Chest Heart & Stroke Scotland

British Heart Foundation

EMERGE PRESENTS

THE IPED STUDY

MULTI-CENTRE RCT OF A SMART PHONE BASED EVENT RECORDER ALONGSIDE STANDARD CARE VS STANDARD CARE FOR PATIENTS PRESENTING TO THE ED WITH PALPITATIONS AND PRE-SYNCOPE

MATT REED - CHIEF INVESTIGATOR

BACKGROUND

- 300,000 UK ED presentations a year
- Underlying rhythm diagnosis is difficult
- Only way to establish the underlying heart rhythm is to capture an ECG while the patient has symptoms
- 12-lead ECG and conventional ambulatory monitoring are of limited efficacy due to the infrequency of symptoms
- Holter diagnostic yield less than 20%

Competing interests:

The authors declare that they have no competing interests and no financial interest in the device used in this study. AliveCor had no involvement in the study.

METHODS

- Multi-centre open label, randomised controlled trial
- Participants >16 years old presenting to 10 UK hospital EDs were included

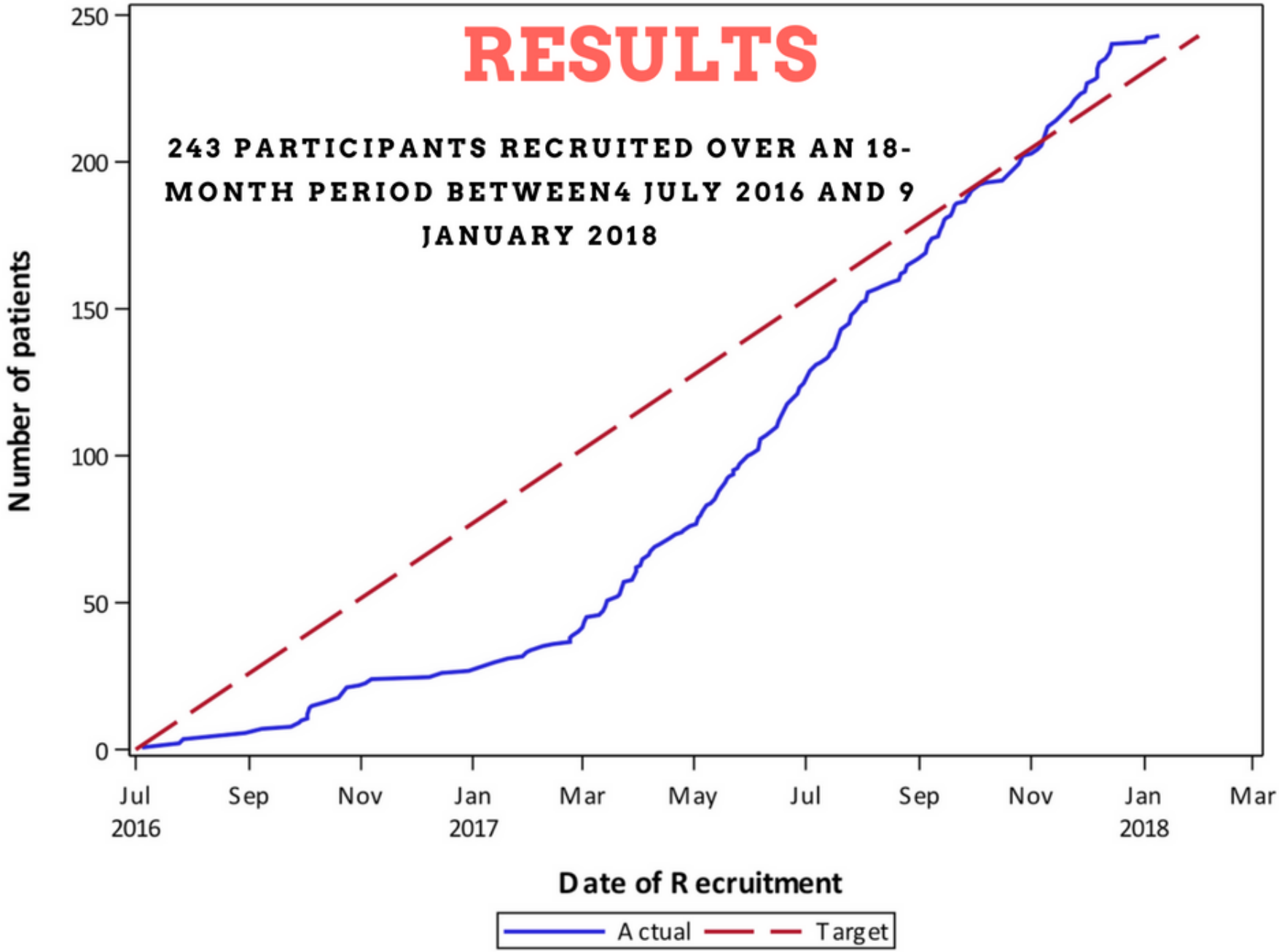
METHODS: INCLUSION CRITERIA

- Participant aged 16 years or over
- Participant presenting with an episode of palpitations or pre-syncope with no obvious cause
- Participant's underlying ECG rhythm during these episodes remains undiagnosed after clinical assessment

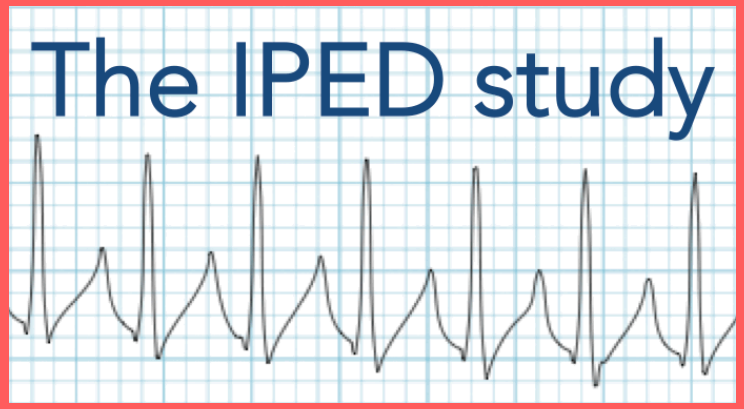
METHODS

- Participants were randomised to either
- (a) intervention group; standard care plus the use of a smart phone based event recorder or
- (b) control group; standard care alone
- Primary endpoint was symptomatic rhythm detection rate at 90 days

RESULTS


243 PARTICIPANTS RECRUITED OVER AN 18-MONTH PERIOD BETWEEN4 JULY 2016 AND 9 JANUARY 2018
Number of patients
250
200
150
100
50
0
Jul 2016
Sep
Nov
Jan 2017
Mar
May
Jul
Sep
Nov
Jan 2018
Mar
Date of Recruitment
Actual
Target

The IPED study



RESULTS

243 participants

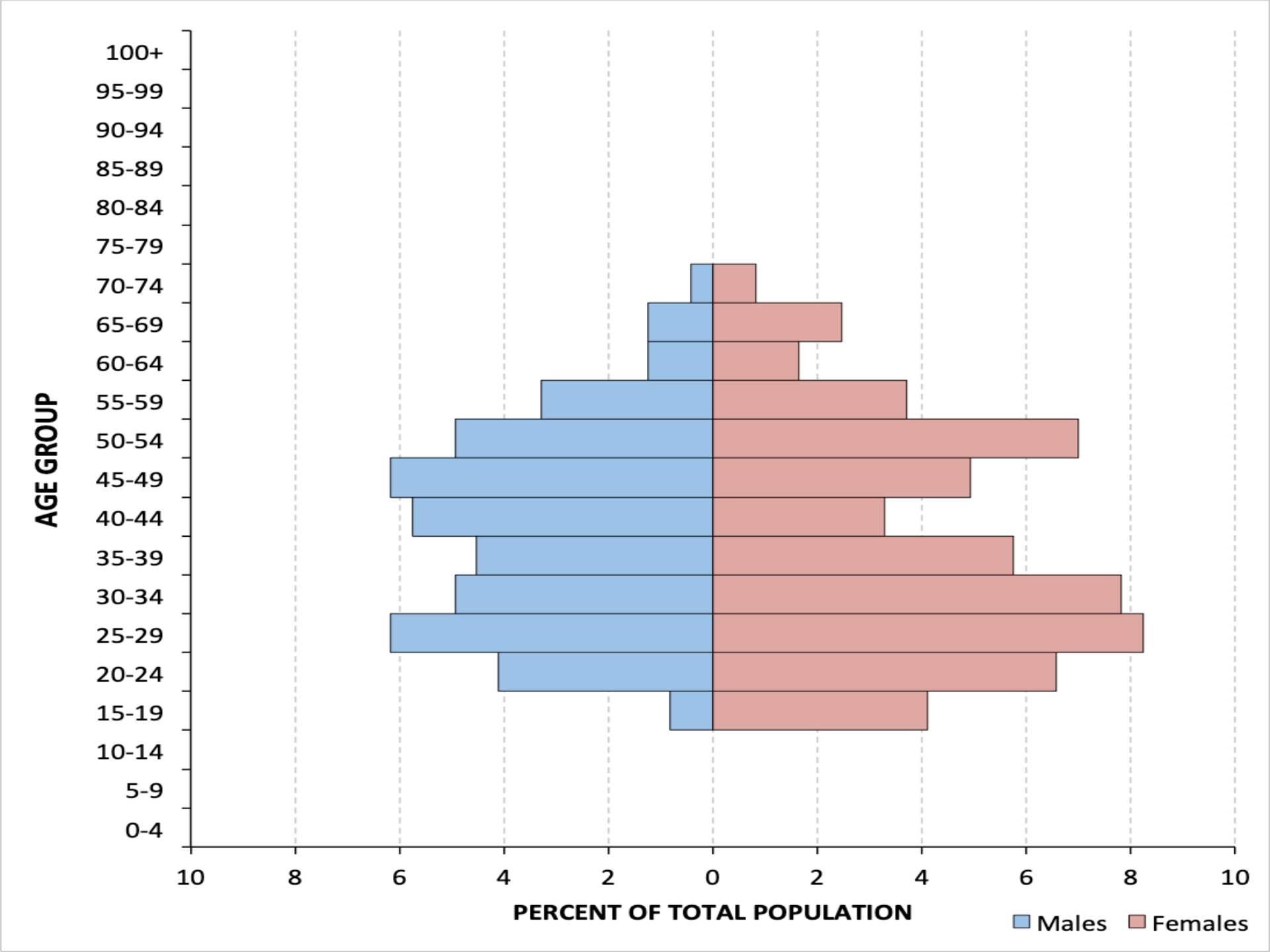
126 Intervention group
117 Control group

43% Male, 57% Female

91% Palpitations
9% Pre-syncope

Age 17-74 years

Mean = 40.0


AGE GROUP
100+
95-99
90-94
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
10
8
6
4
2
0
2
4
6
8
10
PERCENT OF TOTAL POPULATION
Males
Females

PRIMARY OUTCOME
SYMPTOMATIC RHYTHM AT 90 DAYS

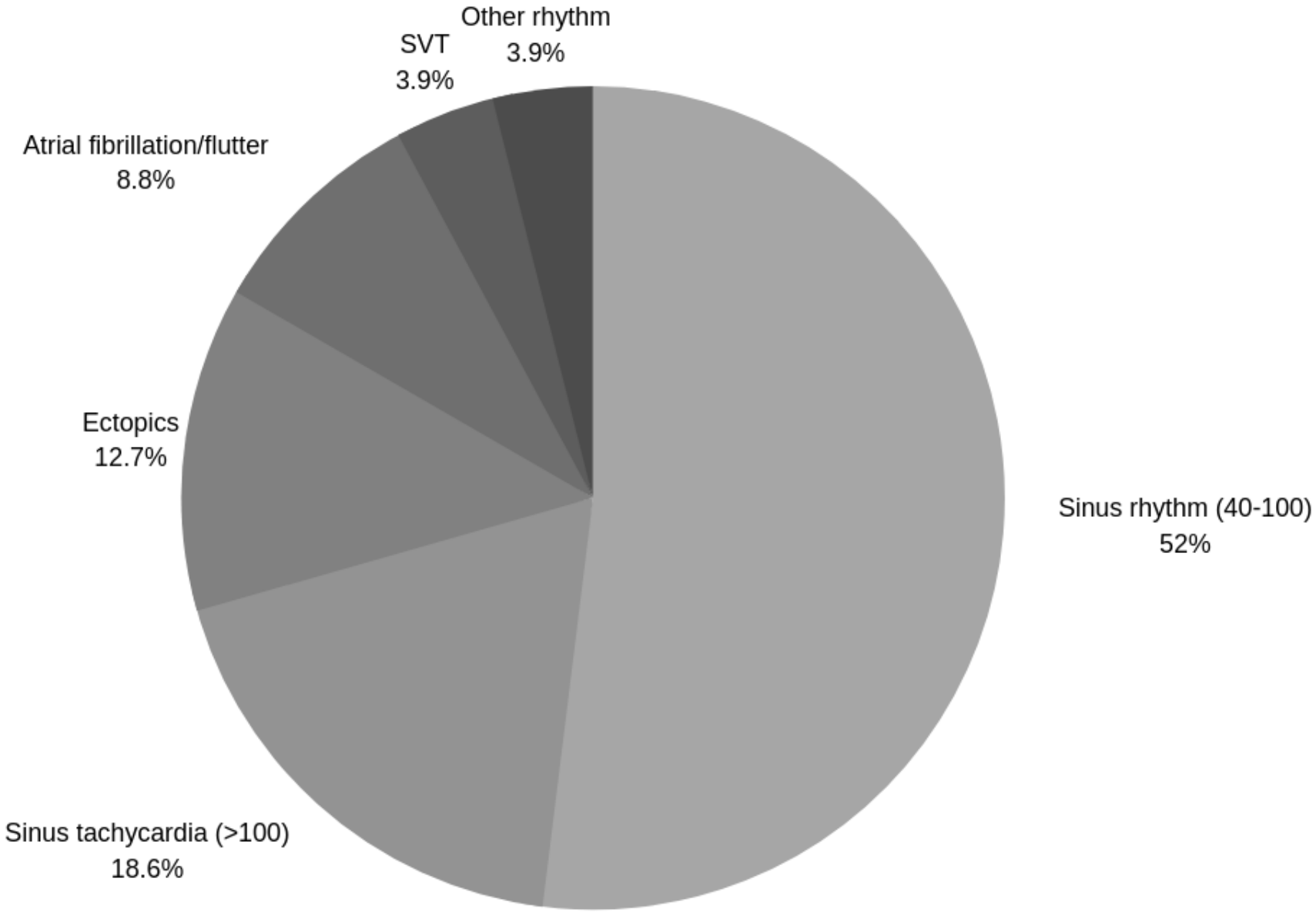
55.6% 9.5%

69 participants in the **intervention** group (n=124; 55.6%; 95% CI 46.9-64.4%)

11 participants in the **control** group (n=116; 9.5%; 95% CI 4.2-14.8)

# p<0.0001

SYMPTOMATIC RHYTHMS (both groups)



SECONDARY OUTCOME
MEAN TIME TO SYMPTOMATIC RHYTHM DETECTION

9.5 DAYS

Intervention group

(SD 16.1, range 0-83)

42.9 DAYS

Control group

(SD 16.0, range 12-66)

# p<0.0001

SECONDARY OUTCOME
SYMPTOMATIC CARDIAC ARRHYTHMIA AT 90 DAYS

8.9% 0.9%

11 participants in the
intervention group
(n=124; 8.9%; 95% CI 3.9-13.9%)

1 participant in the
control group
(n=116; 0.9%; 95% CI 0.0-2.5%)

p=0.006

SECONDARY OUTCOME

MEAN TIME TO SYMPTOMATIC CARDIAC ARRHYTHMIA

9.9 DAYS

Intervention group

(SD 15.6, range 1-55)

48.0 DAYS

Control group

(1 participant)

p=0.0004

SECONDARY OUTCOME
COST PER SYMPTOMATIC RHYTHM DIAGNOSIS

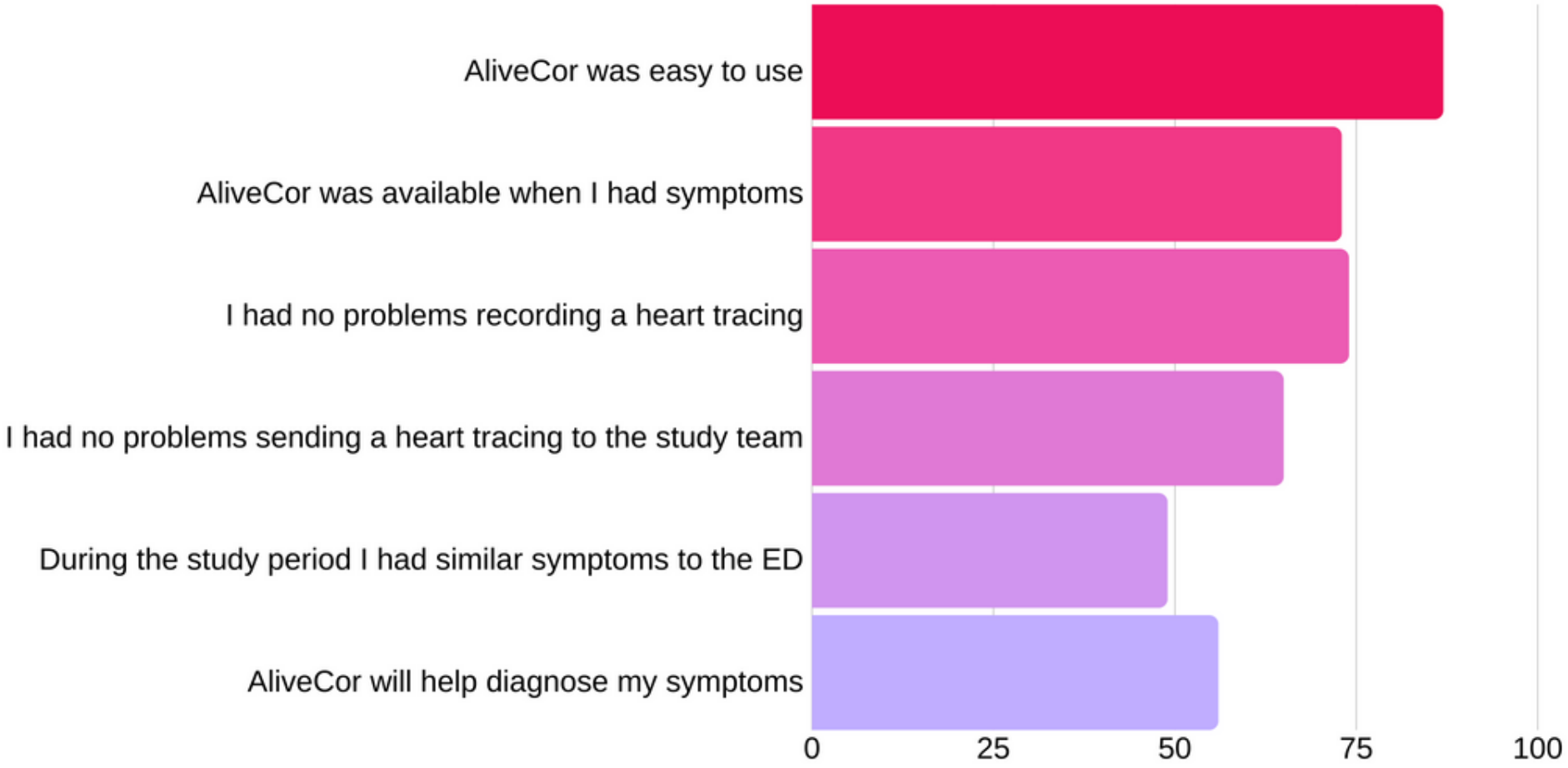
£474

Intervention group

£1395

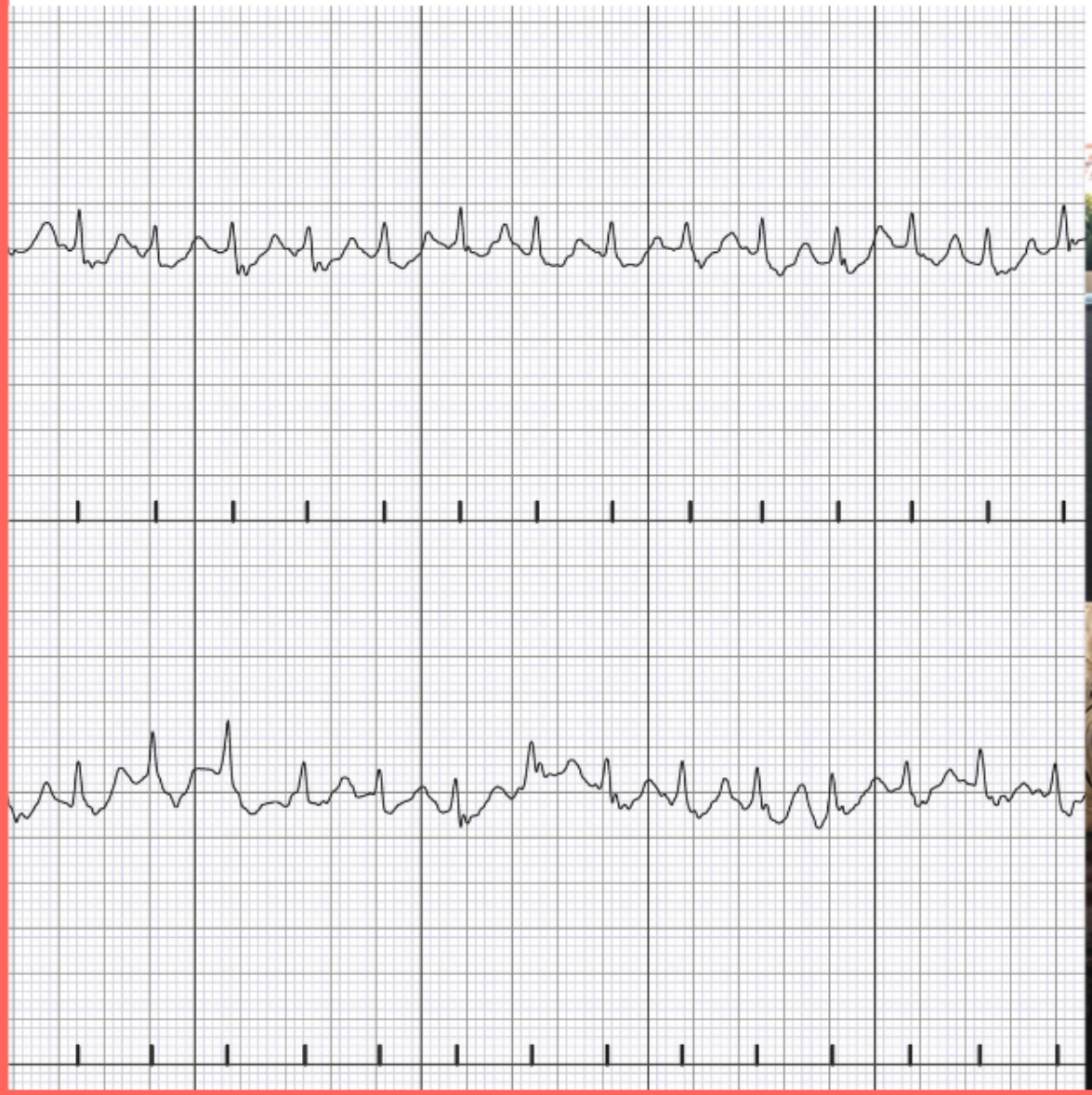
Control group

PATIENT SATISFACTION



Percentage rated 'agree' or strongly agree' in returned surveys

The real story.....



CONCLUSION

A smart phone based event recorder should be considered as part of on-going care for all patients presenting acutely to EDs with unexplained palpitations or pre-syncope

DISSEMINATION

WHAT NEXT?

British Heart Foundation

Thanks to

Chest Heart & Stroke Scotland

Edinburgh
Neil R Grubb
Christopher C Lang
Rachel O'Brien
Kirsty Simpson
Mia Padarenga
Alison Grant
Miranda Odam

WTCRF
Sharon Tuck
Cat Graham

Nottingham
Frank Coffey (PI)
Claudia Woodford
Lucy Ryan
Sevim Hodge
Christopher Gough
Sonya Finucane
Cecilia Peters
Philip Miller
Janet Shepherd
Louise Conner

Plymouth
Jason E Smith (PI)
Peter Wafer
Susan Tyson
Rosalyn Squire

Reading
Liza Keating (PI)
Michelle Hennessy
Niamh Tolan
Komal Lama
Nicola Jacques
Abby Gandy
Ayesha Hussain
Charlotte bower
Chrissie Ambrose
Christiana Da Silva
Shanies Mughal
Claire Burnett
Sarah MacGill
Parminder Bhuie

Chesterfield
Lucy Jones (PI)
Emily Hall
Amanda Whileman
Sue Glenn
Jodie Bradder
Julie Toms
Heather Cripps
Rachel Gascoyne

Barts
Tim Harris (PI)
Shelley Page
Rhys Thomas
Olivia Boulton
Georgia Norman
Helen Power
Imogen Skene
David Smith

Leicester
Tim Coats (PI)
Andrew Thomas
Lisa McLelland
Jayne Hill
Jeff Wilcock

Exeter
Gavin Lloyd (PI)
Rachael Meek
Jennifer Small
Alison Potter
Samantha Keenan
Daisy Mackle
Sara Eddy
Angie Bowring
Karin Gupwell
Reading
Liza Keating

Taunton
James Gagg (PI)
James Allen
Jayne Foot

Medical and nursing staff in all participating EDs

All EMERGE research nurses

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The IPED study