were 6 cases where a positive 3 hour delta occurred with a 2 hour delta of 3 or less. 4 had values exceeding the 99th percentile on the admission sample so would have been retained for further investigation. The remaining 4 patients had co-existing clinical conditions that required further investigation.

Conclusion The routine use of serial sampling at admission and 2 hours was clinically safe and resulted in the same clinical decisions in the context of the busy ED environment for the population served by the hospital.

1337 EVALUATION OF A TRAUMA UNIT BYPASS TOOL IN PREDICTING MAJOR TRAUMA

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Aims, Objectives and Background In order to direct patients to specialist Major Trauma Centres (MTCs), triage is performed at the scene of an incident to evaluate the extent of a patient's injuries. The most severely injured patients are then transported directly to an MTC, even if there is a closer ED. This process is known as 'Trauma Unit Bypass' (TUB) and decision support tools are provided for use by ambulance service providers. This study aims to evaluate a tool in current operational use and suggest amendments which may improve its performance in clinical practice.

Method and Design Data from a period of 12-months (1065 cases) were used to evaluate the performance of a TUB tool used in an English ambulance service. Data were sourced from the Trauma Audit and Research Network (TARN) and ED records and case reviews were performed to extract the required information. Statistical analysis was performed to evaluate the accuracy of the tool in identifying major trauma, defined as an Injury Severity Score (ISS) greater than 15. Further analysis was undertaken to make recommendations for alterations to the tool

Results and Conclusion The sensitivity of the Wessex TUB is 51.3% and the specificity is 71.3% which makes the tool a poor predictor of major trauma. The tool could be improved by altering thresholds for vital signs (blood pressure and Glasgow Coma Scale) and by providing clarity around the injury findings.

This study provides the first full evaluation of this tool in clinical practice and makes some recommendations to improve performance. This could lead to more accurate identification of patients who have suffered major trauma and ensure they are transported to an appropriate specialist centre. However, it was identified that ISS>15 may not be the most useful outcome measure and it is recommended that a new definition is developed which more accurately describes need for MTC input.

1397 'I DON'T HAVE TIME': STRATEGIES FOR INCREASING RESEARCH ENGAGEMENT IN EMERGENCY DEPARTMENT CLINICIANS

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Aims, Objectives and Background Clinicians who engage in generating research knowledge are more likely to implement findings in practice leading to better patient outcomes. Having an emergency department (ED) culture that gives significance to research is an important factor in supporting clinicians to develop the skill and ability to participate and perform research.

In 2018 the ED at St George's Hospital, London introduced an embedded research group with a dedicated leadership position, bringing together research delivery staff and clinical academics to increase the research culture in the department. This study aimed to investigate the impact of this model on research engagement amongst the ED clinical multidisciplinary team.

Method and Design A case study design approach was used involving:

- A registry of the research-related initiatives undertaken in the department
- Analysing the metrics of engagement in research activities by clinical staff, including number of publications and academic training uptake

Data were collected between April 2018 and March 2022.

Results and Conclusion Registry data show 41 distinct initiatives established in the time period led or delivered by the research group. These included face-to-face teaching, publication writing support, a research internship program and small grant funding. Research outputs (publications or conference abstracts) showed a 23-fold increase from two in 2018 to 47 in 2021.

The project to develop a research culture in ED has had a positive effect on both type and number of research-related activities across all clinical staff groups. This case study illustrates how research activities delivered close to clinical practice under visible, focused clinical research leadership can increase research engagement. Challenges of a clinically complex context were overcome by embedding a multidisciplinary clinical research unit, linking research delivery with clinical academic development. This model could be replicated in other settings.

1718 ANOTHER CT AORTOGRAM REQUEST? A 1 YEAR RETROSPECTIVE CASE NOTE REVIEW OF ALL ED-REQUESTED CT AORTOGRAMS

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Aims, Objectives and Background Acute aortic pathologies have a high mortality rate and can be difficult to diagnose in the Emergency Department (ED). We wanted to know what our local positive diagnosis rate was from ED-requested CT aortograms (CTA).

Method and Design The radiology department provided a list of all CTA requested by ED during 2019. A retrospective notes review was conducted using the ED notes to identify diagnoses of acute aortic pathology and other positive diagnoses. Our ED saw approximately 90,000 adult patients in 2019.

Results and Conclusion 201 CTA were requested by ED in a single year (2019).

5 (2.4%) scans diagnosed acute aortic syndrome (AAS), with an additional 3 scans that identified thoracic aortic aneurysm without AAS.

13 (6.5%) abdominal aortic aneurysms were identified of which 2 had ruptured.

In addition, 24 (11.9%) patients had non aortic pathologies identified from the scan (6 gallstones, 3 pneumonia, 3 renal colic, 2 metastatic disease, 2 pancreatitis, 2 pulmonary embolism, 6 'other' diagnoses).

Of those with confirmed AAS, only one had an ADD-RS (aortic dissection detection risk score) of 2 (>2 recommend straight to CTA), four had a score of 0 or 1 and none had a D-dimer recorded.

It is sometimes perceived that CTA has a low diagnostic yield, but 23% of patients scanned in our cohort were able to have a positive diagnosis made after their scan, with approximately half of identified pathology being non-aortic.

1455 A 10-YEAR REVIEW OF INSULIN-RELATED ENQUIRIES TO THE UK NATIONAL POISONS INFORMATION SERVICE (NPIS)

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Aims, Objectives and Background More than 4.9 million people in the UK have diabetes, and sufferers are at increased risk of depression.[1] We reviewed enquiries to the NPIS about insulin overdose.

Method and Design Retrospective analysis of enquiries between 1 November 2011 and 31 October 2021.

Results and Conclusion We received 1195 enquiries involving insulin. Further analysis was limited to the 169 enquiries involving insulin only (90.5% via injection).

Most enquiries (88%) concerned adults ≥ 18 years. There were 34 non-diabetic and 98 diabetic patients: 32 Type 1, 10 Type 2, and 56 type undocumented. Exposures were intentional (n=114, 68%), from therapeutic error (n=28), accidental (n=16) or circumstances unknown (n=11).

Long-acting insulins were involved in 71 cases, and the highest dose was 20000 units (table 1). The lowest recorded blood glucose concentration (mmol/L) at the time of the enquiry was in the range 0–0.9 (n=7), 1.0–1.9 (n=29), 2.0–2.9 (n=25), 3.0–3.9 (n=12), >4.0 (n=14). Hypokalaemia (defined as K +<3.5 mmol/L) was noted in 26 (n=15%) enquiries. The maximum Poisoning Severity[2] (n=162) was graded: none (n=55), minor (n=29), moderate (n=44), and severe (n=34).

Treatments given prior to contacting the NPIS were IV glucose (n=91, 54%), IV/IM glucagon (n=26, 15%), IV octreotide (n=6, 4%) and IV corticosteroids (n=2, 1%). No patient underwent surgical excision of the injection site. Long-acting insulins accounted for 5/6 cases where octreotide was given.

Conclusions Hypoglycaemia following insulin overdose was mostly managed satisfactorily by intravenous glucose infusion, with glucagon used occasionally. The role of octreotide and corticosteroids was unclear. Approximately 20% of cases were severe, especially following overdose of medium- and long-acting insulins; we recorded no fatalities.

Abstract 1455 Table 1 Details of dose, insulin type, nadir blood glucose concentration, and Poisoning Severity Score in 169 cases of insulin poisoning reported to the UK National Poisons Information Service in the ten years to 31st October 2021. Ø = unrecordable

Insulin type*	Median dose Units (range)	Lowest blood glucoseconc[n] mmol/L (mg/dL)	Known diabetic patients	Maximum poisoning severity			
				Moderate *n*	% of all moderate	Severe *n*	% of all severe
Long acting (N=71)	600 (10–20000)	Ø	49	23	52%	14	41%
Medium acting (N=24)	900 (60–4500)	0.6 (11)	11	8	18%	7	21%
Short acting (N=14)	75 (28–2000)	1.6 (29)	7	3	7%	1	3%
Ultrashort acting (N=35)	180 (1.5–4800)	1 (18)	23	10	23%	5	15%
Unknown (N=18)	188 (45–400)	Ø	8	0	0%	7	21%
Canine (N=7)	20 (7–1600)	4.2 (76)	0	0	0%	0	0%

*Where two or more insulin types or mixtures were involved (n=55, 32.5%), the longest-acting component was counted.

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1632 CLINICAL PREDICTORS OF FRACTURE IN PATIENTS WITH SHOULDER DISLOCATION: SYSTEMATIC REVIEW OF DIAGNOSTIC TEST ACCURACY STUDIES

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Aims, Objectives and Background Pre-reduction radiographs are conventionally used to exclude important fracture before attempts to reduce a dislocated shoulder in the Emergency Department. However, this step increases cost, exposes patients to ionising radiation, and might delay closed reduction. Some studies have suggested that pre-reduction imaging may be omitted for a sub-group of patients with shoulder dislocations.

The objective was to determine whether clinical predictors can identify patients that might safely undergo closed reduction of a dislocated shoulder without pre-reduction radiographs.

Method and Design A systematic review and meta-analysis of diagnostic test accuracy studies that have evaluated the ability of clinical features to identify concomitant fractures in patients with shoulder dislocation. All fractures were included except for Hill-Sachs lesions. Quality assessment was undertaken using the Quality Assessment of Diagnostic Accuracy Studies (QUADAS-2) tool. Data were pooled and meta-analysed by fitting univariate random effects and multi-level mixed effects logistic regression models.

Results and Conclusion Eight studies reported data on 2,087 shoulder dislocations and 343 concomitant fractures. The prevalence of concomitant fracture was 17.5%. The most accurate