stay in surgical patients in numerous meta-analyses of randomised clinical trials (Drovers *et al* 2011; Cerantola *et al* 2011). Its impact on hospital costs has already been assessed in gastrointestinal (GI) cancer surgery based on Swiss, US, Italian and German hospital costs (Mauskopf *et al* 2011; Chevrou-Séverac *et al* 2011; Braga *et al* 2005; and Senkal *et al* 1999). The objective of this study is to assess whether IN is a cost-effective option in hospitals of the British National Health System (NHS) for upper GI cancer patients undergoing surgery.

Methods Based on the Cerantola *et al* (2011) meta-analysis, the RR of complications of IN vs control were computed. Hospital cost and length of hospital stay (LOS) of upper GI cancer patients undergoing major surgery were retrieved from the HRG (healthcare resource group) database of 2010. Then an average cost per stay for patients presenting with post-surgical complications and without were computed. Two approaches to compute the difference in costs per patient were performed: one based on cost of stay related to the LOS of patients of each group (IN vs control); and another based on a weighted cost of stay link to the rate of patients with and without complications of each group.

Results The RR of complications was 0.69 (95% CI 0.58 to 0.83) for pre-operative use of IN, demonstrating a decrease in post-operative risk of complications due to the use of IN. When running cost-effectiveness analysis, the NHS recommends using the average cost per day of £675. This value was used into the LOS approach. The HRG costs of stay were calculated for different upper GI cancers (oesophagus, small intestine, stomach, duodenum, liver and pancreas) and different level of complications, ranging from £968 to £2395 per hospital stay. When considering the LOS approach, £1585 were saved per patient-stay. When considering the complication approach, savings reached £176 per patient for patients with oesophagus cancers, £201 for stomach and duodenum cancers, £394 for small intestine cancers, and £608 for pancreas cancer.

Conclusion Costs of IN are more than offset by the savings linked to decrease in LOS and to avoided costs of treatment for complications. Thus, as in the USA, Switzerland, Italy and Germany, in the NHS hospital setting, IN is a cost-effective and cost-saving nutritional intervention.

Competing interests H Chevrou-Severac Employee of: Nestle Health Science, L Weijers Consultant for: Nestle Health Science, I Eijgelshoven Consultant for: Nestle Health Science.

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PMO-043 OUTCOME OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY—HOW COMPLIANT WE ARE WITH BSG GUIDELINES?

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Introduction Maintenance of enteral nutrition is considered to be beneficial for patients in whom the oral access has been lost. For long term tube feeding, PEG (percutaneous endoscopic gastrostomy) placement is of recognised advantage. A significant number of PEG tubes continue to be placed in patients for whom the benefits are questionable which account for significant procedure related morbidity and mortality. A better understanding of patient selection, designated multi-disciplinary framework and compliance with BSG guidelines are thought to improve outcome and minimise morbidity and mortality.

Methods We evaluated our practice of PEG tube placement against BSG guidelines in terms of patient selection, assessment, outcome

and complications. It was a retrospective study. Medical record of patients who had PEG tube placement between February 2010 and March 2011 were studied. PEG related information was collected from endoscopy database and hospital electronic resources. Data were collected regarding pre-procedure clinical assessment, blood investigations, MRSA status, family involvement in decision making, underlying co-morbidities, post PEG care, early and late complications and 30 days mortality.

Results 52 patients aged 25–90 yrs (median age=78, F=28) were identified. 60% of the patients were assessed by a member of gastroenterology team prior to the procedure. Indications of PEG recorded were stroke (71%), pharyngeal cancer (10%), unsafe swallow (10%) and neurological condition (9%). Clotting was checked in 73% and MRSA status in 64% of cases. Family was involved in decision making in 73% of cases. 86% were reviewed by dietician pre or post procedure. 33% had early complications (within 1 week of the procedure, majority were pneumonia) while 12% had late complications (>1 week after PEG). 30 days mortality was 33% and 4% died within 2 days of the procedure. Overall compliance with BSG guidelines was unsatisfactory.

Conclusion PEG tube provides a durable access for enteral nutrition, whether or not it improves outcome, remains a matter of much debate. Guidelines have been developed by BSG to assist physicians in decision-making in order to minimise the morbidity and mortality associated with this procedure. A dedicated multi-disciplinary PEG team and better compliance with these guidelines would be an important strategy to improve outcome and minimise complications.

Competing interests None declared.

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PMO-044 MORTALITY POST PERCUTANEOUS ENDOSCOPIC GASTROSTOMY INSERTION: A ROOT-CAUSE ANALYSIS

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Introduction Meta-analysis has demonstrated a 19% 30-day mortality following Percutaneous Endoscopic Gastrostomy (PEG) insertion.¹ The 2008 National Confidential Enquiry into Patient Outcome and Death (NCEPOD)² retrospectively audited inpatient death, demonstrating poor patient selection and use of multi-disciplinary assessment. The figures demonstrated the need for endoscopy units to engage in regular audit of PEG insertion and suggested reviewing all cases of mortality within 30 days of procedure.

Methods A root-cause analysis of mortality after inpatient PEG insertion was undertaken from over 1 year from June 2010 to May 2011 at West Middlesex University Hospital, London.

Results 45 patients underwent PEG insertion with an average age of 72.66 years (range 33–100; 19 females; 26 males). Indications were neurological in 96% (43). Six were for PEG re-insertion following tube failure. Most were American Society of Anaesthesiologists (ASA) grade II (56%). The one ASA IV case was an intensive care unit inpatient. The 30-day mortality was 20%, with an average age of 82.9 years and average survival of 14.4 days. All indications for insertion were for poor swallow post stroke. The majority of patients were ASA-II. All causes of death were all attributed to pneumonia on their death certificates. None of the deaths were procedure related. However, these patients demonstrated multiple co-morbidities and a poor functional baseline level pre-procedure. 20

patients died within 365 days (44.4% 1 year mortality) with an average age at insertion of 81.8 years.

Conclusion The 30-day mortality rate in this study mirrors that found in previous published data, with all known deaths due to respiratory disease; none were found to be procedure related deaths. This is despite careful patient selection, assessment by a multi-disciplinary team and the application of other recommendations of the NCEPOD report. It would be prudent for further review and audit of careful selection of appropriateness for PEG particularly in cases with multiple comorbidities with consideration into the futility of the procedure. Thus patient selection for PEG insertion remains a difficult problem.

Abstract PMO-044 Table 1

ASA grade	Overall patients	30-Day mortality	1 Year mortality
I (normal healthy patient)	3 (6%)	1 (11%)	1 (5%)
II (mild systemic disease)	25 (56%)	5 (56%)	8 (40%)
III (severe systemic disease)	16 (36%)	3 (33%)	10 (50%)
IV (life threatening systemic disease)	1 (2%)	0 (0%)	1 (5%)
Total	45	9	20

Competing interests None declared.

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PMO-045 PERIOPERATIVE DIETETIC CONSULTATION LEADS TO IMPROVED NUTRITIONAL STATUS AT 2 WEEK FOLLOW-UP IN PATIENTS WITH OESOPHAGOGASTRIC CANCER

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Introduction Patients with oesophagogastric cancer are at high risk of malnutrition.¹ The aim of this study was to assess the effect of advice provided by a dietitian peri-operatively on nutritional status at first surgical follow-up. The period studied was prior to specialist dietetic services being funded, resulting in lack of capacity to see all patients referred.

Methods Consecutive records (n=60) of patients who underwent oesophagogastric resection between August 2010 and November 2011 and referred to the dietetic service were reviewed. Jejunally (n=19) and parenterally fed (n=4), palliative (n=3), stromal tumour resection (n=1), peri-operative deaths (n=1) and incomplete records (n=1) were excluded. Anthropometrics were collected on admission and at first surgical outpatient follow-up. Number of consultations and time spent with a dietitian was recorded. Data for patients referred but not seen was compared to those who received dietetic input. Effect was measured as percentage weight loss. Tests for normality were performed. T-test was used to determine significance.

Results 31 patients were included in the study. All were initiated on oral nutrition post-operatively. n=21 received dietetic input and n=10 did not. Patient characteristics were similar between both groups apart from tumour differentiation (p=0.046), sex (p=0.023) and weight loss on admission (p=0.148). Mean length of stay=12.8 days (SE 1.1) and time to follow-up= 22.8 days (SE 2.2) (p=ns). Weight loss percentage at follow-up between patients seen and not seen by a dietitian was 7.87 (SE 0.70) and 11.66 (SE 1.24) respectively

(p=0.008). Adjusting for sex, tumour differentiation and weight loss on admission did not effect the result (6.88 (SE 0.93), 11.49 (SE 1.07) p=0.005). In the intervention group mean reviews by a dietitian=2.4 (SE 0.3) and time spent=138 min (SE 14). Regression analysis showed a tendency for attenuation of percentage weight loss on increasing time with a dietitian (r=0.33; p=0.142).

Conclusion Dietetic advice peri-operatively significantly attenuates weight loss at first outpatient follow-up. This effect may improve with increasing time spent with a dietitian. The data supports the Improving Outcomes Guidance on access to dietetic expertise. Although not found in this study, malnutrition is known to increase readmission and hospital stay.²

Competing interests None declared.

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PMO-046 AUDIT OF A NEW PATHWAY FOR ENTERAL FEEDING HEAD AND NECK RADIOTHERAPY PATIENTS

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Introduction It is well recognised that Head and Neck Cancer (HNC) patients often “have problems with eating and drinking and a substantial proportion have to cope with tube feeding”.¹ With no national pathway, many units use gastrostomy tubes however, clinical indication and timing of placement are debated.² Due to gastrostomy tube complications, our unit routinely uses nasogastric tubes (NGT). Using data from a previous audit our centre developed a pathway for enteral feeding (EF) HNC radiotherapy (RT) patients.³ This pathway includes advice on enteral feeding in this patient group, specifically when and who to electively NG feed and guidance on selecting suitable patients for elective day-case NG placement. The pathway was launched in May 2011 and impact on length of stay (LOS) assessed.

Methods All patients with primary HNC treated with RT from 1st June to 30th September 2011 requiring EF were included in the audit. Details of anthropometry, day of RT NGT passed, LOS, number of NGT's required and nutrition related readmissions were collected.

Results 12 patients met the inclusion criteria; one was excluded from analysis as they were receiving long term gastrostomy feeding prior to RT. Details of the remaining 11 patients are detailed in Abstract PMO-046 table 1. Admissions >24 h occurred in two patients. One patient initially refused an NGT, subsequently needing admission for nutritional complications and an NGT. The second patient had laryngeal cancer, a diagnosis that doesn't normally require EF; therefore NG feeding was commenced due to unexpected late onset nutritional problems. Despite this using the pathway reduced the average LOS further to only 3 days.³

Abstract PMO-046 Table 1 (n=11)

Day-case	Overnight admission	>24 h admission	Refused NGT	Elective gastrostomy (pre-existing malnutrition)
3 (27%)	3 (27%)	2 (18%)	2 (18%)	1 (9%)