Methods We conducted a retrospective cohort study of patients attended by the Scottish Ambulance Service in 2011 with ambulance clinician attendance codes relating to 'psychiatric emergency' or 'self-harm'. Patients resident in Scotland and ≥ 16 years on first contact were included. We used NHS Scotland's Unscheduled Care Data Mart (1) to link data from: – the ambulance service; emergency departments (ED); general and psychiatric inpatient hospital admissions episodes; and death records.

Results There were 9014 calls from 6802 people. Slightly more males ($n=4708$, 52%) than females ($n=4306$, 48%) were attended. Most were discharged from ED with no known follow-up ($n=4566$; 51%). Some were left at home ($n=1003$ attendances, 11%). Almost half of the people ($n=3238$, 48%) made at least one repeat call. People who self-discharge from ED were more likely to have another ambulance attendance for psychiatric emergency/self-harm within the same year (Pearson chi square=5.24, $p=0.02$). Two hundred and seventy-nine (4%) people died within the study period, 97 (35%) were recorded as suicide. Ethical approval (NRES 15/EM/0260) and other data approvals were received.

Conclusion While linked data analysis may not identify all relevant cases, it provides important information to guide the development and evaluation of evidence-based interventions. Ambulance service and ED are missing opportunities to improve outcomes for people who experience a psychiatric emergency or who self-harm. New interventions could lead to decreases in the number of suicides, episodes of self-harm and levels of patient distress; and ambulance and ED service use.

REFERENCE

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Conflict of interest None declared.

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30 A STUDY OF THE PREVALENCE OF IMPAIRED AWARENESS OF HYPOGLYCAEMIA IN PEOPLE WHO HAVE HAD A SEVERE HYPOGLYCAEMIC EMERGENCY AND BEEN ATTENDED BY THE AMBULANCE SERVICE

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Aim To investigate the prevalence of Impaired Awareness of Hypoglycaemia in patients who require ambulance service attendance due to severe hypoglycaemia.

Methods We undertook a national cross-sectional survey of the prevalence of Impaired Awareness of Hypoglycaemia (IAH). An a priori target sample size of 415 was set to allow estimation of proportions of IAH within a 5% margin of error (99% CI). From January–June 2016, patients (>16 years) attended by the Scottish Ambulance Service due a Diabetes related emergency with a blood glucose <4 mmol/L were identified as potential participants. A questionnaire with two standardised IAH measures^{1,2} was posted to potential participants within a month of their severe hypoglycaemic event. Consent to participate was assumed through questionnaire return. Ethical approval was received from the National Research Ethics Service (15/EE/0383).

Results Five hundred and ninety-two questionnaires were returned. The prevalence of impaired awareness of hypoglycaemia in among participants as measured using the two standardised measures was 53% and 57% respectively.

Conclusion IAH is considerably more prevalent among people who have a severe hypoglycaemic emergency and call the ambulance service than in the general Diabetic population, where prevalence is 25%.¹ This knowledge will assist in the development of an intervention to reduce hypoglycaemic emergencies and may lead to improved outcomes and cost savings.

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31 INTRAOSSEOUS ACCESS IS EFFECTIVE WHILST WEARING CBRN PROTECTIVE EQUIPMENT

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Aim A cross over study aimed to determine comparisons of success rates and ease-of-use ratings in achieving intraosseous access in both wearing and non-wearing of Chemical, Biological, Radiation and Nuclear (CBRN) personal protective equipment (PPE) in a cadaver model.

Methods Using a cross over study, 8 experienced paramedics inserted an intraosseous (IO) device (Arrow EZ-IO®) into a cadaver specimen wearing their standard pre-hospital clothing. The sample then crossed over and applied CBRN PPE and repeated IO insertions. IO insertion times were recorded and assessed for clinical accuracy both before and after cross over with wearing CBRN PPE. Data collection involved the sample completing a confidential questionnaire assessing self-perceived ease-of-use scores for IO access measured in Likert scales (0–10). Qualitative data was captured following structured focus group interviews.

Results The results found no statistical difference between ease-of-use scores for IO access between wearing or non-wearing CBRN PPE. No difference in determining land marking for IO insertion ($M\ 9$ vs 8.75 $p=0.726$), humeral site insertion ($M\ 9.13$ vs 8.75 $p=0.593$), administration of IO saline flush ($M\ 9.25$ vs 8.75 $p=0.405$), holding and manipulating driver (9.13 vs 8.75 $p=0.593$) and trocar removal (9.25 vs 8.75 $p=0.405$). The mean ease-of-use scores were found to be lower in CBRN group but not significant, focus group discussions stated that PPE had some restrictions but effective EZ-IO insertion could still be achieved. Insertion times (25secs SD 3.46 vs 34.38secs SD 4.17 $p=0.0002$) were statistically longer with wearing CBRN PPE. However, focus group discussion stated that it would take significantly longer to achieve