Deebs; Wilson, Jennie; Bak, Aggie; Tingle, Alison; Tsiami, Amalia; Loveday, Heather

Background: Dehydration is a complex and well-recognised problem for older people residing in care homes. Within the social care sector support staff provide the majority of direct care for residents, and yet receive minimal training.

Objectives: To design, deliver and evaluate a hydration specific training session for care home staff to develop their knowledge and skills in supporting the hydration of care home residents.

Design: An observational study comprising a pre-test post-test survey of staff knowledge following a training intervention. Participants and Settings Training of care home staff took place in two care homes in North West London.

Methods: An interactive training session was developed and delivered, with content informed by observations of hydration care within the two homes and evaluated using CIRO model. Participant self-evaluation forms were used to collect data after the session regarding satisfaction and usefulness of the session, and pre and post levels of self-reported knowledge across six facets of hydration care. Training facilitators captured qualitative data in the form of field notes. Observations of hydration care explored the impact of training on practice.

Results: Eighteen training sessions were delivered. A total of 161 participant evaluation forms were returned. There was a significant increase in self-reported knowledge across all six facets of hydration care (p = 0.000). The majority of participants found the training enjoyable and useful, and expressed an expected change in their practice. Participants enjoyed the interactive components of the training. A lack of reflective practice skills meant participants were unable to reflect realistically about the hydration care provided in the home.

Conclusion: Focused training on hydration in the care home environment benefits from being interactive and experiential. Although such training can be effective in increasing staff knowledge, inclusion of skills in reflective practice is required if this knowledge is to be translated into practice.

Title: Room service in a public hospital improves nutritional intake and increases patient satisfaction while decreasing food waste and cost.

Citation: Journal of human nutrition and dietetics: the official journal of the British Dietetic Association; Jul 2018

Author(s): McCray, S; Mauder, K; Barsha, L; Mackenzie-Shalders, K

Background: Room service (RS) is a hospital foodservice model that is traditionally unique to the private sector. It allows patients to order meals compliant to their nutritional requirements from a single integrated menu at a time that suits them. Meals are prepared and delivered within 45 min of order. Following implementation in a private adult facility in 2013, Mater Group implemented the first RS in a public adult facility in Australia in 2016. In a
pre-post study comparing RS with a traditional foodservice model (TM), key outcomes were measured and analysed.

**Methods:** A retrospective analysis of quality assurance data audits in a pre-post study design was undertaken to assess patient nutritional intake, plate waste, satisfaction and meal costs before and after RS implementation.

**Results:** Comparison of nutritional intake between TM (n = 84) and RS (n = 103) showed statistically significant increases with RS in both energy (5513 kJ day\(^{-1}\) versus 6379 kJ day\(^{-1}\), \(P = 0.020\)) and protein (53 g day\(^{-1}\) versus 74 g day\(^{-1}\), \(P < 0.001\)) intake, as well as energy and protein intake as a percentage of requirements (64% versus 78%, \(P = 0.002\) and 70% versus 99%, \(P < 0.001\), respectively). Total average plate waste decreased from 30% to 17% (\(P < 0.001\)). Patient satisfaction indicated an improvement with RS, with 98% of patients scoring the service good to very good, compared to 75% for TM (\(P < 0.04\)). Patient food costs decreased by 28% per annum with RS.

**Conclusions:** This research provides insight into the benefits achievable with RS in the public hospital setting, confirming that a patient-centred food service model can cost-effectively improve clinical outcomes.

**Title:** Prognostic Value of the ESPEN Consensus and Guidelines for Malnutrition: Prediction of Post-Discharge Clinical Outcomes in Older Inpatients.

**Citation:** Nutrition in clinical practice : official publication of the American Society for Parenteral and Enteral Nutrition; Aug 2018

**Author(s):** Sánchez-Rodríguez, Dolores; Annweiler, Cédric; Ronquillo-Moreno, Natalia; Vázquez-Ibar, Olga; Escalada, Ferran; Duran, Xavier; Muniesa, Josep M; Marco, Ester

**Introduction:** Our study aimed to determine whether malnutrition and nutrition-related conditions using the European Society for Clinical Nutrition and Metabolism (ESPEN) consensus were associated with functional status, institutionalization, readmissions, and mortality in older patients at 3-month follow-up.

**Methods:** A cohort of 102 consecutive deconditioned patients was assessed at 3 months postdischarge from postacute geriatric care. Inclusion criteria were age ≥70 years, scores of Mini-Mental Status Examination ≥21/30, and being admitted for rehabilitation after an acute non-disabling disease. Malnutrition as defined by ESPEN consensus and nutrition-related conditions (such as frailty, sarcopenia, overweight/obesity, nutrient deficiency, and cachexia) was assessed, and related to postdischarge clinical outcomes at 3-month follow-up.

**Results:** Of 95 included patients (84.5 ± 6.5 years; 63.2% women), 31 had unintentional weight loss and 19 fulfilled malnutrition criteria defined by the ESPEN consensus. Nutrition-related conditions were frequent: 94 patients had frailty, 44 sarcopenia, 58 overweight/obesity, and 59 nutrient deficiency. Sarcopenia reduced functional status at 3-month follow-up (median difference: -25.5; 95% confidence interval (CI) -46.4 - -4.3, \(P = 0.008\)). Institutionalization was related to unintentional weight loss in univariate analysis (odds ratio (OR) = 3.9; 95%CI 1.3 - 12.4, \(P = 0.018\)). Meeting the basic ESPEN definition of malnutrition was related to institutionalization in univariate (OR = 3.4; 95%CI 1.0 to 11.3, \(P = 0.042\)) but not multivariate analysis, and was not significantly associated with readmissions or mortality at 3-month follow-up.

**Conclusions:** Further research is needed on the potential value of the ESPEN consensus and guidelines for malnutrition to identify older patients at risk of worse functional status, institutionalization, readmissions, and mortality at 3-month follow-up postdischarge.
Sources Used

The following databases are used in the creation of this bulletin: Amed, British Nursing Index, Cinahl & Medline.

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