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VIRTUAL PUMP TROUBLE SHOOTING FOR HOME PARENTERAL AND ENTERAL NUTRITION PATIENTS

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Community nursing support is provided for patients receiving Enteral, Parenteral and Intravenous Therapies in the United Kingdom and Ireland by a homecare company with a dedicated team of Advice Line (AL) nurses, supporting patients and nurses during the 'out of hours' periods. One aspect of this role is to help patients trouble shoot infusion devices via telephone call; to prevent interruption to their prescribed therapy. A Virtual Remote Assistance (VRA) process was developed using existing video calling technology to enable the nurse to visualise the infusion device and improve troubleshooting success rates and prevent hospital admission due to therapy interruption.

When planning the VRA processes, we had three key aims for the initiative. Firstly, to reduce the potential of negative clinical impact due to missed or delayed treatments, as a result of the Advice Line Nurse unsuccessfully trouble shooting the infusion device over the telephone. Secondly, video calling technology has become increasingly familiar to the public as a result of the COVID 19 pandemic. We were keen to use this upturn in technology usage to provide an additional support option for patients to access. Finally, to reduce the number of infusion devices inappropriately returned for inspection, as having pumps held in the service pool reduces the number available for distribution and it has a cost implication.

During Q1 of 2021, the AL team took 485 incoming calls related to patient's infusion devices, of these, only 8.2% (N=40) calls needed to be escalated to Virtual Remote Assistance. Of those offered VRA, 30% of patients (N=12) declined participation.

Of those who declined 7 did not have a device capable of completing the VRA, 3 declined with no reason and 2 could not make the connection work on their device.

The AL nurses were unsuccessful in resolving the issue with 13 patients (32.5%) who were then offered care advice as per protocol. Following clinical assessment 6 patients were advised to attend hospital and 7 were able to be managed at home until a replacement device could be delivered to them, this resulted in partial missed doses for all 7 patients.

The AL nurses were successful in troubleshooting the infusion devices in 15 instances (37.5%) after converting to VRA. The successful trouble shooting of the infusion devices meant that 15 patients were able to carry on their treatment at home uninterrupted and avoiding potential hospital admission for fluid management. Trouble shooting these infusion devices and enabling the patients to continue their infusion uninterrupted has improved their experience and health outcomes.

As a Homecare provider, our aim is to support patients with their long-term conditions at home. The introduction of this new service area has meant that we have been able to ensure that more patients can continue to receive their therapies safely at home without disruption.

Given the climate of a global pandemic it is important that the homecare provider has been able to prevent 15 hospital admissions; which not only has protected our patients but has also supported the NHS in reduce the demand for services and costs.

NOMOGRAM RELIABILITY FOR PREDICTING SURVIVAL IN PATIENTS WITH INCURABLE CANCER REFERRED FOR HOME PARENTERAL NUTRITION

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In the presence of bowel obstruction, enterocutaneous fistula, short bowel, or severe mucosal disease, patients with incurable cancer are increasingly being referred for consideration of home parenteral nutrition (HPN). The decision to commence such treatment largely relies on expert opinion rather than robust data showing survival outcome. To address this shortcoming, a nomogram to predict median survival length in palliative cancer patients treated with HPN has been developed and validated.¹ The nomogram is based on Glasgow prognostic score (CRP & albumin), primary cancer, metastases and Karnofsky performance status. The aim of this study was to assess the reliability and clinical value of the nomogram. The nomogram was applied ambidirectionally to adult patients referred for palliative HPN between 1/3/15 and 7/7/20 at one tertiary HPN centre. Patients receiving chemotherapy or radiotherapy at the point of referral or during HPN treatment, and patients with neuroendocrine tumours were excluded. Intraclass correlation coefficient (ICC) was used to measure the reliability of the nomogram.

35 patients were identified. Eight patients were excluded due to commencing chemotherapy. Of the 27 remaining patients, 15 (66%) were female. 16 (59%) patients had primary GI cancers, six (22%) ovarian, and five (19%) other forms of cancer. Overall mean survival was 114 days (22–433) versus 104 days (30–200) for predicted survival (p=0.746). The nomogram over predicted survival in 59% of cases and under predicted in 33%. The predictions for seven patients (26%) were within 20% of their actual survival, 12 patients (44%) were within 50%, and the remaining patients between 50 and 248%. The ICC was 0.327 with a confident interval of -0.64–0.627, indicative of poor reliability.²

Although the *p* value suggests no significant difference between predicted and actual survival length, our study is limited by the small sample size. We considered a 20% variance between predicted and actual survival clinically acceptable; only a quarter of patients were within this range. Our study therefore does not support the use of the nomogram to predict survival in patients referred for palliative HPN and we should continue to use clinical acumen when considering such treatment. Further multi-centre research with larger sample sizes is needed before applying the nomogram to clinical practice.

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THE USE OF TECHNOLOGY TO AID THE FORMATION OF HOME PARENTERAL NUTRITION CONTINGENCY PRESCRIPTIONS

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The COVID-19 pandemic represented a substantial risk to the continued supply of compounded home parenteral nutrition (HPN) to patients with intestinal failure. NHS England requested that all patients receiving HPN have a contingency prescription that could be supplied if their homecare provider weren't able to supply their compounded prescription. The formation of contingency prescriptions and subsequent communication of the plan to both the patients and those involved in their care, was a significant undertaking. Could technology aid in the formation of the contingency prescriptions, improve communication between members of the multidisciplinary team (MDT) and standardise the accompanying written administration plan?

An existing spreadsheet developed in-house was used which contained all the commercially available multi-chamber bags (MCBs) and terminally sterilised fluids (TSFs) on the market. A deficits tab was added to the workbook that calculated the weekly differences between the patient's usual compounded prescription and a proposed contingency prescription. Drop down menus auto populated the contents of the MCBs and TSFs into