Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
received IORT with PE surgery. Findings are outlined in Table 1 below:

### Table 1 Use of PN in patients who have undergone PE and/or IORT.

| No. of patients | PE surgery only | PE surgery + IORT | p value* |
|-----------------|-----------------|-------------------|----------|
| 24              | 10.4 (SD 3.38)  | 15.5 (SD 5.22)    | <0.001   |
| 22 (52%)        | 22 (92%)        |                   |          |
| Mean operation time (hrs) | 11.0 (SD 3.70)  | 15.9 (SD 5.25)    | <0.05    |
| receiving post-operative PN (hrs) | 4.2 (SD 4.95)   | 12.4 (SD 8.43)    | <0.001   |
| No. patients who required PN 5 days | 18 (43%)        | 22 (100%)         |          |

*Significant differences (*p*<0.05), highly significant (*p*<0.001).

**Conclusions:** This retrospective evaluation of PN use in patients who have undergone PE surgery demonstrates that patients who have also received IORT are more likely to require PN for a postoperative paralytic ileus. Patients in this group also require PN for a statistically significantly longer duration than patients who undergo PE surgery without IORT. This need for PN also coincides with the significantly longer operation times. In conclusion, early postoperative PN should be reserved for patients who have undergone PE surgery with IORT. Those having PE surgery alone should be considered for PN after ≥ 5 days of no nutrition or in the presence of other risk factors.

**References**
1. Funder JA, Tolstrup R, Jepsen BN, Iversen LH. Postoperative paralytic ileus remains a problem following surgery for advanced pelvic cancers. J Surg Res. 2017;218:167-73.
2. Minnezhazi R, Chang GJ, Das P, Chandrakumar K, Tekkis P, Darzi A, et al. Intraoperative radiotherapy in colorectal cancer: Systematic review and meta-analysis of techniques, long-term outcomes, and complications. Surg Oncol. 2013;22(1):22-35.
3. Klek S, Forbes A, Gabe S, Holst M, Wanten G, Irtun Ø, et al. Management of acute intestinal failure: A position paper from the European Society for Clinical Nutrition and Metabolism (ESPEN) Special Interest Group. Clin Nutr. 2016;35(6):1209-18.

**THE IMPACT OF JEJUNOSTOMY FEEDING ON NUTRITIONAL OUTCOMES AFTER OESOPHAGECTOMY**

**S.J. Davies**, **S. Wheelwright**
1. Department of Dietetics/ SLT, University Hospital Southampton NHS Foundation Trust, Tremena Road, Southampton, SO16 6YQ, UK; 2. Health Sciences, University of Southampton, SO17 1BJ, UK

Oesophagectomy is the mainstay of curative treatment for oesophageal cancer; however nutritional status is compromised in the months and years post-operatively.1 Controversy surrounds the optimal route for post-operative nutrition support and there is wide variation in the use of feeding jejunostomy in different centres across the UK.2,3 The aim of this study was to evaluate whether patients who received jejunostomy feeding post-oesophagectomy had improved nutritional and clinical outcomes within the first post-operative year, compared to those without jejunostomy.

As part of a service evaluation, we collected data for all consecutive adults who underwent oesophagectomy for a cancer diagnosis within our centre between April 2016 and July 2019. Current practice within our specialist regional centre is the selective use of jejunostomy placement, primarily if there is concern of a post-operative complication which would delay establishing oral intake, such as anastomotic leak, or malnutrition (low BMI or significant weight loss) pre-operatively. All patients follow an established enhanced recovery protocol post-operatively, including early oral feeding in the absence of anastomotic leak. Clear fluids are initiated on post-operative day (POD) 2, free fluids on POD4 and a puree consistency diet on POD5, and for 2 weeks after discharge. All patients are prescribed 2x125ml high protein oral nutritional supplements per day (providing 600kcal, 36g protein). If a jejunostomy is inserted, enteral feeding is commenced on POD1 and increased gradually to meet full estimated nutritional requirements by POD3–4. Once established on a puree diet orally, enteral feeding is adjusted to supplementary overnight feeding providing approximately 50% requirements on hospital discharge.

The study was registered with the Trust’s Clinical Effectiveness Department (Audit number SEV/0275), and approved by the University Ethics Committee (ERGOID ID 62607). A total of 165 patients who underwent oesophagectomy within the study period were included and analysed in two groups according to whether they received a jejunostomy tube or not. N=24 (14.5%) patients received jejunostomy feeding, whilst n=141 patients did not. A power calculation showed this sample size was adequate to detect statistical difference in mean percentage weight loss at 6 months. There were no significant differences in baseline characteristics between the groups. Patients with feeding jejunostomy lost significantly less weight at both 6 and 12 months post-operatively compared to those without jejunostomy (p<0.001 and p=0.001 respectively). These results remained statistically significant in a multiple regression model, when controlled for age, gender, pre-operative T and N staging and adjuvant treatment (p<0.001 and p=0.03 respectively). The jejunostomy group experienced higher incidence of anastomatic leak (p=0.02) and serious complications (Clavien-Dindo ≥3b) (p=0.03), as indicated by the reason for jejunostomy insertion. Consequently the jejunostomy group had a significantly longer length of hospital stay (LDS) (p=0.001). The mean calorie intake provided by the jejunostomy alone on discharge was 18.1 kcal/kg/day and 0.7 g/kg/day protein. Median length of time patients required home enteral feeding (HEF) was 10 weeks (IQR 3-20 weeks) after discharge. N=4 (16.7%) patients experienced minor jejunostomy tube-related complications, only one of which affected clinical management where the tube leaked after insertion, so continued HEF was not possible. N=16 (43.2%) patients in the non-jejunostomy group were readmitted within 90 days of surgery due to inadequacy of oral nutritional intake and weight loss as a factor for the readmission. None of the readmissions in the jejunostomy group were related to nutrition. N=9 (6.4%) patients in the non-jejunostomy group subsequently required ‘rescue tube feeding’ within 90 days of surgery, and n=12 (8.5%) within the first year post-operatively.

Despite being more nutritionally compromised pre-operatively and having a longer LOS, patients who received jejunostomy feeding lost significantly less weight at 6 and 12 months post-operatively compared to those without feeding jejunostomy. Use of short-term supplementary jejunal feeding in addition to oral intake after hospital discharge is beneficial for maintaining nutritional status, with low risk for serious tube-related complications. We suggest a randomised-controlled trial to confirm these findings.

**References**
1. Baker M, Halliday V, Williams RN, Bowrey DJ. A systematic review of the nutritional consequences of oesophagectomy. Clinical nutrition. 2016;35(5):987-94.
2. Tham JC, Dovell G, Berrisford RG et al. Routine use of feeding jejunostomy in oesophageal cancer resections: results of a survey in England. Diseases of the Esophagus. 2020;33(4):doz075.
3. Ireland P, Jaunoo S. Feeding jejunostomy in upper gastrointestinal resections: a UK-wide survey. The Annals of The Royal College of Surgeons of England. 2020(0);1-5.
4. Clavien PA, Barkun J, De Oliveira M et al. The Clavien-Dindo classification of surgical complications: five-year experience. Annals of surgery. 2009;250(2):187-96.

**IMPACT OF IMPLEMENTING A RAPID ACCESS DIETETIC SERVICE TO CARE HOMES DURING COVID-19**

**S. Chervenkova**, L. Jones, R. Huntriss, V. Borgognoni. Oiviva UK Ltd, Runway East, 20 St Thomas Street, London, SE1 9RS

**E-mail address:** s.chervenkova@nhs.net (S. Chervenkova).

**Background:** In the UK, 38% of people residing in care homes are estimated to be at high risk of malnutrition1 and it is known now that nutritional status can further be negatively affected by COVID-19 not only directly through medical complications but also social factors such as social isolation, staffing issues, increased anxiety and low mood2. Our aim is...
to evaluate the clinical and cost effectiveness of direct dietetic input (Rapid Access Dietetic Service) to care homes during the COVID-19 pandemic.

**Methods:** During the first wave of the Covid-19 pandemic, a rapid access service to support care homes was set up, accepting referrals directly from the care home staff and offering a remote dietetic assessment within 1 week of referral. Patients at high risk of malnutrition (on ONS) were followed up as part of a 12-week care pathway. The 12-week pathway consisted of initial and last telephone/video consultation by the dietitian and monthly telephone follow ups in between by the dietetic assistant. Care home staff were provided remote training on ‘Food First’ malnutrition management and ONS prescribing. Outcomes audited were MUST, clinical outcomes (number of falls, pressure sores, chest and UTI infections, hospital admissions, A&E attendance in the last 3 months) pre and after 12-week pathway. Cost benefit analyses were performed on both clinical outcomes and ONS changes. Service evaluation was done by requesting GP / care staff and community dietitians’ feedback.

**Results:** 54 patients were referred by the care homes staff/GP, 24 of those because of medium/high risk of malnutrition, 30 referred for ONS review. Out of the patients who were medium/high risk (n = 24) and were onboarded onto the 12-week care pathway, the number of patients with MUST of 0 (low risk) increased 2.3 times and patients with MUST of 1 (medium risk) increased 2.3 times and patients with MUST of 2 or above (high risk) declined by half after the 12-week care pathway. Cost benefit analysis on clinical outcomes showed combined estimated cost savings of £26,061 (Table 1). Out of the patients on ONS, 11 prescriptions were changed, 5 were stopped, 13 were continued resulting in a total ONS annualised savings of £12,753 / £425 per patient. The service was evaluated by the community dietitians, care staff and GPs and positive feedback was provided.

**Conclusion:** The new rapid access service for care homes resulted in residents being seen quickly and appropriately treated for malnutrition where identified. The service also resulted in significant cost savings for ONS prescriptions and avoidance of healthcare costs associated with malnutrition. Continuation of this new service model should be considered to reduce the incidence of malnutrition and effectively manage those identified as malnourished.

**References**
1. Nutrition Screening Survey in care Homes in the UK: A report based on the amalgamated data from the four Nutrition Screening Week surveys undertaken by BAPEN in 2007, 2008, 2010 and 2011 C A Russell and M Elia on behalf of BAPEN and collaborators
2. Azzolini D, Saporiti E, Proietti M, Cesari M. Nutritional considerations in frail older patients with COVID-19. The journal of nutrition, health & aging. 2020 Jul;24:696-8.
3. National Schedule of Reference Costs 2017/2018
4. Dealey C, Posnett J, Walker A. The cost of pressure ulcers in the United Kingdom, J Wound Care. 2012 Jun;21(6):261-2, 264, 266.
5. British National Formulary – National Institute for Health and Care Excellence - https://bnf.nice.org.uk/

### Table 1 Estimated annual cost benefit of improved clinical outcomes and reduction in malnutrition risk.

| Outcome measured | At initial assessment | At discharge | Estimated Cost saving |
|------------------|-----------------------|--------------|----------------------|
| Infections (n in last 3 months) | 5 | 0 | £5195 (£1021 each)
| Falls (n in last 3 months) | 4 | 0 | £4424 (£1106 each)
| Pressure sores (n in last 3 months) | 3 | 0 | £3642 (£1214 each)
| Hospital admissions (n in last 3 months) | 8 | 0 | £12,800 (£1600 each)
| ONS cost (£) | 27,772 | 15,019 | £12,753 |
| Total | £38,814 |

**Discussion:** Despite being an existing service, significant adaptations were made in order to continue providing care throughout the COVID-19 pandemic. All interactions and engagement with GPs and care home staff were conducted remotely in place of the usual in-person service. Despite this change, marked improvements in patient malnutrition status were seen during the 12-week care pathway. Cost benefit analysis showed a combined annualised cost saving of £38,814 during the 6-month intervention from the ONS changes and clinical outcomes. This equates to an annualised cost saving of £77,828 and £718.7 per person referred. The service was highly valued by the care home staff, GPs and community dietitians as evidenced by the positive feedback received. Limitations include other possible factors may have influenced the results e.g. medications/other HCP involvement. Annualized savings for ONS changes and clinical outcomes were estimated based on savings achieved in the 6 months over the service was running. The cost of dietitian was not included as a pre-existing service was altered during the pandemic months prioritizing care homes.

**AN ELECTRONIC NASO-GASTRIC TUBE PATHWAY, INCORPORATING A CLINICAL DECISION SUPPORT TOOL, IMPROVES PATIENT SAFETY AND REPORTING**

M. Baker 1, E. Birkin 2, R. Pochiraju 3, D. Rochell 4, C. Marshall 5 1 Nutrition & Dietetics, University Hospitals Of Leicester NHS Trust, LE1 5WW; 2 Safer Surgery, Quality Improvement, University Hospitals Of Leicester NHS Trust, LE1 5WW; 3 Critical Care, University Hospitals Of Leicester NHS Trust, LE1 5WW; 4 Hospital Development, University Hospitals Of Leicester NHS Trust, LE1 5WW; 5 Deputy Medical Director, University Hospitals Of Leicester NHS Trust, LE1 5WW

Due to the ongoing patient safety concerns arising from misplaced nasogastric tubes (NGT), NHS Improvement requested assurance from hospital trusts that all safety critical requirements for placement checks are in place. A never event in 2020 identified the need to improve compliance to documentation of safety critical requirements. Critical Care routinely use x-ray confirmation for initial placement checks, accompanied by a paper based LocSSIP modified to include the 4 point criteria for x-ray reporting. Other clinical areas were required to use a case note sticker documenting placement and initial confirmation (by pH or X-ray) and a paper careplan for ongoing placement confirmation. Previous audits identified poor compliance to documentation (table 1) despite local policy reflecting national standards.

### Table 1 Compliance to NGT safety criteria reporting

| Documentation: | Prior to implementation of eNGT | eNGT Reporting |
|----------------|--------------------------------|----------------|
| NGT Insertion | Non Critical Care n = 66 | Critical Care n = 25 |
| Initial gastric placement/X-Ray documented | 22(33%) | 9 (36%) |
| Where X-ray reported (4 criteria point criteria documented) | 51 (77%)[17 (26%)]34 | 9 (36%)[9 (36%)]N/A |
| Ongoing daily placement checks YES every 24hr | 19 (42%)[45%] | 46 (66%) |
| N/A13% (23%) |

| Documentation: | Prior to implementation of eNGT | eNGT Reporting |
|----------------|--------------------------------|----------------|
| NGT Insertion | Non Critical Care n = 68 | Critical Care n = 56 |
| Initial gastric placement/X-Ray documented | 45 (66%) | 15 (27%) |
| Where X-ray reported (4 criteria point criteria documented) | 46 (77%)[n = 68 = N/A6] | 34 (77%)[37%] |
| Ongoing daily placement checks YES every 24hr | 10 (17%)[60%]/14% (23%) | N/A13% (23%) |

a Completion of LocSSIP assessed.
b Ryles drainage NGT only require documentation of insertion.