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## The impact of malnutrition on health care use in hospital outpatients

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Malnutrition is common and costly, yet remains under-recognised and under-treated<sup>(1)</sup>. Previous studies have shown that the ‘Malnutrition Universal Screening Tool’ (‘MUST’)<sup>(2)</sup> predicts clinical outcome in hospitalised elderly<sup>(3)</sup>; however, the clinical consequences of malnutrition in outpatients has not been investigated.

One hundred and ninety four outpatients (age 54 (sd 17.19) years; 45% female) were screened for malnutrition using ‘MUST’ at Southampton General Hospital between July 2008 and June 2009. Healthcare use was collected prospectively during the subsequent 6 months (hospital admissions (planned and emergency), length of hospital stay and outpatient appointments). The patients attended a range of outpatient clinics (40% gastroenterology, 21% surgical, 17% medical, 8% oncology and 14% other). Eighteen percent were at risk of malnutrition (12% medium and 6% high risk). Age and sex were not significantly related to malnutrition risk.

Outpatients at risk of malnutrition experienced significantly more hospital admissions (planned and emergency) and had a significantly longer length of hospital stay (table). The use of healthcare resources progressively increased from low to medium and high risk of malnutrition (table).

	‘MUST’			P
	Low risk (n = 159)	Med risk (n = 23)	High risk (n = 12)	
All hospital admissions length of stay (days)	0.90 ± 3.9	2.04 ± 4.9	4.92 ± 8.1	0.007#
% Hospital admissions in 6 months	12.6%	26.1%	66.7%	0.000*
% Emergency admissions in 6 months	5.0%	8.7%	41.7%	0.000*
% Planned admissions in 6 months	7.5%	21.7%	25.0%	0.025*
% Outpatient appointments in 6 months	65.4%	82.6%	91.7%	0.054†

Med = medium risk; # = statistically significant ANOVA. Length of stay mean ± sd.

\* = Statistically significant; Chi<sup>2</sup> test; †statistically significant (P(trend) = 0.018).

The impact of malnutrition on admissions remained significant even when adjusted for age. Six month mortality was higher in at risk patients (5.7%) compared to low risk (2.5%) although this was not significant (P = 0.322, Chi<sup>2</sup>).

This study shows that malnutrition in general outpatients is associated with increased health care use. Identifying and appropriately treating malnutrition could potentially reduce health care costs.

1. Elia M & Russell C (2009) *Combating Malnutrition: Recommendations for Action*. Redditch, Worcs.: BAPEN.
2. Elia M (2003) *The ‘MUST’ Report*. Redditch, Worcs.: BAPEN (<http://www.bapen.org.uk>).
3. Stratton RJ *et al.* (2006) *Br J Nutr* **95**, 325–330.