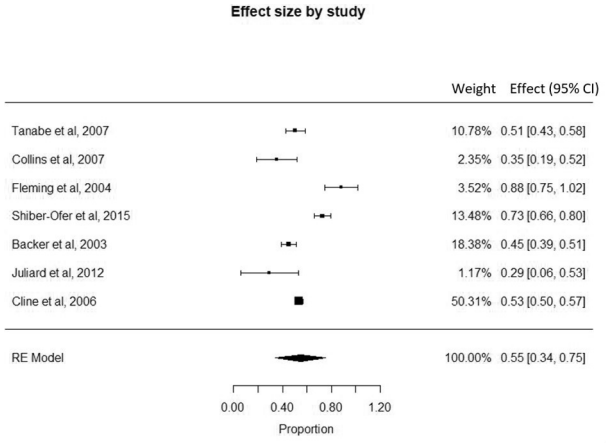

Abstract 021 Figure 2

Method and results The review was conducted in accordance with the PRISMA and was registered on PROSPERO. We planned to conduct a meta-analysis if the data was suitable. Searches were conducted using pre-determined terms using MEDLINE and Embase databases. A hand search of the grey literature was also conducted. Studies eligible for inclusion were those: peer reviewed, conducted in the last 20 years, included a general population, and written in English. Risk of Bias was assessed by the QUIPS tool, and overall quality by GRADE. Searches, screening, data extraction, risk of bias and GRADE assessment were all conducted by two independent researchers.

Conclusions The search identified 1,071 results, after title and abstract review 47 underwent full text review. A further 26 were excluded following full text review (table 1).

The outcome of prevalence was extracted from 13 studies. They were dominated numerically by McNaughton *et al*'s study of 701,952,422 patients, with the next largest having 7,238. A meta-analysis was conducted and confirmed the prevalence finding of the largest study at 0.24 (95% CI 0.02–0.45) (see figure 1).

The persistence at follow of hypertensive ED readings was extracted from 7 studies, a random effects model was conducted demonstrating a pooled persistence of 0.55 (95% CI 0.34–0.75) (see figure 2).

Hypertension is common and the persistence of it at follow up adds credibility to ED's public health potential.

022 EVALUATING DIVERSION OF ALCOHOL RELATED ATTENDANCES: THE EDARA STUDY

[1]Steve Goodacre, [1]Andy Irving, [1]Tracey Young, [1]Alicia O'Cathain, [1]Penny Buykx, [2]Simon Moore. *[1]University of Sheffield; [2]Cardiff University*

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Background Alcohol Intoxication Management Services (AIMS), commonly known as 'drunk tanks', provide an alternative to emergency department (ED) attendance for intoxicated adults at times of high incidence. The EDARA study evaluated the role of AIMS in the emergency care system and night time economy. Here we present findings describing AIMS activity and running costs, and estimating the effect of AIMS on ED attendance rates and ED user experience.

We identified six cities with AIMS and collected data relating to attendances and costs of running the service. We matched these cities with six cities without AIMS and used routine NHS data to estimate the effect of AIMS operation upon ED attendances during hours of AIMS activity. We also surveyed ED user experience over matched time periods of AIMS activity in cities with and without AIMS.

Mean attendance rates at the AIMS ranged from 2.7 to 11.8 per night. The mean running cost for an AIMS was £1635 per night (range £1075 to £2265) and the mean cost per attendance was £222.50 (range £132.27 to £583.8). Overall AIMS were associated with reduced ED attendances (−5.30 per night, $p<0.05$, 95% CI −9.62 to −0.62). However, the effect varied markedly between individual AIMS, ranging from 4.93 fewer attendances to 3.32 additional attendances per night. There was no significant effect from AIMS on ED user aggregate service rating score (coefficient 0.060, $p=0.372$), perception of feeling threatened (−0.037, $p=132$), aggregate negative experience score (−0.147, $p=0.196$), and overall service rating score (0.25, $p=0.440$).

AIMS vary markedly in activity, running costs and effect on ED attendances, so estimating overall effects is probably inappropriate. The most active and expensive AIMS appeared to be associated with the greatest effect on ED attendances. We identified no effect on ED user experience.

023 FOR HOW LONG SHOULD WE MONITOR ED PALPITATION PATIENTS IN THE OUTPATIENT SETTING?

[1]Matt Reed, [2]Neil Grubb, [2]Chris Lang, [3]Rachel O'Brien, [3]Kirsty Simpson, [3]Mia Padarenga, [3]Alison Grant, [4]Sharon Tuck, [5]Liza Keating, [6]Frank Coffey, [7]Lucy Jones, [8]Tim Harris, [9]Gavin Lloyd, [10]James Gagg, [11]Jason Smith. *[1]Emergency Medicine Research Group Edinburgh (EMERGE), Royal Infirmary of Edinburgh; [2]Department of Cardiology, Royal Infirmary of Edinburgh; [3]Emergency Medicine Research Group Edinburgh (EMERGE), Department of Emergency Medicine, Royal Infirmary of Edinburgh; [4]Edinburgh Clinical Research Facility, Epidemiology and Statistics Core, University of Edinburgh, Western General Hospital; [5]Royal Berkshire Hospital; [6]DREEAM – Department of Research and Education in Emergency Medicine, Acute Medicine and Major Trauma, Nottingham University Hospitals NHS Trust; [7]Chesterfield Royal Hospital NHS Foundation Trust; [8]Queen Mary's University; [9]Royal Devon and Exeter Hospital; [10]Department of Emergency Medicine, Musgrove Park Hospital; [11]Emergency Department, University Hospitals Plymouth NHS Trust*

10.1136/emermed-2019-RCEM.23

Background The IPED study showed that use of a smartphone-based event recorder (AliveCor) in ED patients presenting with palpitation or pre-syncope, increased the number of patients in whom an ECG was captured during symptoms over five-fold to more than 55% at 90 days (Reed MJ *et al*. Lancet eClinical Medicine 2019; 8: 37–46). The pocket sized AliveCor (now Kardia) mobile (AliveCor, San Francisco, USA) is a monitoring device that requires the patient to trigger the ECG recording. With minimal training, two fingers from each hand are placed on the monitor (which can be connected to the back of a smartphone) for 30 s to take an ECG recording.

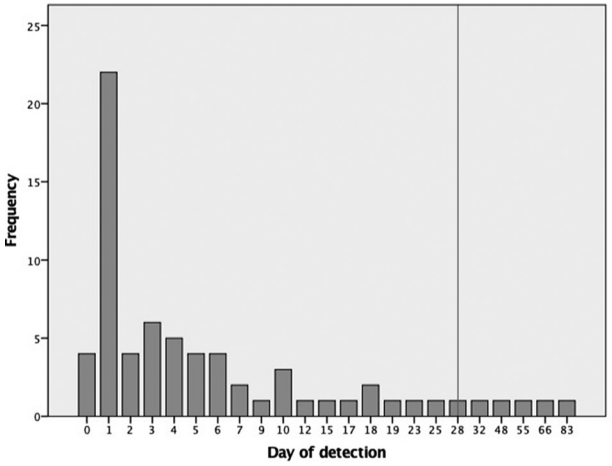
This pre-planned analysis looked at the time to symptomatic rhythm detection in the intervention (AliveCorgroup)to determine the optimum AliveCor device monitoring period in the outpatient setting.

Method and results Pre-planned sub study analysis of a randomised controlled multi-centre trial. Participants ≥16 years old presenting to 10 UK hospital EDs with palpitation or pre-

syncope whose underlying ECG rhythm during these episodes remained undiagnosed after ED assessment were enrolled. Time to symptomatic rhythm detection was recorded and analysed.

Conclusions 243 participants were recruited over an 18-month period. A symptomatic rhythm was detected at 90 days in 69 (n=124; 55.6%; 95% CI 46.9–64.4%) participants in the intervention (AliveCor) group.

92.8% of patients who recorded a symptomatic rhythm during the 90 day period recorded this rhythm during the first 28 days (figure 1/table 1).



Abstract 023 Figure 1 Time to symptomatic rhythm detection in the intervention (AliveCor) group (n=69)

Abstract 023 Table 1 Cumulative symptomatic rhythm detection in the intervention (AliveCor) group (n=69)

Dayofdetection

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	5.8	5.8	5.8
	1	22	31.9	31.9	37.7
	2	4	5.8	5.8	43.5
	3	6	8.7	8.7	52.2
	4	5	7.2	7.2	59.4
	5	4	5.8	5.8	65.2
	6	4	5.8	5.8	71.0
	7	2	2.9	2.9	73.9
	9	1	1.4	1.4	75.4
	10	3	4.3	4.3	79.7
	12	1	1.4	1.4	81.2
	15	1	1.4	1.4	82.6
	17	1	1.4	1.4	84.1
	18	2	2.9	2.9	87.0
	19	1	1.4	1.4	88.4
	23	1	1.4	1.4	89.9
	25	1	1.4	1.4	91.3
	28	1	1.4	1.4	92.8
	32	1	1.4	1.4	94.2
	48	1	1.4	1.4	95.7
	55	1	1.4	1.4	97.1
	66	1	1.4	1.4	98.6
	83	1	1.4	1.4	100.0
	Total	69	100.0	100.0	

Conclusion: ED palpitation patients discharged with a smartphone-based event recorder such as the AliveCor should be reviewed after 4 weeks to enable efficient device usage and timely treatment if required. Patients in whom a diagnosis has not been made can be re-reviewed at 90 days. (1541 characters/285 words)

024 HANDHELD ELECTRONIC DEVICE USE IN PATIENT CARE; THE EMERGENCY DEPARTMENT PATIENT PERSPECTIVE

[1]Nicholas Tilbury, [1]Graham Johnson, [1]Carol Byrne, [2]Adam Churchman, [2]Maleasha Shergill, [2]Zoe Rusk, [1]Andrew Tabner. *[1]REMEDY (Research Emergency Medicine Derby), University Hospitals of Derby and Burton NHS Foundation Trust; [2]University Hospitals of Derby and Burton NHS Foundation Trust*

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What is already known? Smartphones have an increasingly important role to play in the delivery of healthcare, especially in the acute setting. Little is known regarding patient perceptions of this development.

Why is this study important? Staff are concerned that patients have a negative perception of their use; this concern may present a barrier to optimal use despite the existing evidence of their benefits.

What does this study add? Our study describes patient, carer and relative attitudes towards staff use of smartphones within an emergency department. The majority of respondents trust staff to use their devices appropriately and are supportive of the use of this evolving technology in a healthcare setting.

A cross-sectional survey of emergency department service users in a single department at all times of day and on all days of the week.

Surveys were administered by medical students; all eligible individuals in the department during a data collection period were approached.

Results A total of 438 participants successfully completed the survey with a response rate of 98%. Only 2% of those who observed staff using HEDs during their emergency department visit thought that they were being used for non-clinical purposes. 340 (72%) agreed that staff should be allowed to use HEDs in the workplace. Concerns expressed by participants included devices being used for non-clinical purposes and data security. The main suggestion by participants was that the purpose of the HEDs should be explained to patients to avoid misinterpretation.

Conclusion Our study suggests that the majority of individuals attending the emergency department have no concerns regarding the use of HEDs by clinical staff, and that many of the concerns raised could be addressed with adequate patient information and clear governance.

025 HOSPITAL INTERVENTIONS TO IMPROVE PATIENT FLOW: EMERGENCY DEPARTMENT OUTCOMES OF AN ACTION RESEARCH STUDY

Simon Sethi, Caroline Boulind, Stevan Bruijns. *Yeovil District Hospital NHS Foundation Trust*

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Background The Royal College of Emergency Medicine has highlighted reduced patient flow through the hospital system as a major challenge to improving emergency department