to 12.3 ± 1.56), but reduced the surface density to 5.25 ± 0.47 ($p < 0.01$) i.e. reduced to 43%.

Conclusion Thus even a brief exposure to oxygen stress will result in the diminution of KCa3.1 on endothelial surface, and this may have implications for the ability of arterioles to dilate.

REFERENCE

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11

UPTICK/DOWNTICK – THE FUTURE OF MORBIDITY AND MORTALITY MEETINGS

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Introduction Morbidity and mortality (M and M) meetings are a national requirement for all departments in hospital. While they should confer improvement in education and patient care, they often ‘lack defined structure, resource support and...heterogeneity in case evaluation’.¹ UK critical care has an embedded routine audit data collection on outcomes which is exported to a central body, Intensive Care National Audit and Research Centre (ICNARC), for cleaning and analysis. This data is submitted monthly but is returned on a quarterly basis preventing the timely identification of deaths or survivals that are unexpected (based on case-mix). In critical care, where the expected mortality is high, attention is fatigued if all mortality is reviewed and a more specific approach is required.

A fundamental prerequisite for a good M and M meeting is appropriate, targeted case selection. Currently, time is wasted reviewing cases that are selected without systematic focus on ‘important variation’, so contemporaneous feedback on care is lost and learning and engagement are diminished. To combat this, we have developed a timely, targeted and transformative M and M meeting based on data-driven case selection.

Methods

- Using code in R to generate an automated variable life-adjusted display (VLAD) chart using near real-time routine data from our electronic health record. This reveals the high yield outlying ‘uptick/downtick’ patients (patients who survived and should have died and vice-versa) (figure 1).
- Identifying crucial learning points from the clinical documentation of those selected ‘uptick/downtick’ patients using a specially developed Intensive Care Unit Structured Case Note Judgement Review format.
- Presentation of these targeted cases in a structured multi-disciplinary setting with key personnel highlighting the impact of timely narrative feedback, promoting staff engagement and morale and encouraging the growth of a proactive culture of safety and quality.

Results The VLAD cumulatively charts the effect of each individual admission using the ICNARC generated probability of death. Each death represents a ‘downtick’ in the plot and each survivor represents an ‘uptick’. When a patient predicted to survive dies, then the downtick will be prominent (conversely a patient who survives despite a high predicted mortality will make a prominent uptick).

Abstract 11 Figure 1 A VLAD to show haematology and non-haematology mortality on ICU

Conclusion Our M and M model is an original in-depth and specific data mine of critical care patient morbidity and mortality. This unique process seeks to provides an enabled and focussed method of case selection and emphasise the potential marginal gains that can be made in patient care. Over time, it will improve future clinical decision making and therefore patient outcomes.

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12

POTENTIAL COST-EFFECTIVENESS OF SPECTRAL PHOTON-COUNTING COMPUTED TOMOGRAPHY (SPCCT) VERSUS CT COMBINED WITH CT ANGIOGRAPHY (CTA) IN THE IDENTIFICATION AND TREATMENT OF ISCHAEMIC STROKE PATIENTS IN THE UK

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Introduction In current care, eligibility for thrombolysis or mechanical thrombectomy as acute stroke treatments is based on imaging (CT and CTA), time since onset and patient history. Thrombectomy will be routinely commissioned by NHS England provided it can be achieved within 6 hours of the onset of stroke. In case advanced imaging indicates salvageable brain tissue beyond the 6 hour window, thrombectomy will be commissioned up to 12 hours after stroke onset. SPCCT is an emerging technology expected to have an increased resolution. Besides identifying ischaemic stroke patients, SPCCT is expected to provide information about the presence of salvageable brain tissue and, in turn, identify those who are likely to benefit from thrombectomy beyond 6 hours. The aim of this study was to investigate the potential cost-effectiveness of SPCCT (versus CT +CTA) in identifying and treating ischaemic stroke patients in the UK.

Methods A decision-analytic model built on a decision tree and a Markov trace was developed. A hypothetical cohort of suspected stroke patients aged 74 was modeled (first stroke ever). Costs, outcomes and probabilities were obtained from the literature. Outcomes of the model included costs, life-

years, quality-adjusted life-years, and incremental cost-effectiveness ratios. Univariate and probabilistic sensitivity analyses were performed.

Results Three scenarios were simulated in which the proportion of patients referred to thrombectomy after 6 hours was varied from 5%, to 10% and to 15% with SPCCT while it remained constant to 0% with CT-CTA. Three levels of SPCCT accuracy were simulated (perfect positive predictive value (PPV) (100%), intermediate PPV (78.1%), and low PPV (46.9%)). Over the three-month and lifetime horizons, all SPCCT-based scenarios improved QALYs and LYs compared to CT-CTA. Based on the currently used estimates, the probability that SPCCT is cost-effective at a willingness-to-pay threshold of £10 000 per QALY is above 50% in all scenarios.

Conclusions Based on preliminary results, replacing CT-CTA with SPCCT to identify and treat ischaemic stroke patients beyond 6 hours may be good value for money. However, additional data regarding clinical outcomes following SPCCT based strategies are needed before the cost-effectiveness can be fully assessed.

13 AUDIT OF A NEWLY DEVELOPED AMBULATORY CARE SERVICE AT DIANA PRINCESS OF WALES HOSPITAL GRIMSBY UK

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Introduction The aim of the ambulatory care unit is to enable patients to be assessed, observed, diagnosed and treated without the need to be admitted to hospital and meeting their clinical needs by greater consistency of care through reduced clinical variability and improved patient experience, which can potentially reduce the number of clinical admissions, reduce time spent in hospital and helping to reduce overcrowding in the Emergency Department. We looked at performance of newly developed ambulatory care service at Diana Princess of Wales Hospital over 30 days period.

Methods Ambulatory care patients were selected who attended the service from 1st of October 2017 to 30th of October 2017. Information was collected by looking at the ambulatory care record spreadsheet, medical notes, discharge letters and hospital ambulatory care data. Service impact was analysed by numbers of service consumers, source of referral, impact on Accident and Emergency four hours target, appropriateness of referral, zero day discharges, length of stay for inpatients and diagnosis at discharge.

Results Patients were admitted to ambulatory care using the AMBS criteria and different ambulatory care models. Over the 30 day period, 260 attendances were recorded (male 123, female 137) which was 20% of the total medical admissions. 8% of the referrals were from the Accident and Emergency Department. The majority of patient were referred as chest pain and shortness of breath, the most common diagnosis being musculoskeletal chest pain. Other diagnoses included cellulitis, pulmonary embolism, respiratory tract infection, angina and urinary tract infection. More than 92% of the patients were discharged same day. Only 8% of the patients were admitted to the Acute Admission Unit and among these 50% of the patients were referred inappropriately. 16% of patients were classed as re-attendees, mainly for treatment with iv antibiotics for cellulitis or pending next day investigation. The

percentage of zero day discharges increased to 15% and there was an improvement in the Accident and Emergency four hour target exceeded to 5%.

Conclusion The newly developed ambulatory care service has helped to increase zero day discharges and improved the Accident and Emergency four hour target. Ambulatory care has not been utilised by primary care colleagues. Audit Results were shared with CCG to improve the referral rate by Primary Care. More investment is needed in future in ambulatory care by reinvesting money saved by reduced length of stay.

14 TESTICULAR SEMINOMA IN AN INFERTILE ADULT PATIENT WITH PERSISTENT MULLERIAN DUCT SYNDROME

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Introduction Persistent Mullerian duct syndrome (PMDS) is an autosomal recessive disorder characterized by the persistence of Mullerian duct derivatives (uterus, cervix, fallopian tubes and proximal vagina) in a phenotypically and karyotypically male patient. This internal male pseudohermaphroditism is usually an incidental diagnosis in children who present with cryptorchidism and inguinal hernia or in adults with cryptorchidism, infertility or an abdominal mass. PMDS is associated with a higher risk of malignant transformation of gonads. Here we present a case of testicular seminoma in an adult infertile patient with persistent MDS. The patient had laparoscopic bilateral orchidectomy with removal of fallopian tubes and commenced on long-term testosterone supplement therapy.

Subjects and materials A 42 years old morbidly obese (body mass index 57) infertile male patient had an elective admission for bariatric surgery. During pre-operative assessment, he was investigated for infertility and had an inguinoscrotal ultrasound to locate undescended testes. Postoperatively, he had MRI abdomen and pelvis. Six months later he had an urgent contrast enhanced CT abdomen and pelvis to rule out the causes of his right flank pain.

Result Pre-operative inguinoscrotal ultrasound revealed no testicular tissue in either the inguinal canals or the scrotum [figure 1]. Genetic screening confirmed 46 XY Karyotyping and hormonal profile showed raised FSH (26.3 IU/L) and LH (14.2 IU/L) and normal testosterone level (11.3 ng/ml). MRI pelvis confirmed the presence of a small, rudimentary uterus and bilateral fallopian tubes and identified bilateral adnexal masses (gonads) measuring about 3×2 cm. Emergency contrast enhanced CT abdomen [figure 1] showed a complex heterogeneous mass containing some air foci in right iliac fossa with twisted engorged vascular pedicle unrelated to bowel loops, presumed to be a twisted gonad. Following imaging evaluation, patient underwent laparoscopic removal of this mass, mildly congested appendix, normal looking left gonad and both fallopian tubes. Rudimentary uterus was left behind undisturbed. Histopathological analysis confirmed these gonads to be testicles with marked atrophic changes. Right sided testicle showed haemorrhagic infarction consistent with torsion along with a 5.5 cm classic seminoma [figure 1]. Full