

**Abstract 1491 Table 1** Multivariate analysis of variables associated with post-induction hypotension within 10 minutes of prehospital emergency anaesthesia

		odds ratio (95% CI)	p value
<b>Age group</b>	16-34	REF	
	35-54	1.16 (0.77-1.76)	NS
	55-74	1.92 (1.24-2.97)	<0.01
	75+	1.90 (1.08 – 3.29)	<0.05
<b>Starting SBP (mmHg)</b>	Mid (90-140)	REF	
	Low (>90)	0.63 (0.37 – 1.04)	NS
	High (>140)	0.39 (0.26– 0.56)	<0.01
<b>Starting HR (bpm)</b>	Mid (60-100)	REF	
	Low (<60)	1.42 (0.74-2.61)	NS
	High (>100)	1.70 (1.20 – 2.42)	<0.01
<b>Fluids</b>	None	REF	
	Any	1.61 (1.14 – 2.27)	<0.01
<b>Drug combination (Fent/Ket/Roc)</b>	1,1,1	REF	
	0,1,1	1.76 (1.11 – 2.81)	0.02
	3,2,1	1.04 (0.63-1.73)	NS
	Roc Only	2.56 (1.21 – 5.35)	0.01
	Other	1.33 (0.80 – 2.23)	NS

HR – heart rate, SBP – systolic blood pressure, MAP – mean arterial pressure, REF – reference, NS – non-significant, Roc – rocuronium. SBP Mid/Low/High, HR mid/low/high – 60-100/>100/<60bpm

reduce avoidable harm in trauma patients undergoing PHEA.

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#### THE POSITIVES, THE CHALLENGES AND THE IMPACT: AN EXPLORATION OF EARLY CAREERS NURSES EXPERIENCES IN THE EMERGENCY DEPARTMENT

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**Aims, Objectives and Background** The intense working environment of the Emergency Department (ED) is exciting and rewarding; but is renowned for high staff turnover and burnout. The wellbeing and retention of the existing workforce is imperative. The purpose of this study was to explore the experiences of early careers nurses in the ED; identify aspects of ED they enjoyed, the challenges and explore potential coping mechanisms used to mitigate negative situations.

**Method and Design** A qualitative design was used. Eleven semi-structured interviews were conducted with adult and paediatric emergency nurses who had worked in the ED for less than three years. Data were transcribed, coded and analysed using thematic analysis. The setting for this study was an emergency department in a major trauma centre. Data was collected between January-August 2020 following ethical approval.

**Results and Conclusion** Four key themes emerged; (1) Drawn to ED Nursing'; (2) 'Teamwork'; (3)'Time to care' and (4) 'Psychological impact'. Opportunities for learning and development and being able to provide good levels of patient care were identified important to participants. Challenging aspects of the job included high workloads, exposure to traumatic incidents, violence and aggression. The psychological impact included feelings of burnout, exhaustion, flashbacks, personal growth and perspective. Teamwork, a strong support network

and opportunities for formal and informal debrief were identified as helping to mitigate challenging aspects of the job

By identifying the factors that maintain wellbeing and sustain the workforce, we can promote and support them. The benefits to a stable and well supported workforce in ED are many; improved and sustainable patient care, reduced staff turnover and alleviating pressures on the existing workforce. Research is now drawing on how we can provide psychological support to those who have been faced with caring for patients in a way that challenges their own moral framework.

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#### DIAGNOSTIC ACCURACY OF A NOVEL TRANSCRIPTOMIC CLASSIFIER FOR BACTERIAL AND VIRAL INFECTIONS – AN INDIVIDUAL PATIENT DATA META-ANALYSIS

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**Aims, Objectives and Background** Arising from demographic differences between healthcare systems, patients in the emergency department (ED) present with a broad range of diagnoses and clinical severities. Independent validation of a novel diagnostic tool is critical to ensure reliable and reproducible clinical performance. So far, three independent cohort studies have validated the performance of the machine-learning classifier IMX-Bacterial/Viral/Non-infected (IMX-BVN) to diagnose bacterial and viral infections; those have been combined to facilitate an individual patient data meta-analysis of performance.

**Method and Design** ED patients (n=1,277) with suspected infection from three international, observational studies (USA/Germany/Greece) were included. Of those, 661 had a unanimous ('consensus') ground truth of infection status established

by panel adjudication. Quantitative expression of 29-signature mRNAs was measured on a NanoString nCounter® SPRINT system. The classifier BVN version 3 (IMX-BVN-3) was applied to generate scores, which fall into four discrete interpretation bands (very unlikely, unlikely, possible, very likely). Sensitivity, specificity, and corresponding nominal likelihood ratios were calculated with 95% confidence intervals for each interpretation band.

**Results and Conclusion** 360 patients (54.4%) were consensus adjudicated to have a bacterial infection (range: 37.9–81.2%) and 153 (23.1%) to have a viral infection (range: 15.3–44.1%). Pooled likelihood ratios of the interpretation bands for bacterial infections were (from 'very unlikely bacterial' to 'very likely bacterial') 0.082 (0.039–0.176)/0.333 (0.264–0.419)/2.244 (1.598–3.152)/9.459 (5.808–15.404), associated with a rule-in specificity of 0.947 (0.915–0.967) and a rule-out sensitivity of 0.981 (0.960–0.991) in the outer interpretation bands. Pooled likelihood ratios of the interpretation bands for viral infections were (from 'very unlikely viral' to 'very likely viral') 0.182 (0.102–0.324)/0.292 (0.181–0.471)/0.956 (0.593–1.540)/6.021 (4.636–7.821), associated with a rule-in specificity of 0.884 (0.853–0.909) and rule-out sensitivity of 0.928 (0.876–0.959).

The IMX-BVN-3 classifier exhibits strong performance in a combined cohort of patients from different geographies and settings to rule-in and rule-out patients presenting to EDs with suspected bacterial and viral infections.

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#### FATAL PROPRANOLOL OVERDOSES REPORTED TO THE UK NATIONAL POISONS INFORMATION SERVICE (NPIS) OVER 5 YEARS 01/01/2017–31/12/2021

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10.1136/emered-2022-RCEM2.30

**Aims, Objectives and Background** Propranolol is widely prescribed and between 2007 and 2017 dispensing in the UK increased by some 41%. In the same period, deaths in England and Wales following propranolol overdose increased by 205%.

**Method and Design** We retrospectively reviewed cases of fatal propranolol poisoning reported to the UK NPIS, between 01/01/2017 and 31/12/2021 to understand the demographics of these exposures, the doses involved and treatments administered.

**Results and Conclusion** There were 46 fatalities (aged 14–70 years) with 57% (n=26) of them being less than 40 years of age, and the majority of these being female (77%; n=20). Thirteen cases involved propranolol only and in the 33 cases of mixed overdose the mean number of co-ingestants was two, with a maximum of 13. An antidepressant was co-ingested in 21 cases. The reported dose of propranolol ingested was documented in 23/46 cases, median 3,200 mg (IQR 1,920–4,480 mg) and in three patients exceeded 7,000 mg. Cardiac arrest prior to contact with the NPIS was recorded in 41/46 cases. Fourteen (34%) occurred in hospital and twenty-three out-of-hospital (56%). Patients received: sodium bicarbonate (n=30, 65%), glucagon bolus and/or infusion (n=38, 83%), high dose insulin/dextrose (n=36, 78%), inotropes or vasopressors (n=36, 78%), intralipid (n=25,

54%) and ECMO was commenced in two cases. The dose of insulin administered was known in 15 cases (median dose 4 unit/kg/hour). Doses more than or equal to 8 unit/kg/hour were given in 7 cases (maximum 10 unit/kg/hour in three cases).

Young adults particularly females accounted for the majority of fatalities. In almost half of all cases an antidepressant was co-ingested. Clinicians should be aware of the potential for rapid deterioration and severe clinical outcomes following propranolol overdose. Rapid access to expert clinical advice is available through the National Poisons Information Service and is strongly recommended in order to optimise use of available treatments.

## APEM Lightning Papers

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#### THE 'CHILD'S' SCREEN: A PRACTICAL GUIDE TO A CONSULTATION WITH REFUGEE AND ASYLUM SEEKING CHILDREN WITHIN THE PAEDIATRIC EMERGENCY DEPARTMENT (PED)

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**Aims, Objectives and Background** The number of refugees worldwide has increased, especially in recent times, due to wars, political instability and economic insecurity with Iran, Eritrea, Albania, Iraq and Syria being the top five countries for asylum applications. Consequently, there are increasing numbers of refugee and asylum-seeking children entering the

- C** ommunication
- C** ommunicable diseases
- H** ealth - physical and mental
- I** mmunisations
- L** ook after - safeguarding
- D** eficiencies
- S** exual health

Abstract 1655 Figure 1