analysed using a SOB point-of-care biomarker panel (troponin I, myoglobin, CK-MB, D-dimer, and BNP at the time when patient presented with SOB within 15 minutes of patient's visit to the ED. Thirty-day follow-up for HF, ACS and PE was performed.

The following cut offs were used for determining a positive biomarker:

1. myoglobin > 107 ng/mL,
2. CK-MB > 4.3 ng/mL,
3. troponin I > 0.40 ng/mL,
4. D-dimer > 500 ng/mL, and
5. BNP > 100 ng/mL.

CTCA, CTPA and 2D Echo were taken as the Gold Standard for the diagnosis of ACS, HF and PE.

Results/Conclusions

SALIENT FINDINGS

ACS:

P<0.001

Sensitivity=81.2%

Specificity=90.6%

PPV=78%

NPV=92.2%

Accuracy=87.8%

PE:

P<0.001

Sensitivity=75%

Specificity=94.6%

PPV=77.4%

NPV=93.1%

Accuracy=90.3%

HF:

P<0.001

Sensitivity=69.1%

Specificity=66.4%

PPV=50.7%

NPV=81.1%

Accuracy=67.3%

Conclusion We conclude that there is significant correlation between SOB point-of-care biomarker panel diagnosis and final diagnosis.

In patients presenting with SOB, one of the three clinical conditions identified by the SOB point-of-care biomarker panel will lead to earlier diagnosis and initiation of specific management.

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POINT OF CARE LUNG ULTRASOUND IN PATIENT TRIAGE: INTEGRATION OF ULTRASOUND INTO A STREAMING PATHWAY FOR COVID-19

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Aims/Objectives/Background Rapid risk stratification of patients is vital for Emergency Department (ED) streaming during the COVID-19 pandemic. Ideally, patients should be split into red (suspected/confirmed COVID-19) and green (non COVID-19) zones in order to minimise the risk of patient-to-patient and patient-to-staff transmission. A robust yet rapid streaming system combining clinician impression with point-of-care diagnostics is therefore necessary.

Point of care ultrasound (POCUS) findings in COVID-19 have been shown to correlate well with computed tomography (CT) findings, and it therefore has value as a front-door diagnostic tool. At University Hospital Lewisham (a district general hospital in south London), we recognised the value of early POCUS and its potential for use in patient streaming.

Methods/Design We developed a training programme, 'POCUS for COVID' and subsequently integrated POCUS into streaming of our ED patients. The training involved Zoom lectures, a face to face practical, a 10 scan sign off process followed by a final triggered assessment. Patient outcomes were reviewed in conjunction with their scan reports.

Results/Conclusions Currently, we have 21 ED junior doctors performing ultrasound scans independently, and all patients presenting to our department are scanned either in triage or in the ambulance. A combination of clinical judgement and scan findings are used to stream the patient to an appropriate area.

Service evaluation with analysis of audit data has found our streaming to be 94% sensitive and 79% specific as an indicator of COVID 19. Further analysis is ongoing.

Here we present both the structure of our training programme and our integrated streaming pathway along with preliminary analysis results.

RCEM moderated

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THE EFFECT OF AFFECT: WHAT WE TEACH OUR LEARNERS ABOUT THE ROLE OF PATIENT INDUCED EMOTION IN CLINICAL REASONING IN THE ED AND WHY?

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Aims/Objectives/Background Few empirical studies explore the contribution of non-clinical factors to perceptions of patient difficulty in EM. Fewer have investigated what students placed in EDs learn about 'difficult' patients or what, if anything, clinicians teach about the topic. We looked to address this. Considering these questions is imperative: patients perceived as frustrating report lower satisfaction with their clinical encounter, experience worse health outcomes and seem to be at risk of medical error secondary to faulty clinical reasoning.

Methods/Design With ethical approval, we undertook three interrelated, qualitative studies to conduct a case study of the undergraduate EM module delivered at Edinburgh University. In the first two, focus groups were used as the method of data collection; five clinician (n=25) and four medical student (n=21) groups were facilitated. In the third, semi-structured interviews with clinicians (n=12) were conducted. All groups/interviews were audio-recorded and transcribed. The data were analysed inductively using reflexive thematic analysis.

Results/Conclusions Frequent attendance, demands, pre-existing relationships and unrealistic expectations contributed to perceived patient difficulty. These were modified by personal and circumstantial factors. Although rarely told, students were aware who these 'difficult' patients were through observing behaviours. Critically, clinicians and students alike believed

frustration adversely impacted aspects of clinical reasoning. Students struggled when witnessing what they considered 'bad' behaviour as it contradicted their previously held ideals of how physicians should act.

It seems we teach students to try to internalise emotion yet that it is acceptable to let it negatively impact patient care. To combat this, students sought greater emotional transparency from physicians as well as advice on self-management strategies. Clinicians recognised the benefits of being candid but were afraid of being so. Contributing to this is the culture in medicine being one that mistrusts emotion. Further, both groups desired a formal curriculum addressing emotion in clinical reasoning thus suggesting one is needed.

93 ACUTE MAGNETIC RESONANCE IMAGING FOR MILD TRAUMATIC BRAIN INJURY

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Aims/Objectives/Background Mild traumatic brain injury (mTBI) accounts for one million emergency department attendances in the UK every year. Whilst 30–50% of patients suffer from persistent symptoms, unselected follow up would overwhelm the health care system. Magnetic resonance imaging (MRI), may help to stratify patients for clinical follow up and interventional trials. We therefore aimed to identify:

1. Neuroanatomical features of concussion on MRI and
2. the optimal timing for magnetic resonance imaging (<72h or 2–3 weeks after injury).

This is the largest study to date using serial scanning acutely in patients with mTBI.

Methods/Design Data originated from two prospective cohorts: the Collaborative European NeuroTrauma Effectiveness Research in Traumatic Brain Injury (CENTER-TBI) study (2014–2017) and a local cohort (2012–2013). Eligible patients presented to hospital within 24h of a mTBI (Glasgow Coma Score 13–15), satisfied local criteria for computed tomography scanning and received two MRIs: one within 72h (MR1) and one 2–3 weeks after injury (MR2). In addition, 104 controls were enrolled. Volumes and diffusion parameters for brain regions of interest were extracted via automated pipelines. Symptoms were measured using the Rivermead Post-Concussion Questionnaire acutely and the extended Glasgow Outcome Score at three months.

Results/Conclusions The study included 81 patients (73 from CENTER-TBI, 8 local) with a median age of 44 years (range 14–85) and 57 (70%) men. Within patients, cerebral white matter volume decreased (MR1/MR2 0.98, $p=0.001$) and ventricular volume increased (MR1/MR2 1.06, $p<0.001$). Compared to controls, white matter volume was normal on MR1 (patient/control 1.00, $p=0.277$) but reduced on MR2 (patient/control 0.97, $p<0.001$). Diffusion changes followed one of three trajectories: progressive injury, minimal change, or pseudonormalisation. Concussion symptoms worsened, improved and were variable in the three groups respectively (delta [IQR] + 5.00 [+2.00–+5.00], -4.5 [-9.25–+1.75], 0.00 [-6.25 to +9.00], $p=0.018$). MR1 predicted three-month outcome

better than MR2 (AUC [95% CI]: 0.93 [0.83–1.00] vs 0.72 [0.51–0.92]).

251 THE FRAILTY IN MAJOR TRAUMA STUDY (FRAIL-T): FEASIBILITY OF NURSE LEAD FRAILTY ASSESSMENT IN ELDERLY TRAUMA AND THE IMPACT ON OUTCOMES

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Aims/Objectives/Background Frailty screening for major trauma patients has recently become part of the best practice commissioning tariff within NHS England, yet there is no consensus as to who should carry out this assessment or which tool best identifies frailty in the Emergency Department (ED). As the trauma population ages there is a need for accurate early identification of frailty in the ED to underpin frailty specific major trauma pathways. The primary aim of this study was to determine the feasibility and accuracy of ED nurse-led frailty assessment in patients ≥ 65 years admitted to Major Trauma Centres (MTCs).

Methods/Design A prospective observational study was conducted across five UK MTCs, enrolling 370 participants over nine months. Eligible patients were aged 65 or more requiring trauma team activation. Frailty was assessed in the ED using three different tools: Trauma Specific Frailty Index (TSFI); Clinical Frailty Scale (CFS); PRISMA-7. ED nurse frailty assessment was correlated with Geriatrician assessment within 72 hours of admission using Spearman's correlation coefficient and kappa statistic for measuring the interrater agreement.

Results/Conclusions Complete frailty assessments were calculated for CFS in 99.4% of patients, PRISMA7 in 95.9% and TSFI in 37.58%. Rates of frailty differed between tools: CFS 32%, PRISMA7 57% and TSFI 92% whilst Geriatrician determined frailty was 37%. In all tools frail patients were older ($p<0.001$) and falls <2 m were the leading mechanism of injury ($p<0.05$). CFS showed both strong correlation (r_s 0.639, $p<0.001$) and substantial agreement (kappa 0.637, $p<0.001$) with Geriatrician assessment within 72 hours of admission.

ED nurses can accurately assess older major trauma patients for frailty using the Clinical Frailty Scale. These findings support assessment of frailty in the ED in order to identify patients who would benefit from early frailty specific care.

188 SENIOR CLINICAL AND BUSINESS MANAGERS' PERSPECTIVES ON HOW DIFFERENT MECHANISMS AND MODELS OF EMPLOYING GENERAL PRACTITIONERS IN OR ALONGSIDE EMERGENCY DEPARTMENTS INFLUENCE WIDER SYSTEM OUTCOMES

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