OWE-018 GENERATING BETTER INFORMATION TO INFORM SERVICES FOR ALCOHOL-RELATED LIVER DISEASE: THE CONNECTED HEALTH CITIES PROGRAMME

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Introduction The rising burden and high mortality for alcohol-related liver disease (ARLD) is well-recognised in the UK. Efforts to plan adequate liver and alcohol services and to identify unwarranted variation are limited by lack of robust, actionable information about true workload and real-world risk-adjusted outcomes. We report an informatics programme (Connected Health Cities, Northwest Coast) that is generating new analytical resources to support services.

Methods A healthcare data lab. team of data scientists is linked to a secure 'data ark' hosting regional commissioning datasets (Admitted Patient Care, A and E, Outpatients, fiscal years 14/15 to 16/17) and is working with clinical teams to construct novel ways to interrogate data ('algorithmic approach'), model outcomes and unexplained variation and visualise data (small area mapping). Entire patient journeys were linked, to identify ARLD cases and their all-cause emergency admissions (categorised by diagnosis), capture phenotyping flags (e.g. first occurrence of codes for varices), pre-admission events and outcomes (e.g. in-hospital mortality; all-cause 30 day readmission). Maps were used to communicate catchment areas and identify admission 'hot spots'. Site-level benchmarking reports were shared with teams at 7 hospitals.

Results Compared to the standard approach for capturing cases (i.e. primary diagnosis at discharge; 6 specific ICD-10 codes; 'ARLD-Primary' Method), the algorithmic approach (ARLD-Alg) identified 9 other patterns of primary and secondary diagnoses with >60 primary ICD-10 codes consistent with emergency care for ARLD. **Activity:** Across 7 NHS Trusts, estimates of total 3 year activity for ARLD increased from 3185 (ARLD-Primary) to 5912 (ARLD-Alg) for admissions, 35 840 to 56 010 for bed days (equivalent to 50 extra in-patient beds), and 485 to 665 for in-hospital deaths. **Case-mix** for the 2 approaches was similar (mean age: 51.6 v 51.4; males 63.2 v 63.6%; Charlson Index: 1.6 v 1.7) but ARLD-Alg captured more shorter stays (median LoS: 7 v 6 days; % short stay [0–2 days]: 12.1 v 16.5). Varices cases account for 15%–20%.

Outcomes Crude mortality across hospitals varied significantly by method ARLD-Primary: 13.0%–21.7%; ARLD-Alg: 10.2%–14.5%. All binary logistic models identified male patients were at lower risk of in-hospital death than females (Adj OR: 0.70). Treatment provider was a predictor of outcome.

Conclusions Standard approaches to analysis of administrative data under-estimate the burden of unplanned care for ARLD (by up to 60%) and have dubious value for service planning or benchmarking. More sophisticated clinically-driven Methods can leverage greater value from routine data. These novel tools are scalable for nationwide deployment and have potential to inform policy and support data-driven service improvement.

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OWE-035 AMBULATORY LIVER SERVICES AVOID ADMISSIONS AND REDUCE LENGTH OF STAY WITH HIGH PATIENT SATISFACTION

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Introduction Inpatient bed pressures in the NHS mean that ambulatory service development is needed. Day case and short stay units developed for elective surgery in our trust were not suited to the needs of patients with liver disease. Services managed through semi-acute pathways Resulted in unpredictable waiting times, unplanned admissions and poor patient experience. Following a pilot project in 2016–17, we describe the 2nd phase in implementing ambulatory care services utilising a re-commissioned 4 bed ward bay in a large liver centre. Primary aims were admission avoidance (AA) and inpatient bed day savings. Secondary aims were to achieve >70% occupancy, deliver excellent patient experience, provide facilities for earlier discharge (ED).

Methods We identified initial criteria for service delivery through a specialist nurse led unit. Patient episodes were coded to identify procedures, infusion treatments and AA/ED attendances. Safety was assessed by procedure complication rates and patient readmission rates. We used Survey Monkey® to assess patient experience. Bed savings were identified from historical length of stay data in 2015–16.

Results Between 1 st May–31 st Dec 2017 there were 705 attendances. Of these: 371 large volume paracentesis, 49 urgent liver biopsy, 80 infusions, 46 ascites follow-up and 159 AA/ED indications. Based on a 2.5 day admission for paracentesis, 927 inpatient bed days were saved for this indication and at least 420 urgent, semi-acute or unplanned admissions were avoided. Utilisation increased from 68 attendances/month to 115 in Dec 2017. The unit reached 70% occupancy at 3 months. By Dec 2017 occupancy was >90%. There were 3 readmissions and 1 procedure complication. 95% of patients thought that explanations regarding procedure were very clear and 95% that they were well informed throughout the day. 95% would recommend the service to friends and family.

Conclusion A clear benefit to patients and the service was seen during the first 6 months of opening this unit. We continue to identify indications for use. Other benefits include a growing list of clear admission avoidance/early discharge for other indications. Bed day release has helped patient flow for admissions. Costs incurred in developing a specialist nursing team are offset by their other roles and transfer of ward nursing costs. Unpredicted benefits include a contribution to an overall improvement in ward quality metrics, and release of junior doctor time to direct inpatient management.

ADWE-04 RIBAVIRIN FOR TREATMENT OF CHRONIC HEPATITIS E IN TRANSPLANT RECIPIENTS – EXPERIENCE FROM OUR CENTRE

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Introduction Hepatitis E infection usually causes self-limiting hepatitis in immunocompetent patients. In patients who have

received solid organ or bone marrow transplants and take immunosuppressive drugs, a chronic or persistent hepatitis can develop defined by viremia for greater than 3 months. Spontaneous clearance can occur with reduction of immunosuppressive load. Failing this, there is evidence these patients can be successfully treated with ribavirin. The goal is sustained viral response (SVR) with undetectable Hepatitis E RNA in blood and stool for 6 months after treatment. A recent analysis of 69 patients with solid organ transplants reported SVR of 78%. Some success has also been seen in bone marrow transplants. We aim to present our experience of treating persistent Hepatitis E infection with ribavirin.

Methods Retrospective analysis of clinical records and the pathology database.

Results Following a screening program at the Queen Elizabeth Hospital, Birmingham we have treated 11 transplant recipients with ribavirin over the last 18 months. Transplant types included 4 liver, 3 kidney, 1 heart and kidney combined and 3 bone marrow. The median age of the cohort was 44, patients were a median of 2 years out from transplant and taking a median of 2 immunosuppressants. ALT was raised in all patients, median value 155 (46 to 599). Ribavirin treatment was given for 12 weeks and continued if stool remained RNA positive at week 12; the median course was 14 weeks. Ribavirin was generally well tolerated although one patient had a treatment break at 2 weeks due to diarrhoea and vomiting; 2 needed EPO support. SVR was observed in 10/11 patients (91%) of whom 9/10 (90%) have continued to show SVR until the present time (mean 2.2 months). ALT responded in all patients, median value 20 (11 to 31). One patient did not achieve SVR and relapsed at 3 months; one patient who did achieve SVR relapsed at 10 months. 2 bone marrow recipients had received high dose steroids for graft versus host disease (GvHD) and liver biopsy was undertaken to distinguish Hepatitis E from GvHD: in both cases the biopsy showed a non-specific chronic hepatitis in keeping with Hepatitis E.

Conclusions Our Results show SVR of 91% with ribavirin in persistent Hepatitis E infection in a diverse cohort with different types of transplant including bone marrow. The fact that all patients had abnormal ALT means that persistent Hepatitis E must be considered as a cause of raised liver enzymes in transplant recipients. Of particular interest is the need to distinguish GvHD from persistent Hepatitis E in bone marrow recipients as the therapeutic approaches are fundamentally different and increasing doses of steroids, and rituximab in one case, led to worsening viral loads in our cohort. Ongoing follow-up will take place in our cohort and look for late relapse.

ADWE-05 PRE-EMPTIVE TIPSS IMPROVES CLINICAL OUTCOMES IN PATIENTS WITH VARICEAL HAEMORRHAGE: A RETROSPECTIVE COHORT STUDY

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Variceal haemorrhage is a medical emergency associated with a 30 day mortality of 15% and a re-bleeding rate of 26%. If there is failure to control bleeding endoscopically salvage TIPSS is reported to control bleeding in 90%–100% of cases,

with re-bleeding rates of 6%–16%. However mortality remains high. Approximately 20% of patients are 'high risk'; here early or pre-emptive TIPSS, before treatment failure (up to 5 days post bleed), can significantly reduce morbidity/mortality. A recent multicentre study has shown that pre-emptive covered TIPSS was associated with good outcomes but poses significant challenges in the 'real world' situation. We evaluated the clinical outcomes of patients undergoing a covered TIPSS following an acute variceal bleed and subsequent admission to the Intensive Care Unit with focus on pre-emptive TIPSS strategies.

Method We used the CRIS Radiology Information System to construct a database of all patients undergoing a TIPSS for variceal haemorrhage at between 2013 and 2016. For each patient we collected a wide range of data, which were analysed using SPSS (SPSS Inc. Chicago IL, USA) and expressed as means±SD. Mortality data were analysed using the Kaplan-Meier Method.

Results We studied 96 patients with a mean age 51.0±12.1 years, M:F ratio (67:29), alcohol related liver disease (59.4%), MELD score 15.8±6.8, and follow up 25.4±18.3 months. All TIPSS procedures were successful, and indication was as salvage (42%), pre-emptive (44%), and secondary prevention (14%). Initial management involved band ligation in combination with vasoconstrictors and/or Sengstaken-Blakemore Tube in all cases. Patient mortality at 6 weeks, 6 months, 12 months and 24 months was 19%, 24%, 30% and 34% respectively. MELD score >15 was significantly associated with mortality following multivariate analysis. Six week mortality was significantly higher with salvage TIPSS compared to pre-emptive strategy (33% versus 9%, $p<0.05$), even after controlling for MELD. There was no difference in mortality between pre-emptive and secondary prevention strategies. The overall re-bleeding rate was 2%.

Conclusion The outcomes of patients admitted to ICU following a variceal bleed are good and comparable to published literature. This is probably a reflection of high-standard ICU care. Pre-emptive TIPSS up to five days following the index variceal bleed Results in significantly better outcomes than salvage TIPSS, with mortality comparable to TIPSS for secondary prevention. However, the currently hub and spoke model of TIPSS services in the UK is unable to accommodate a pre-emptive strategy in all region

PWE-073 SPLEEN STIFFNESS VIA ACOUSTIC RADIATION FORCE IMPULSE IN HIV PATIENTS WITH NON CIRRHOTIC PORTAL HYPERTENSION

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Introduction Several HIV centres describe small cohorts of patients with non-cirrhotic portal hypertension (NCPH). Didosine (ddI) exposure has been associated and the optimal monitoring and management of these patients remains unclear. Non-invasive assessment of the spleen is now being utilised to assess splenic stiffness in cirrhotic portal hypertension and predict outcomes. This technique has not previously been studied in patients with HIV and NCPH.

Methods Acoustic Radiation Force Impulse (ARFI) elastography was performed using Philips EPIQ7TM to simultaneously assess