



# A survey of the echocardiography workforce in the UK.

Commissioned by the British Society of Echocardiography

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*This survey was funded by the British Society of Echocardiography but undertaken by independent researchers.*

## Foreword

In September 2021 the BSE commissioned an independent survey of echo leads across the UK. The survey was designed to ascertain a true picture of the echo workforce relating to capacity and demand and to better understand issues around training and recruitment and retention.

The survey was prioritised in recognition of the perfect storm facing echocardiography: historical shortages in the workforce exacerbated by COVID, against a backdrop of increasing demand and a backlog driven by the pandemic.

In its report, *The Untold Heartbreak*<sup>1</sup>, the British Heart Foundation reported that 37% of patients were waiting more than 6 weeks for echo across the UK as opposed to 4% in February 2020. More recent data for England suggests the current backlog stands at 155,000 with 66,000 waiting more than 6 weeks.

This puts immense pressure on the workforce. However, this level of scrutiny also offers an opportunity. The scale of the problem has now been recognised and there is a willingness to act. We have already seen the introduction of the Echo Training Programme from the National School of Healthcare Science (NSHCS), an initiative to help fast track trainees into echo. This is welcome, but simply adding more trainees cannot be the only answer, we must ensure we retain people, that pathways for progression are in place and the issues creating burnout in the current workforce are addressed.

We must also ensure that the full multi-disciplinary workforce is being utilised effectively and that people are accessing the training they require, in particular our cardiology registrars. That is why our survey was so wide ranging. We wanted to gain as much insight as possible at this critical point. To be able to influence decision makers in the most informed way and to promote long-term thinking rather than short term fixes.

The survey was sent out to echo leads across England, Scotland, Wales and Northern Ireland. A comprehensive list of English centres was available through DM01 data, but similar lists were not available for the other nations. We were only able to survey those centre leads we could verify. If you did not receive a survey to complete or your centre is not on the list, please let us know and we will ensure you are included in future.

What is captured is a picture of a multi-disciplinary workforce doing its best to meet growing demand. Centres struggling to fill vacancies with the experienced staff they need. It is telling that over 10% of the echo workforce is made up of locums. Many of our members are locums and they provide an invaluable resource. We must ensure they have access to equivalent continuing professional development opportunities and meet the same clinical standards as everyone else. This needs to be balanced and considered so as not to further increase pressures and to provide parity with our non-locum workforce.

Anecdotally we hear that registrars are struggling to access the training they require. Whilst we understand the challenge of planning training sessions when departments are under extreme pressure to reduce waiting lists, training time must be made available. This should be seen as an opportunity to increase our workforce at this time.

This report is the first step in a long-term plan to measure and address the workforce shortage. We are working with NHSE already and hope to speak to the other national bodies. We are supporting NSHS with the Echo Training Programme and will input into further initiatives. We are now working on a project to clearly articulate the role of an echocardiographer, adequately capturing the complexity

in order to protect and upgrade banding, to describe pathways for progression for senior echocardiographers and to reflect the language of policy makers in order to access funding. We want to ensure that not all funding goes to training and that all levels of practice benefit.

We would like to thank the working group for their input into the survey questions:

Ms Cathy West, Professor Martin Stout, Ms Jane Lynch and Ms Samantha Hill

We would also like to thank Dr Geoff Punshon and Professor Alison Leary for carrying out the survey and compiling the attached report.

If you have any comments you would like to share with us please email them to [membership@bsecho.org](mailto:membership@bsecho.org).

**Dr Kelly Victor, Chair of Membership Resources**

**Dr Tom Ingram, Chair of Workforce and Leadership**

**Ms Jo Sopala, Chief Executive Officer**

1. The Untold Heartbreak, British Heart Foundation 2021 [Legacy of Covid | British Heart Foundation \(bhf.org.uk\)](#)

## Summary of findings

There was a good overall response rate of 68% (England 74%, Scotland 80%, Wales 62% and Northern Ireland 20%).

Most services are provided across sites in all four countries. The most common number of sites was two (32%, 35/107) followed by one (31%, 34/107) and three (20%, 22/107). Four sites (8%, 9/107), five (2%, 2/107) and more than five (5%, 5/107) accounted for the remainder of the responses.

Almost all respondents offered training to echocardiographers (92%, 98/106) and cardiology SpR's (92%, 97/106). Critical care training was offered by 64% (68/106) respondents.

The most common pay was at Agenda for Change band 7 (headcount 673 WTE 581.75) This was from a total of 1366 headcount and 1089.5 WTE. The range of pay was band 5 to 8c on AFC and SpR/Consultant for medical grades.

Band 7 is by far the most common locum grade (118.75 FTE) with the most common reason for locum use being vacant/unfilled posts (52).

BSE was the most common accreditation (791) with 51 holding EAVCI. There were 149 pre-accreditation echocardiographers recorded. 93% (86/92) of respondents offered paid overtime/bank work within their organisations. Only 16% (15/92) of respondents offered a recruitment or retention bonus.

Only 38% (36/95) of respondents said their departments had echo support workers.

53% of respondents (50/95) had advertised but failed to appoint to vacant posts-this could indicate a supply issue.

The most common reason for leaving was gaining a new job with a different employer (56). Retirement (28) and moving to the private sector (26) were the next most common. 15 departures were due to leaving the workforce, 4 obtained a new job with the same employer and 2 had a career break. None left to be promoted in the same organisation.

By far the most common slot lengths were 45 minutes (51%, 44/86) or 40 minutes (31%, 27/86). 8% (7/86) respondents had a slot length of 30 minutes (below the BSE minimum). 65% (56/86) respondents stated that their slot lengths had changed due to COVID while 35% (30/86) of respondent's slots had stayed the same. Of those respondents who had increased their slot time due to covid, the most common times were now 60 minutes (40%, 22/55) followed by 45 minutes (35%, 19/34) and 50 minutes (20%, 11/54).

75% (64/85) of respondents did not provide a 24/7 echo service while 25% (21/85) did. There were a number of waiting list initiatives offering a varying amount of extra sessions such as evenings and weekends.

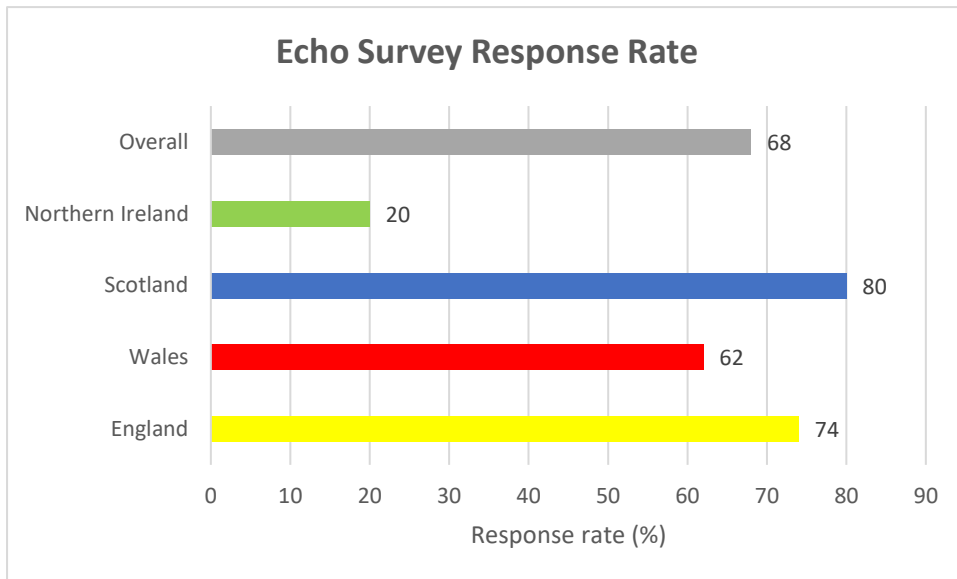
Qualitative data revealed worker distress "We are broken", concerns over the number of trainees and not being able to give them the right support/learning opportunities, significant issues with recruitment and retention and efforts to mitigate current staffing issues such as increasing autonomy for the workforce.

## Introduction

In the last quarter of 2021, a UK wide survey was undertaken to understand the current echocardiography workforce in the UK and examine some of the issues it is facing.

The survey had 38 questions looking at demographics, workforce distribution, training, and elements of service provision.

## Response rate



The overall response rate for the survey was 68% (England 74%, Scotland 80%, Wales 62% and Northern Ireland 20%).

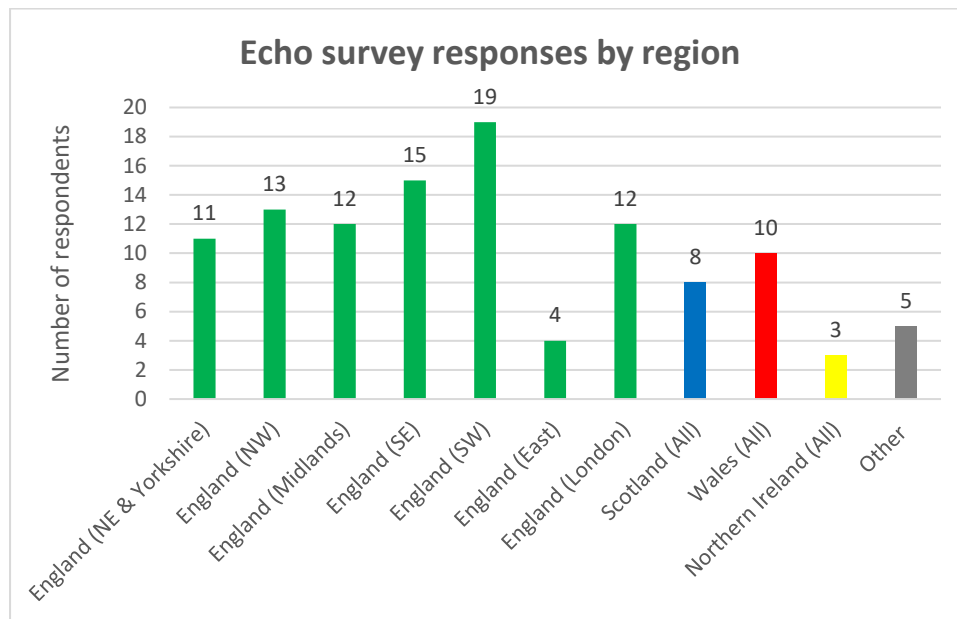
## Findings

Q1 What is the name of your Trust/Health Board/Organisation? And Q3 Please tell us the name of the hospital at which the echo lead is based

(107 responses, 0 skipped (100%))

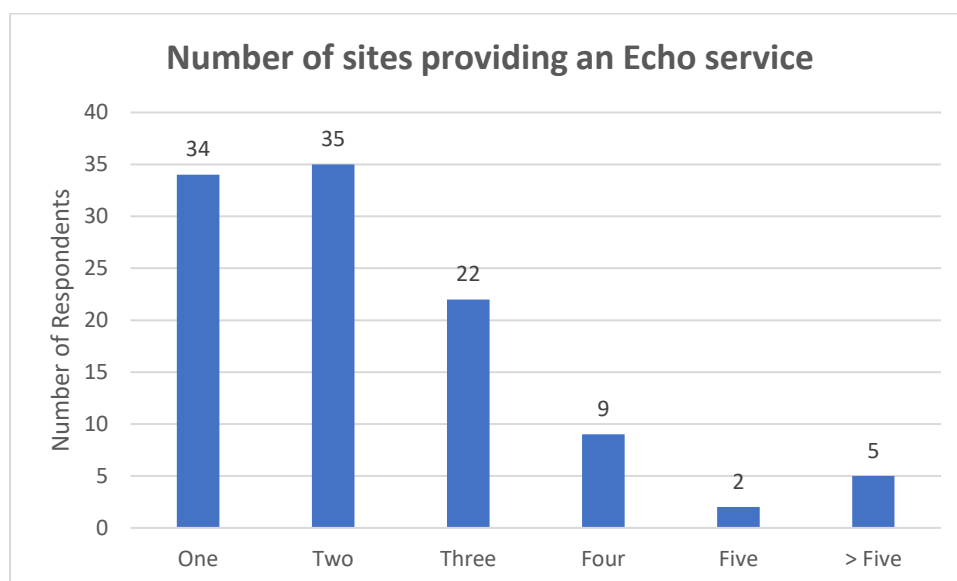
Please see appendix A.

Q2 Which region do you work in?



(107 responses, 0 skipped (100%))

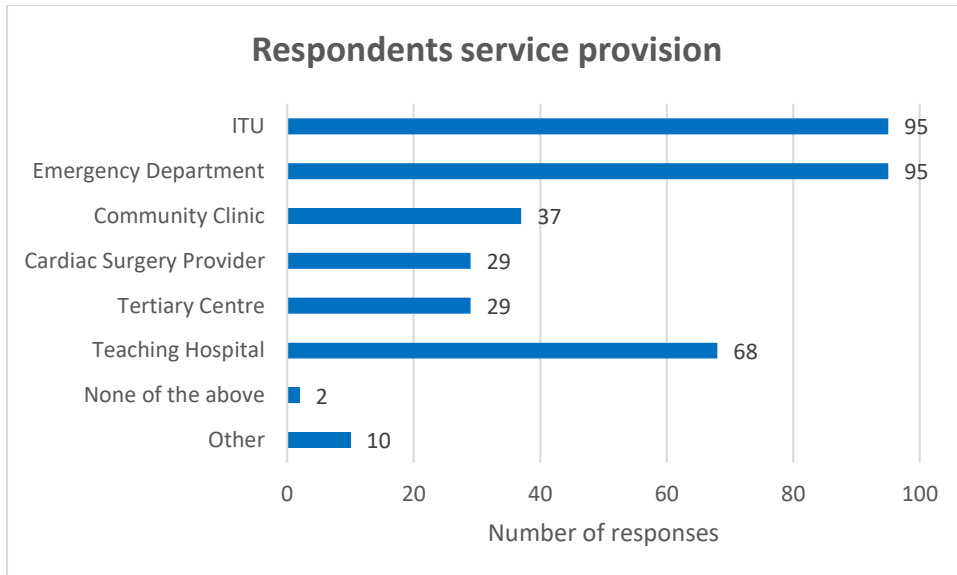
Q4 How many sites provide an echo service?



(107 responses, 0 skipped (100%))

The most common number of sites was two (32%, 35/107) followed by one (31%, 34/107) and three (20%, 22/107). Four sites (8%, 9/107), five (2%, 2/107) and more than five (5%, 5/107) accounted for the remainder of the responses.

#### Q5 Does your organisation have the following?



((107 responses, 0 skipped, (100%))

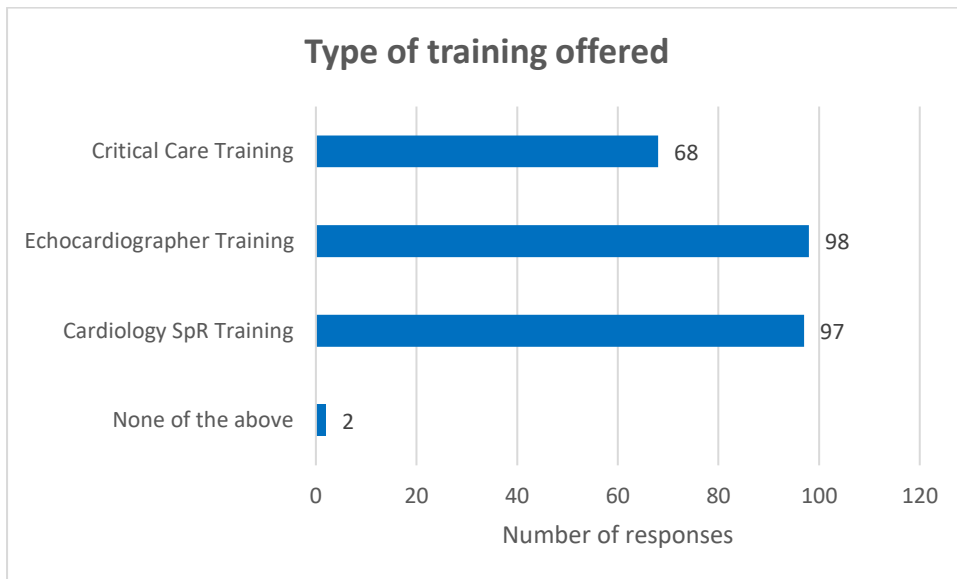
Respondents could choose multiple options. Most respondents (89%, 95/107) had an emergency department and an ITU. 64% (68/107) of respondents were in a teaching hospital. Around a third of respondents provided community clinics (34%, 37/107), cardiac surgery (27%, 29/107) or were a tertiary centre (27%, 29/107).

The 'other' responses were as follows:

- *East Midlands Congenital Heart Centre*
- *Routine echos have been outsourced to Queen Mary's Hospital to help with the backlog of requests*
- *District General*
- *Primary PCI*
- *Will be part of the diagnostic hub from March 22*
- *District General Hospital*
- *ACHD clinic, physiologist led valve and ACHD clinics*
- *Major Trauma Centre; Secondary care (DGH)*
- *District general at main site and 2 community hospitals*



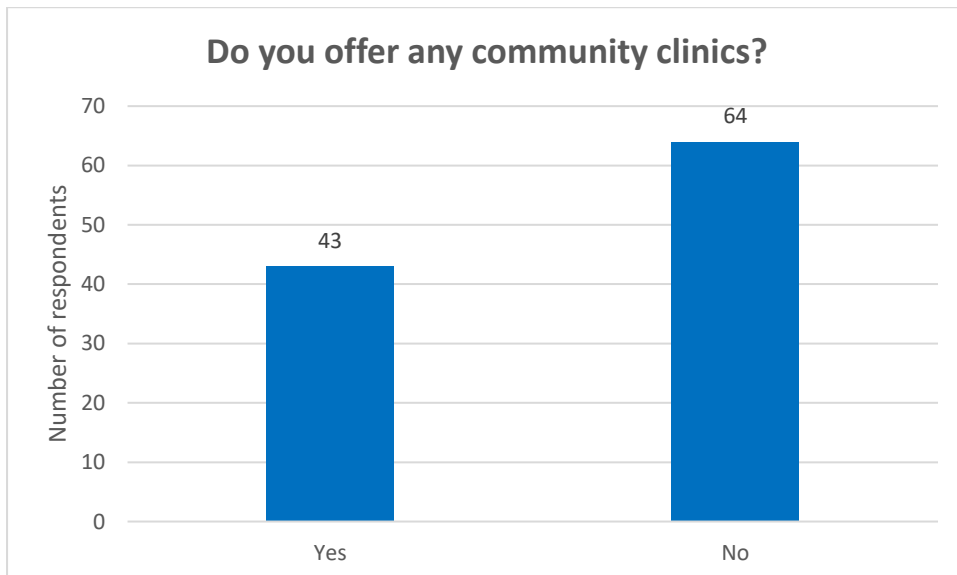
**Q6 Does your organisation offer training to the following groups?**



*(Responses 106, skipped 1 (99%))*

Almost all respondents offered training to echocardiographers (92%, 98/106) and cardiology SpR's (92%, 97/106). Critical care training was offered by 64% (68/106) respondents.

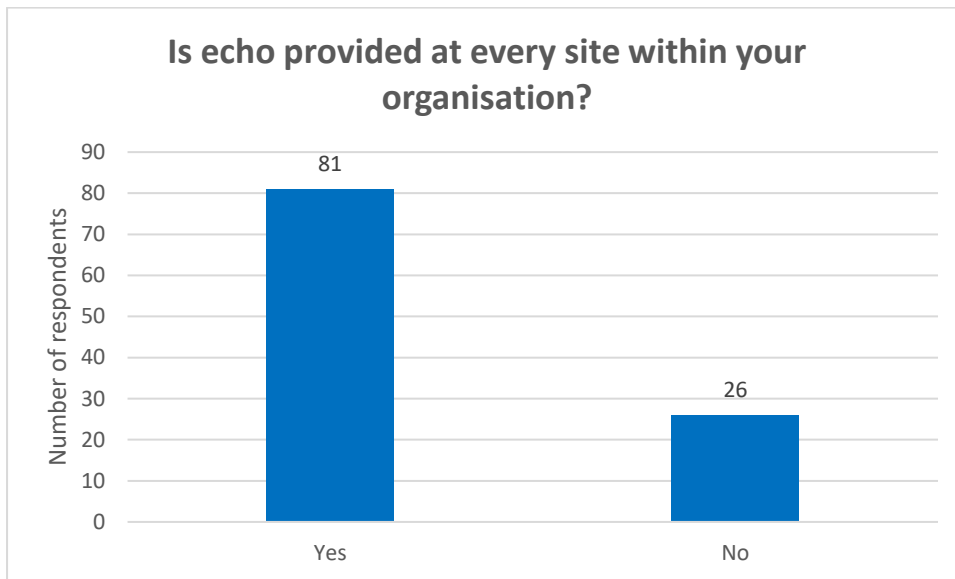
**Q7 Do you offer any community clinics within your organisation?**



*(Responses 107, skipped 0 (100%))*

40% (43/107) respondents offered community clinics.

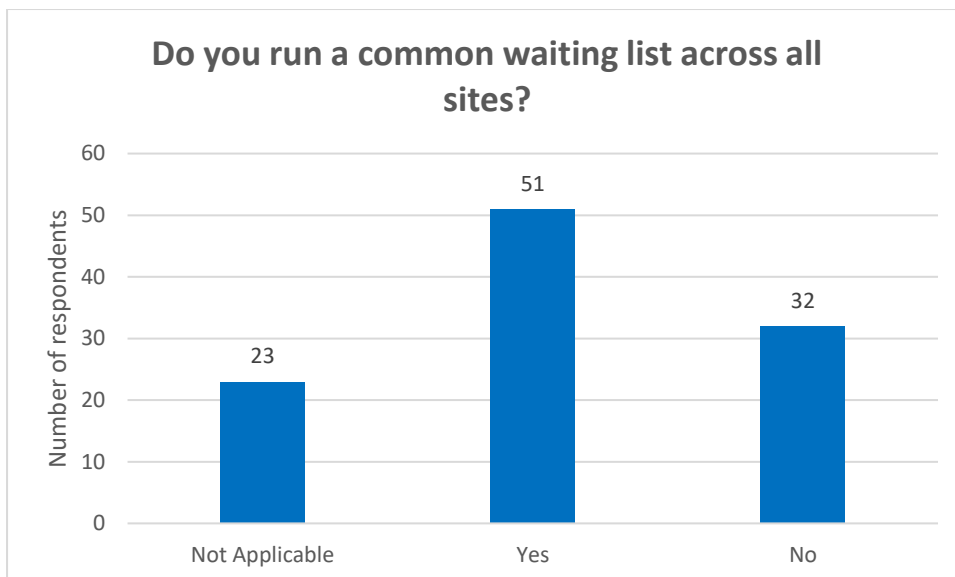
**Q8 Is echo provided at every site within your organisation?**



*(Responses 107, skipped 0 (100%))*

76% (81/107) of respondents provided echo at every site within their organisation.

**Q9 Do you run a common waiting list across all sites?**

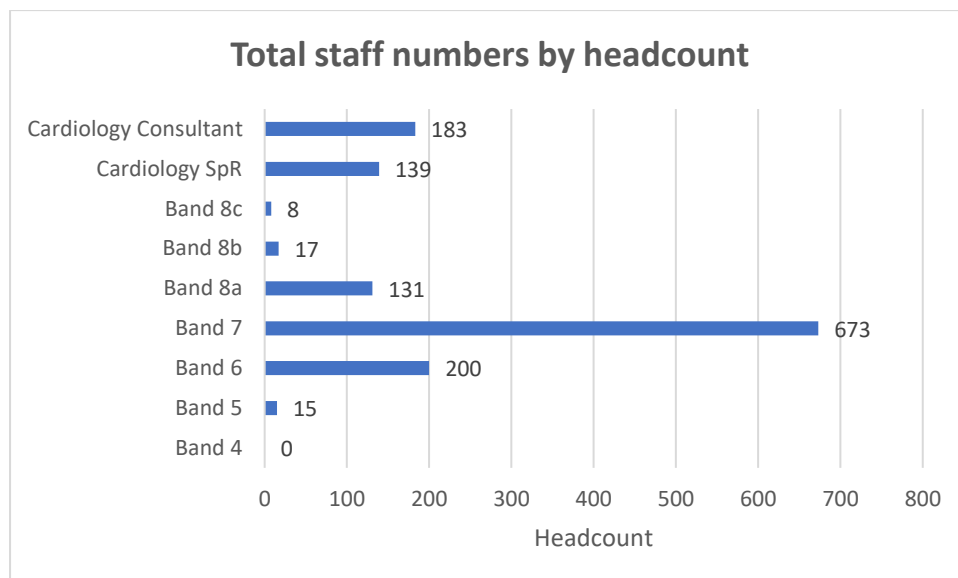


*(Responses 106, skipped 1 (100%))*

Of the respondents who had multiple sites 61% (51/83) ran a common waiting list while 38% (32/83) did not.

**Q 10 Please confirm by grades the following information for your service**

a) How many echocardiographers at each Band?



b) How many FTEs (to the nearest number) does this equate to in total?

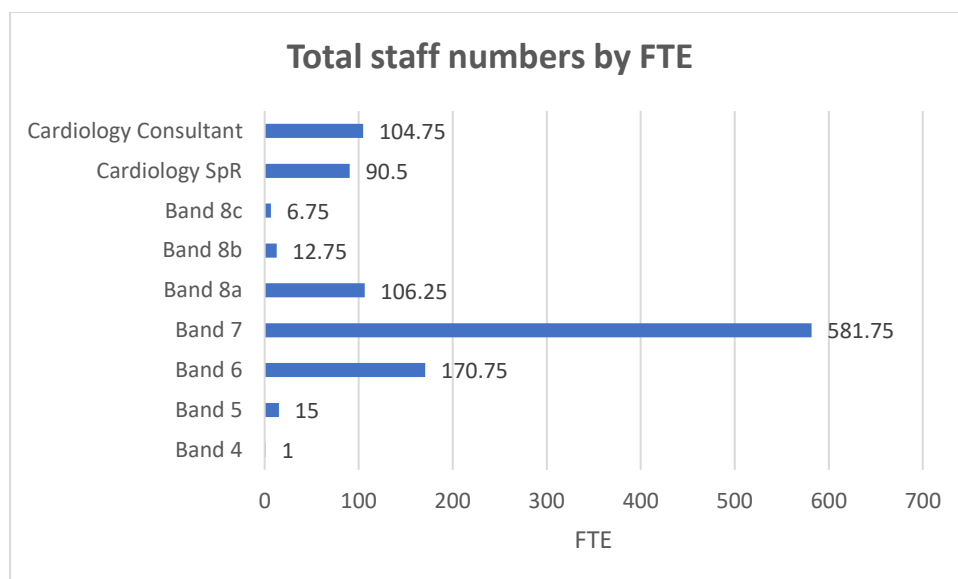


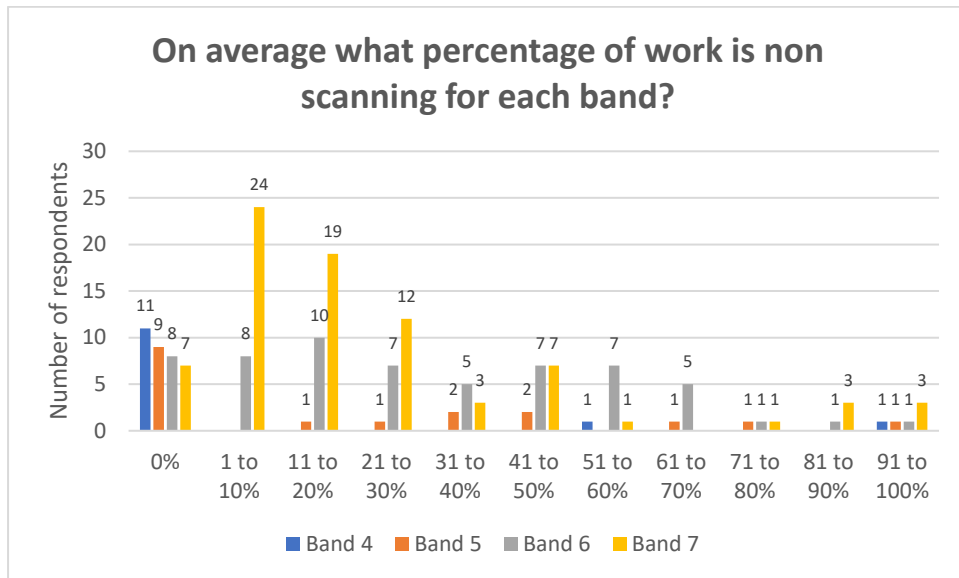
Table 1 Comparison of headcount and FTE:

Staff group	Headcount	FTE
Cardiology Consultant	183	104.75
Cardiology SpR	139	90.5
Band 8c	8	6.75
Band 8b	17	12.75
Band 8a	131	106.25
Band 7	673	581.75
Band 6	200	170.75
Band 5	15	15
Band 4*	0	1
<b>Total</b>	<b>1366</b>	<b>1089.50</b>

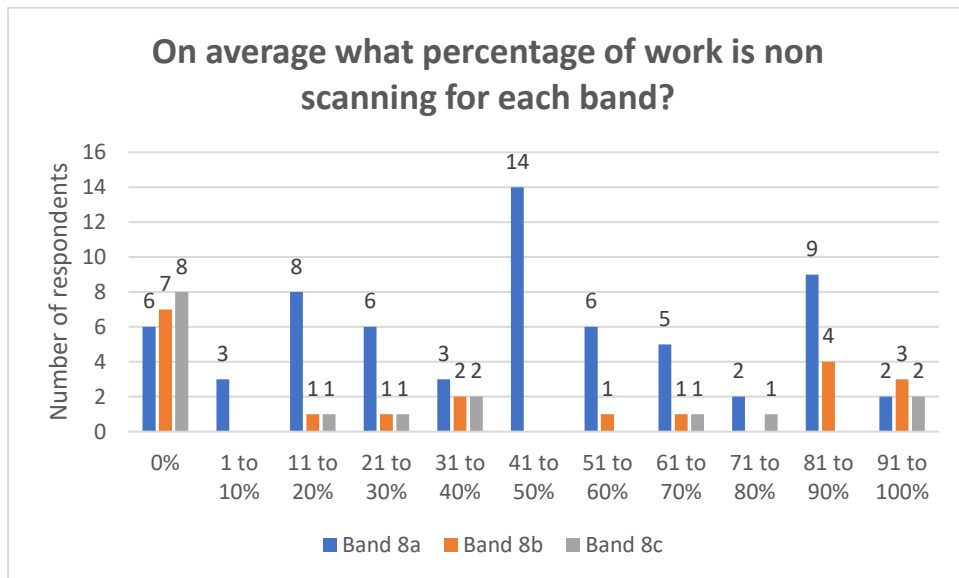
\*Likely reporting error.

c) On average what percentage of the work is non scanning for each Band?

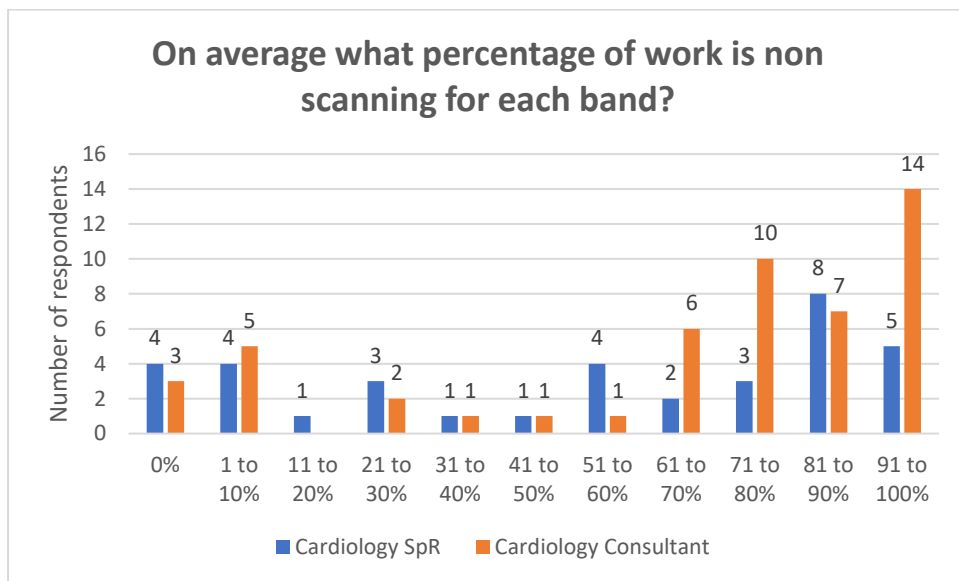
1) Band 4 to 7



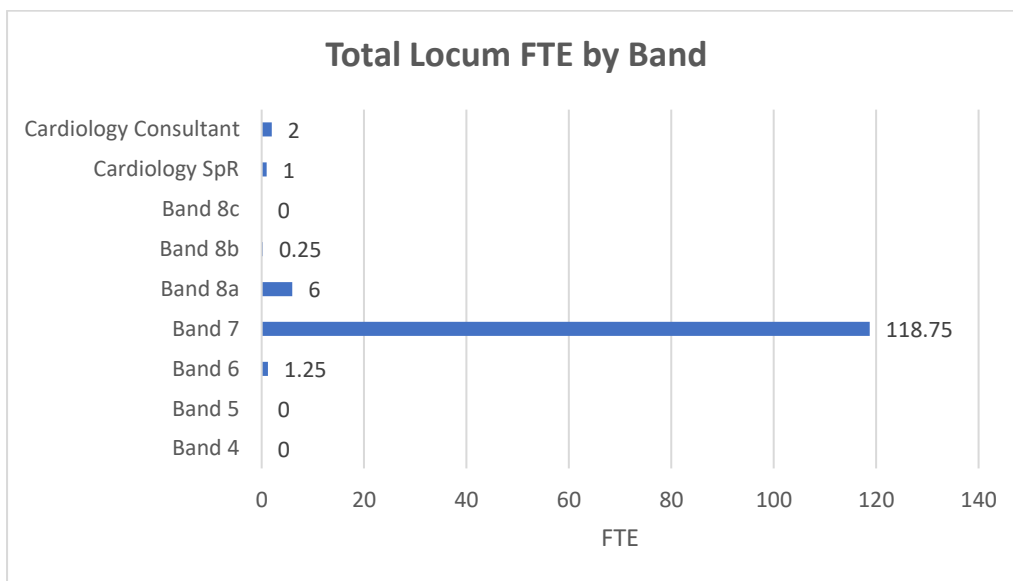
2) Band 8a, b and c



### 3) Cardiology SpR and Consultants

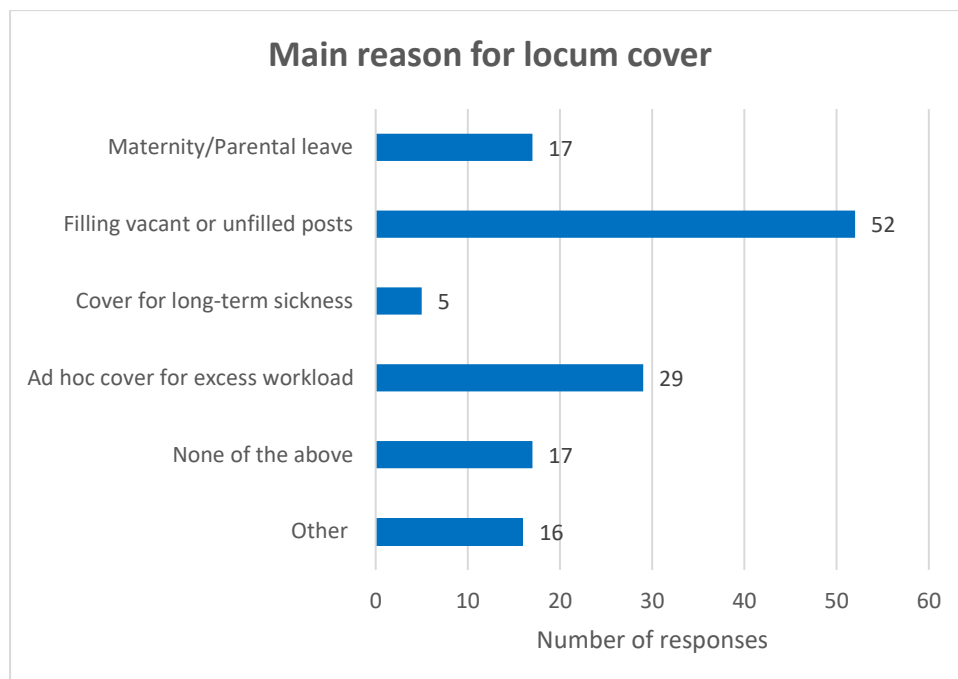


Q11 At present how many locums (by the nearest FTE) do you employ to assist with your service at each grade below?



Band 7 is by far the most common locum grade (118.75 FTE).

## Q12 Please tell us the MAIN reasons why locum cover is required



(Responses 94, skipped 13 (87%))

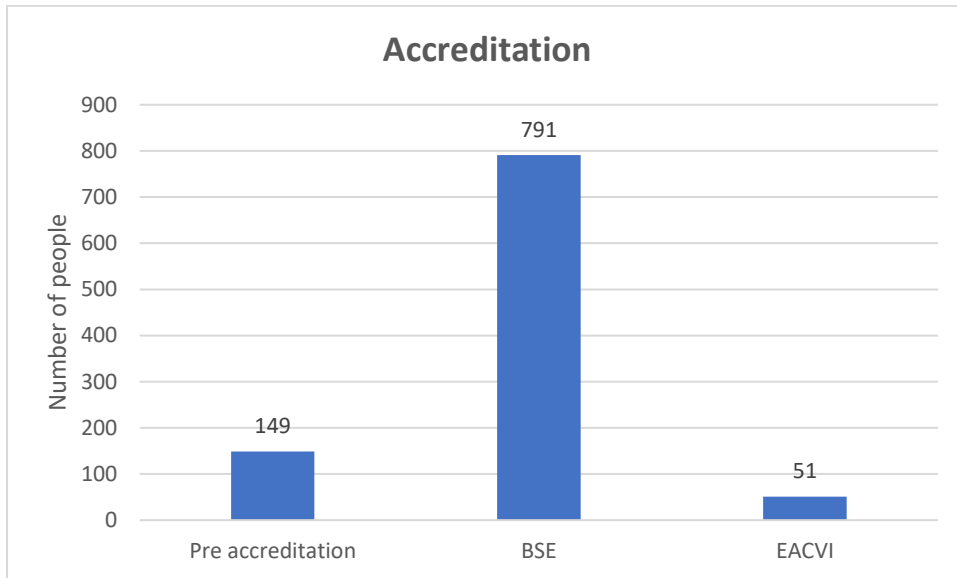
Filling vacant or unfilled posts was the most common reason for locum cover (52 respondents) followed by ad hoc cover for excess workload (29), maternity/paternity leave (17) and long-term sickness (5).

Of the respondents answering 'other' the effect of COVID19 was mentioned by three and high demand/excess workload and response to the waiting list by another three with four mentioning maintaining the service, weekend service or 7-day service provision. The full responses were as follows:

- *Weekend cover*
- *Currently the historical establishment is full but locums needed to maintain service until ongoing business plan is agreed*
- *Covid-19 backlog*
- *High demand*
- *Response to waiting list*
- *None at present, but excess workload as general rule*
- *We have an echocardiographer bank which we use to cover sickness and a currently vacant post*
- *We employ a number of locums who can offer us clinic sessions at weekends (difficult to put a FTE number too) all are paid at either band 7 or band 8a grade*
- *Covid backlog*
- *HEE secondment*
- *Skill mix issues*

- Address long post covid waiting list and previous targets
- Unable to obtain congenital locums - no vacancies currently
- 7-Days service for impatient echo implemented recently
- There is only myself providing an echo service for 14 years
- We do not employ locums

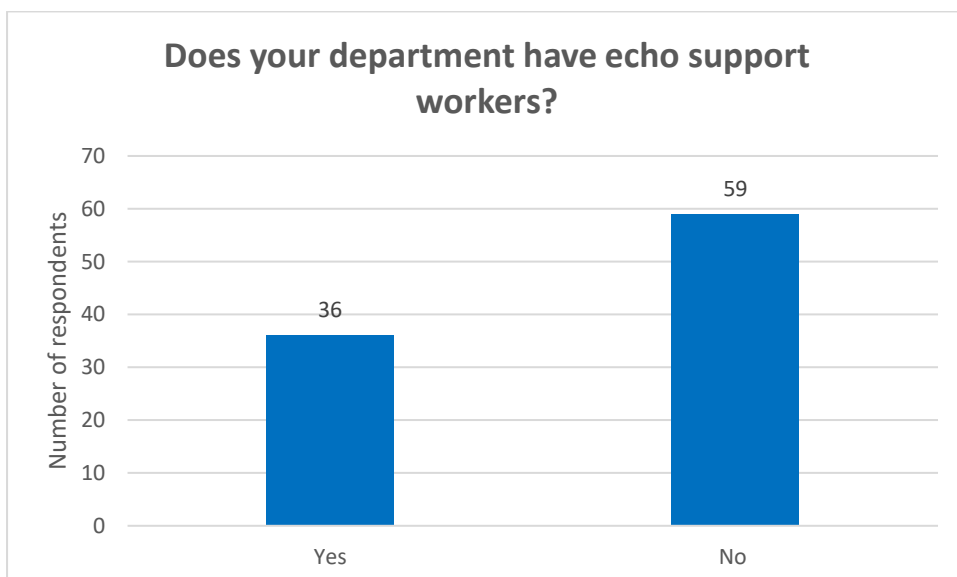
Q13 How many of your echocardiographers are accredited with the accreditation below?



(Responses 95, skipped 12 (88%))

BSE was the most common accreditation (791) with 51 holding EAVCI. There were 149 pre-accreditation echocardiographers recorded.

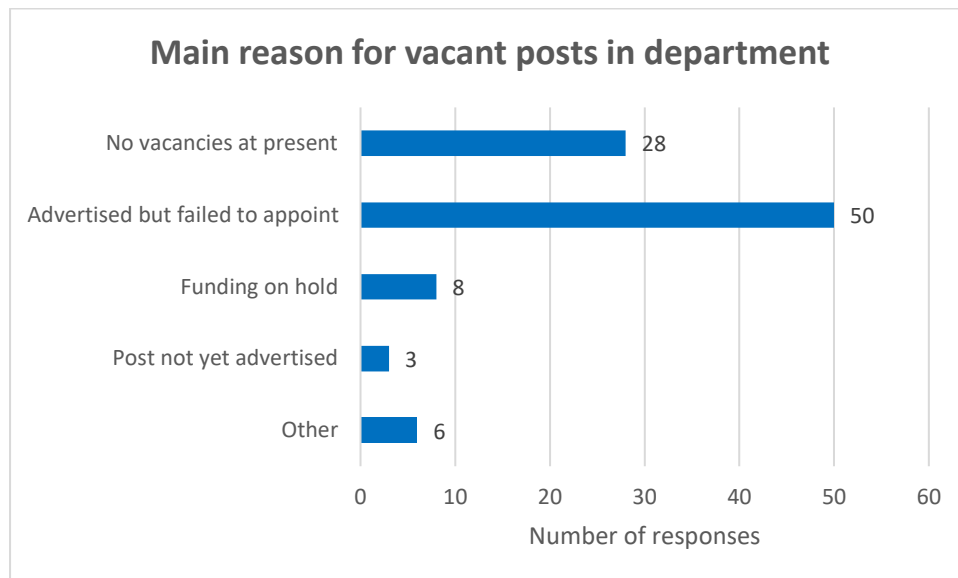
Q14 Does your department have echo support workers



(Responses 95, skipped 12 (88%))

Only 38% (36/95) of respondents had echo support workers (i.e., someone responsible for cleaning/portering/setting up patients for the echocardiographers). There may have been some different interpretations of the term echo support workers.

#### Q15 What is the MAIN reason for there being vacant posts in your department?



(Responses 95, skipped 12 (88%))

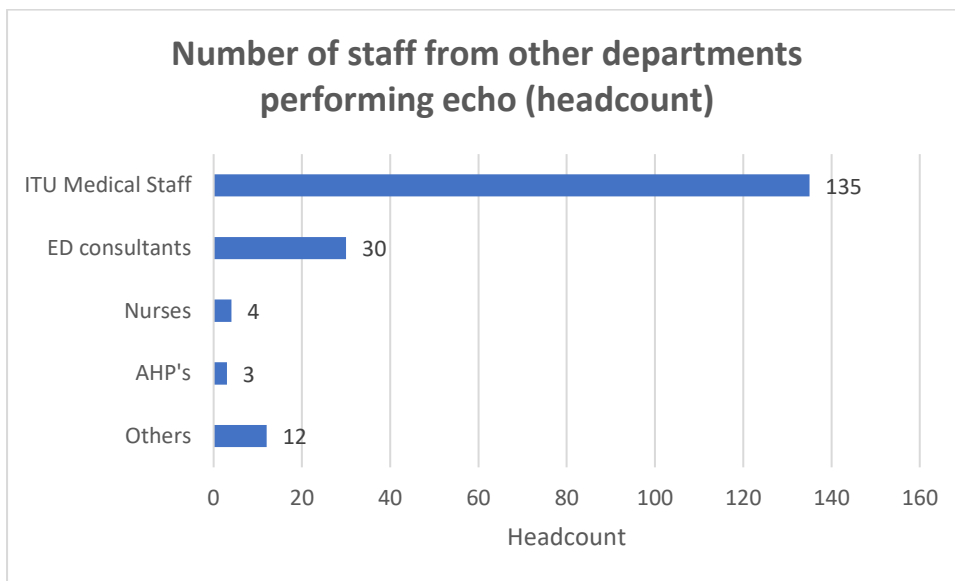
53% of respondents (50/95) had advertised but failed to appoint to vacant posts. 8% (8/95) had funding on hold while 3% (3/95) had not yet advertised a post. 29% (28/95) had no vacancies currently.

Other responses were:

- *Advertised and short listing process is at the moment*
- *Filled band 7 post with a band 6 trainee as no suitably qualified applicants*
- *New position, mid recruitment cycle*
- *Unable to appoint qualified sonographers*
- *Only able to recruit newly qualified Healthcare Scientists*
- *We are advertising at present closing date is at the end of October*



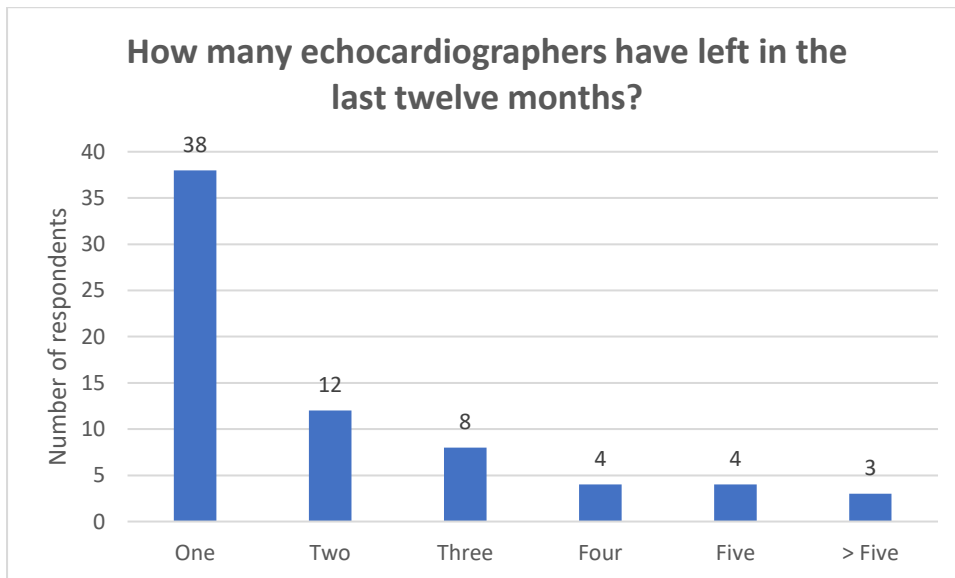
**Q16 How many people perform TTE from other departments?**



*(Responses 87, skipped 20 (81%)), 19 answered "Not known"*

ITU staff were the most common staff from other departments performing echo (135 headcount) followed by ED consultants (30), nurses (4), AHP's (3) and "others" (12)

**Q17 How many echocardiographers have left your organisation in the last twelve months?**

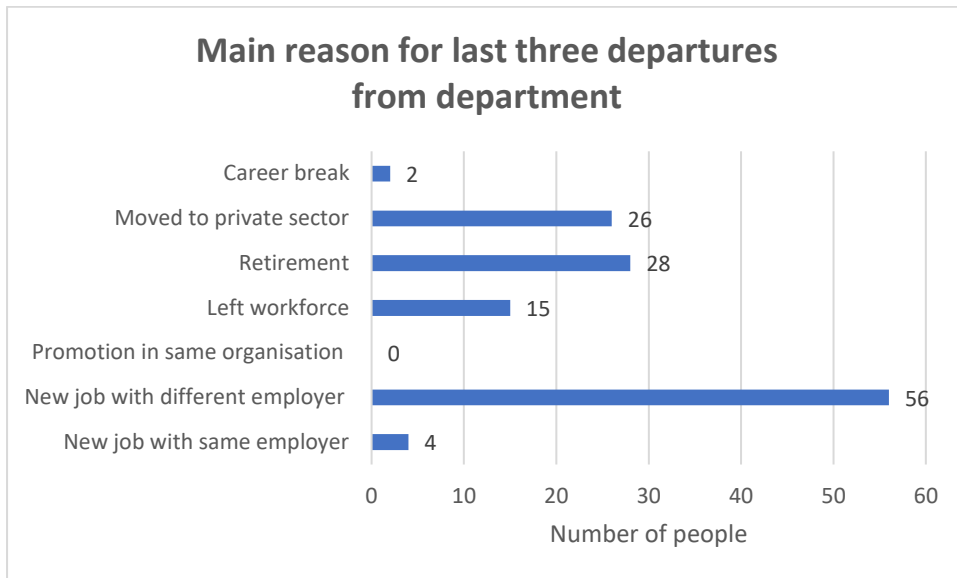


*(Responses 69, skipped 38 (64%))*

55% (38/69) of respondents had one echocardiographer leave in the last twelve months, 17% (12/69) had two, 12% (8/69) three, 6% each (4/69) four or five and 4% more than five leavers.

*Note: no zero option*

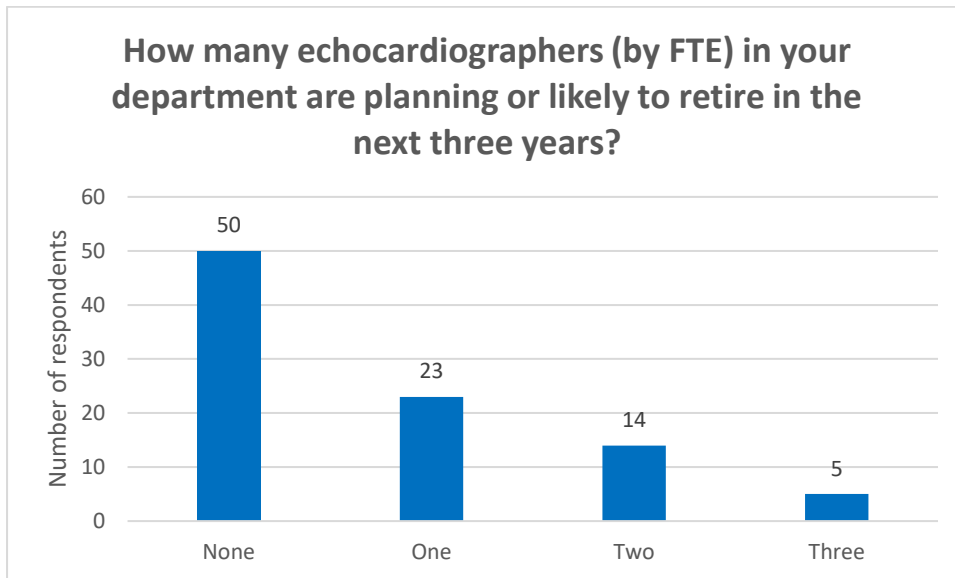
Q18 Please provide the MAIN reason, if known, for the last three departures from your department?



*(Responses 80, skipped 27 (74%))*

The most common reason for leaving was gaining a new job with a different employer (56 departures). Retirement (28) and moving to the private sector (26) were the next most common. 15 departures were due to leaving the workforce, 4 obtained a new job with the same employer and 2 had a career break. None left to be promoted in the same organisation.

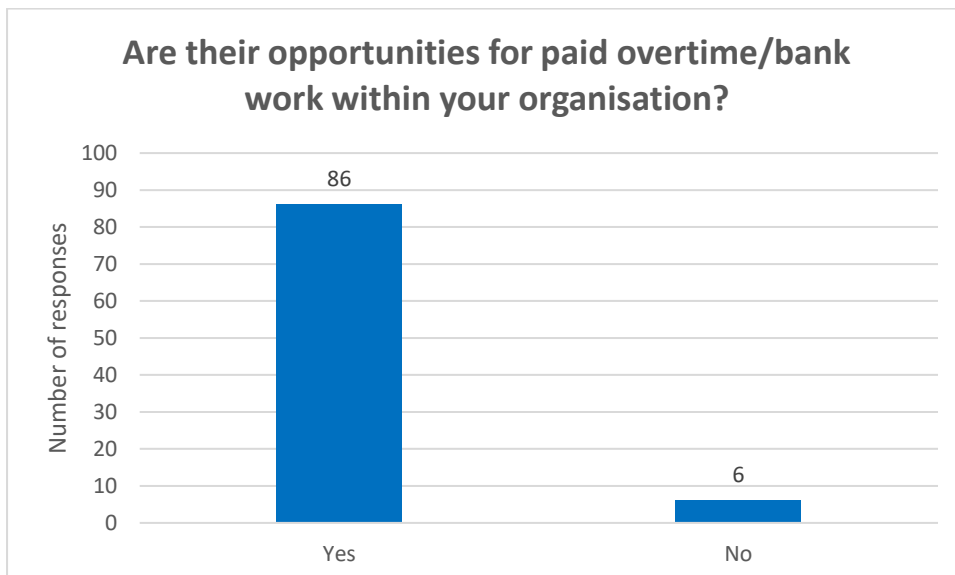
**Q19 How many echocardiographers (by FTE) in your department are planning or likely to retire in the next three years?**



*(Responses 92, skipped 15 (85%))*

54% (50/92) of respondents felt no echocardiographers were planning or likely to retire in the next three years. 25% (23/92) answered one, 15% (14/92) two and 5% (5/92) three.

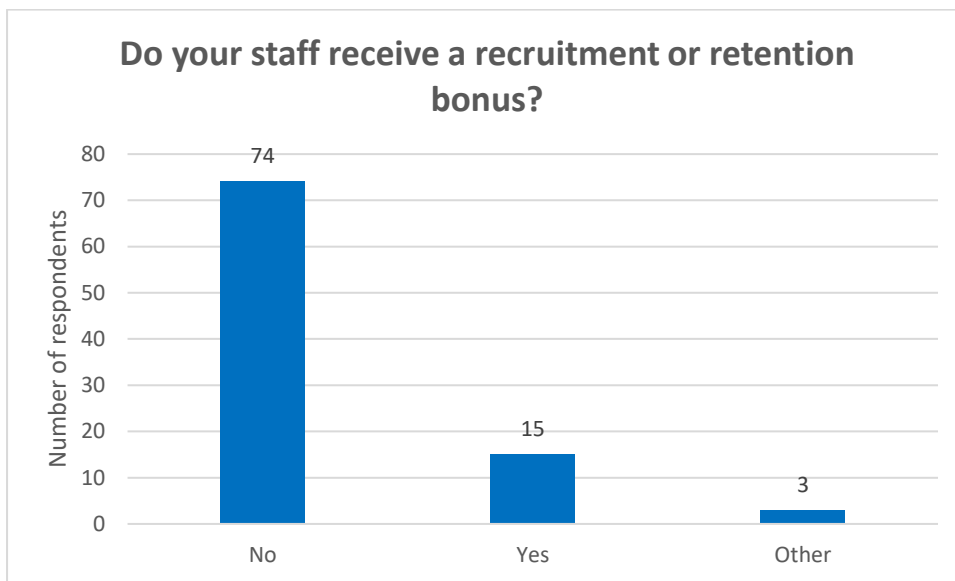
**Q20 Are their opportunities for paid overtime/bank work within your Trust/Health Board/Organisation?**



*(Responses 92, skipped 15 (85%))*

93% (86/92) of respondents offered paid overtime/bank work within their organisations.

**Q21 Do your staff receive a recruitment and retention premium?**



*(Responses 92, skipped 15 (85%))*

Only 16% (15/92) of respondents offered a recruitment or retention bonus.

Respondents who answered other stated:

- *Business proposal currently being written*
- *I don't know*
- *Locally negotiated locum rate not through an agency*

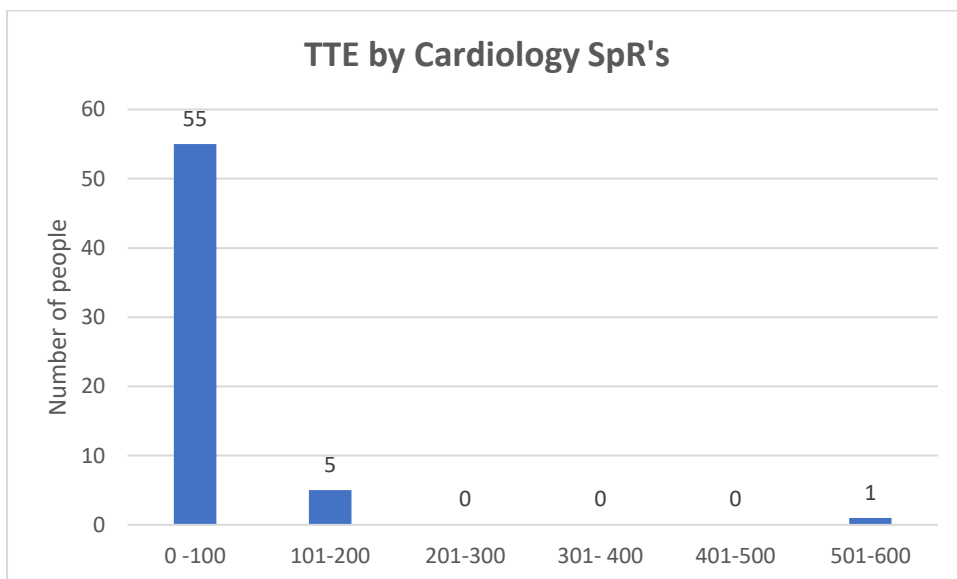
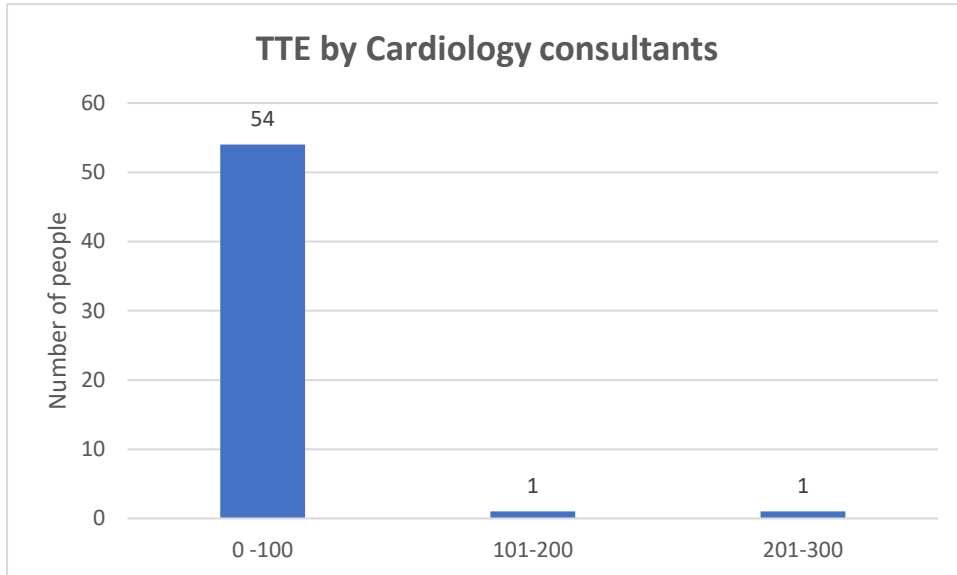
**Q22 Have you recruited members of staff internationally? If so, please specify from which region:**

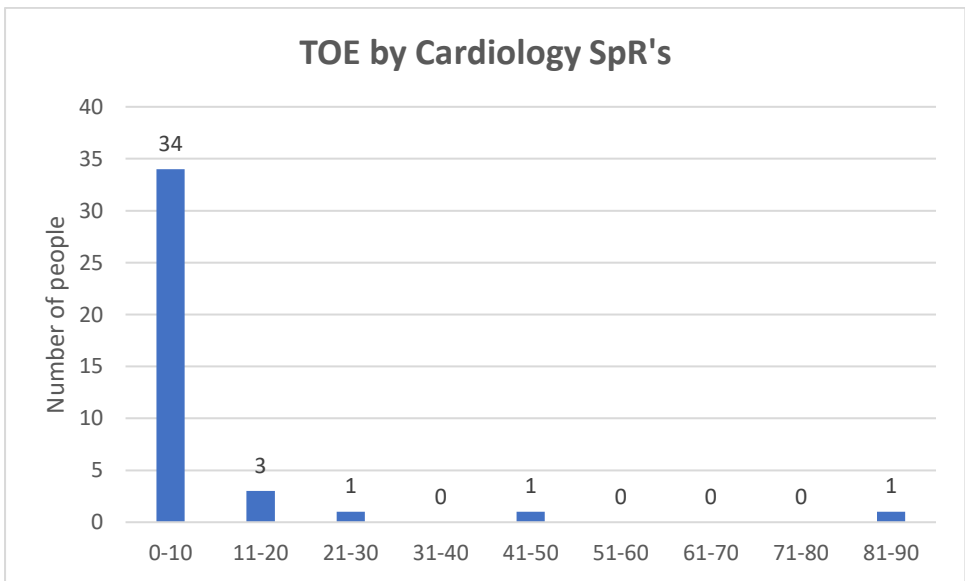
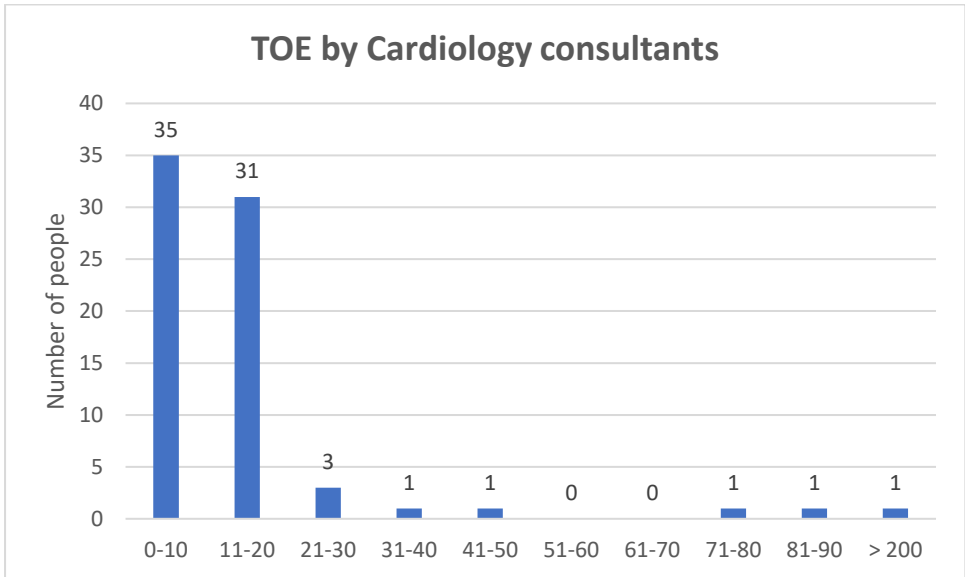
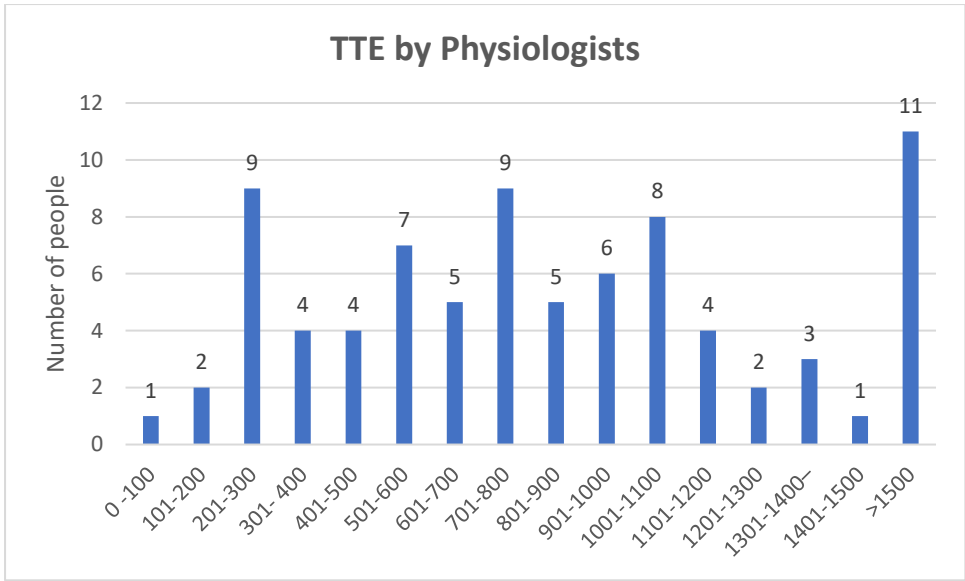


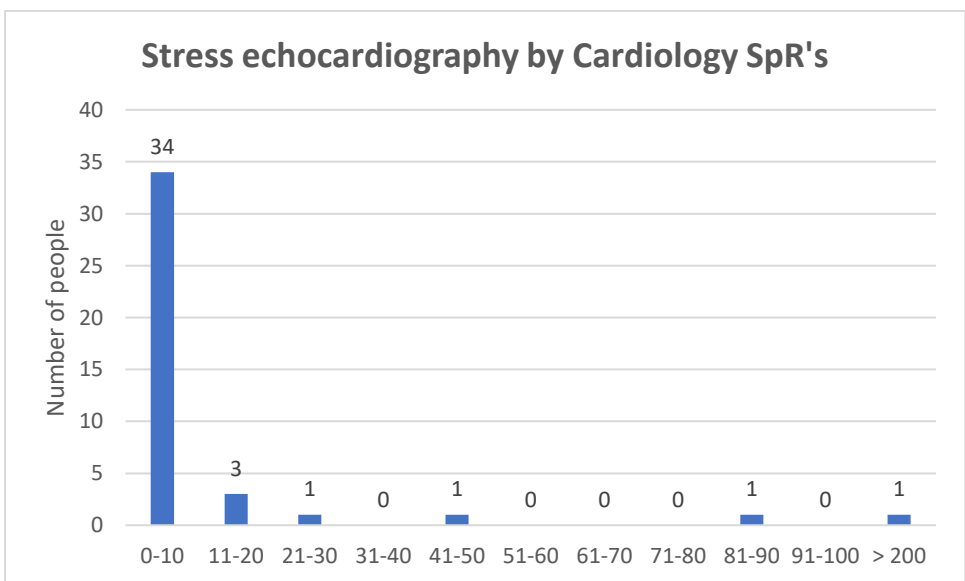
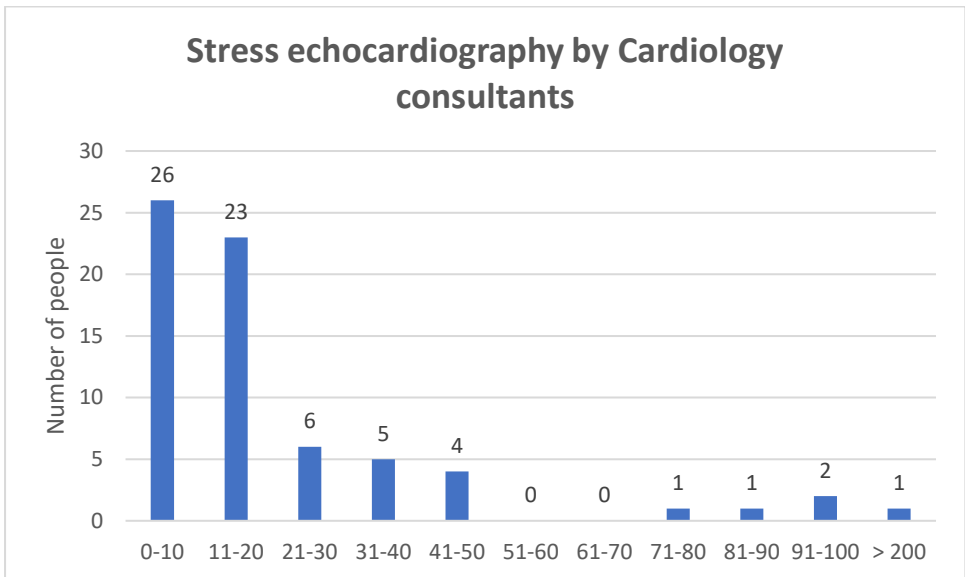
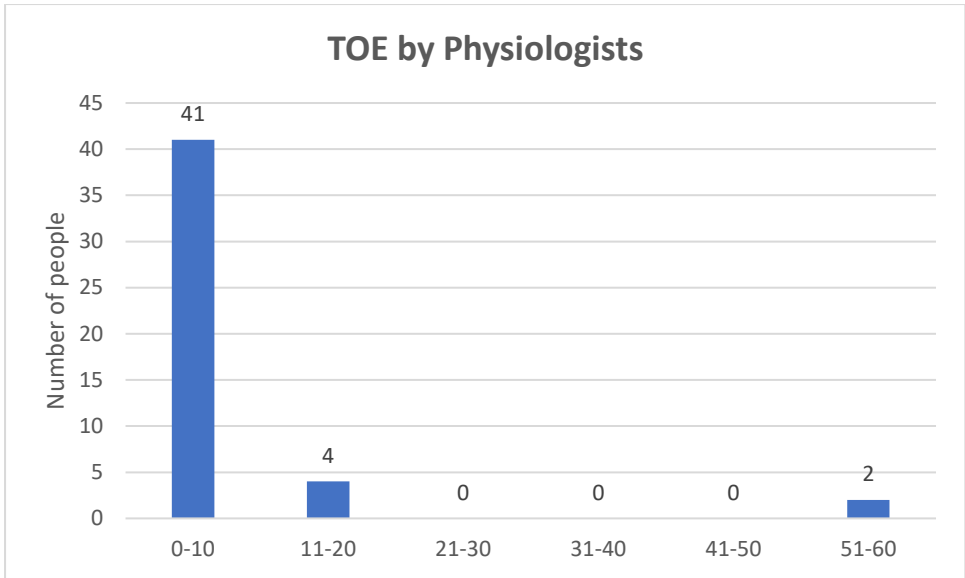
*(Responses 91, skipped 16 (85%))*

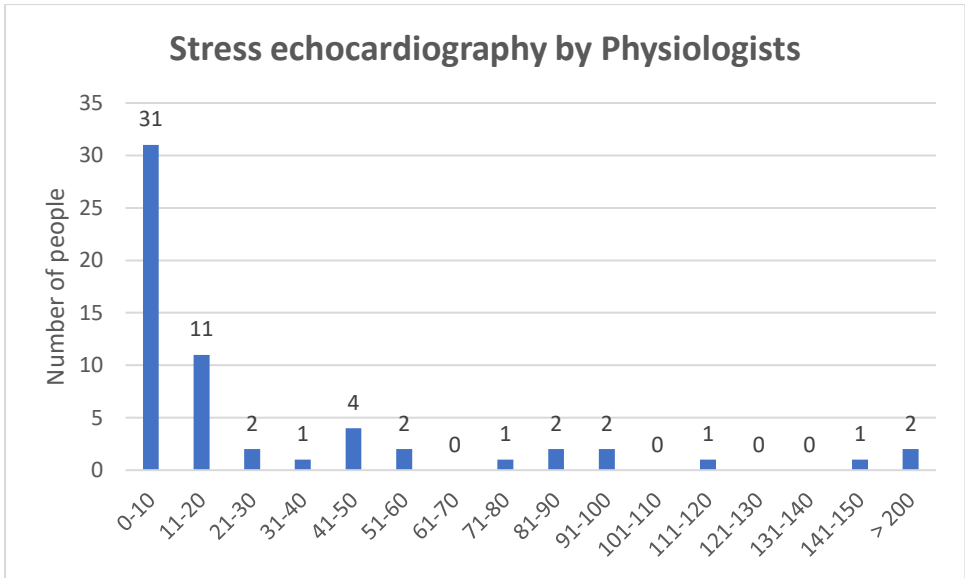
The most common recruitment regions were Europe (18 respondents), Asia (Indian subcontinent only (16) and the rest of Asia (17).

Q23 Approximately how many of the following studies were performed in your department in JULY 2021 and by which speciality (please estimate if exact numbers per speciality are not known):

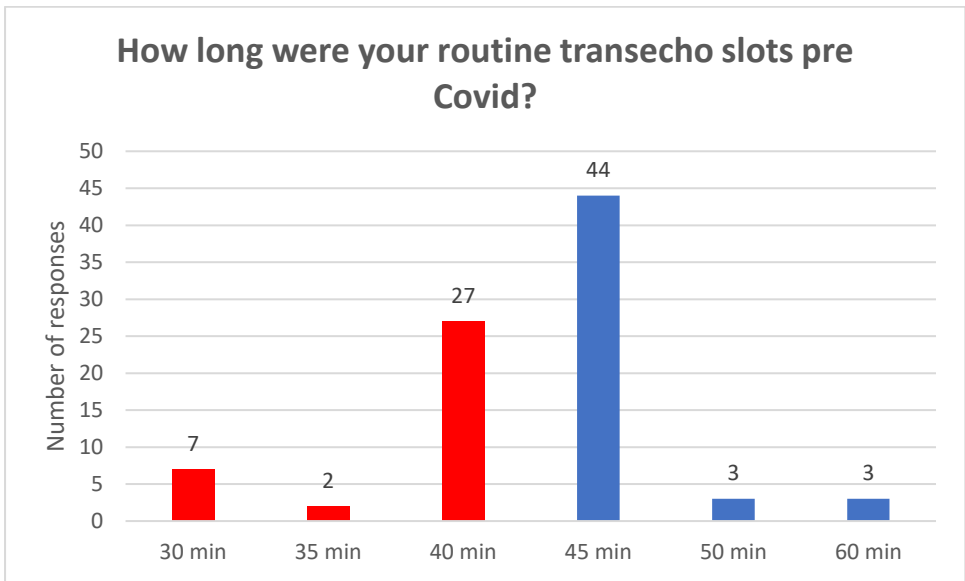








Q24 How long (in minutes) were your routine transthoracic echo slots pre COVID (N.B. this should include time for reporting)?

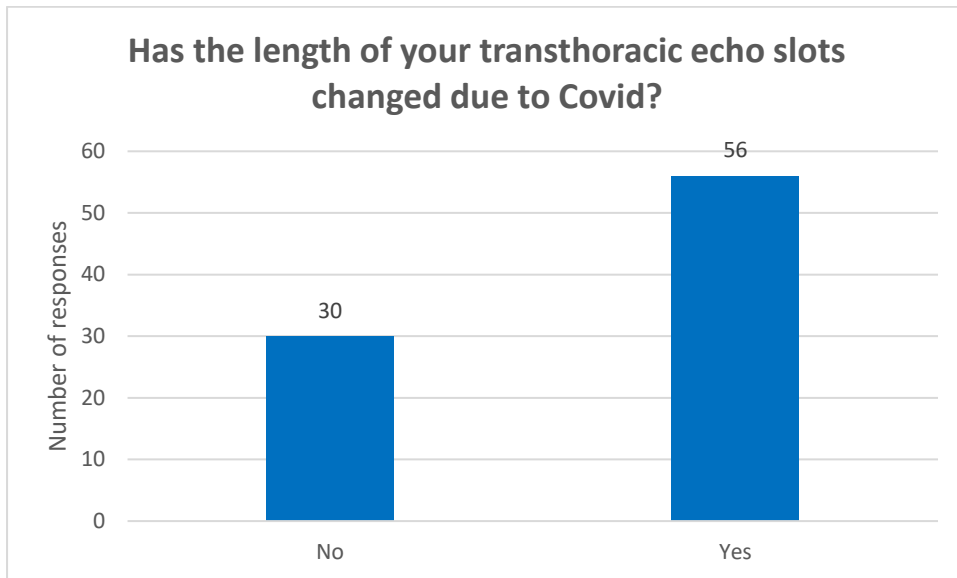


*(Responses 86, skipped 21 (80%))*

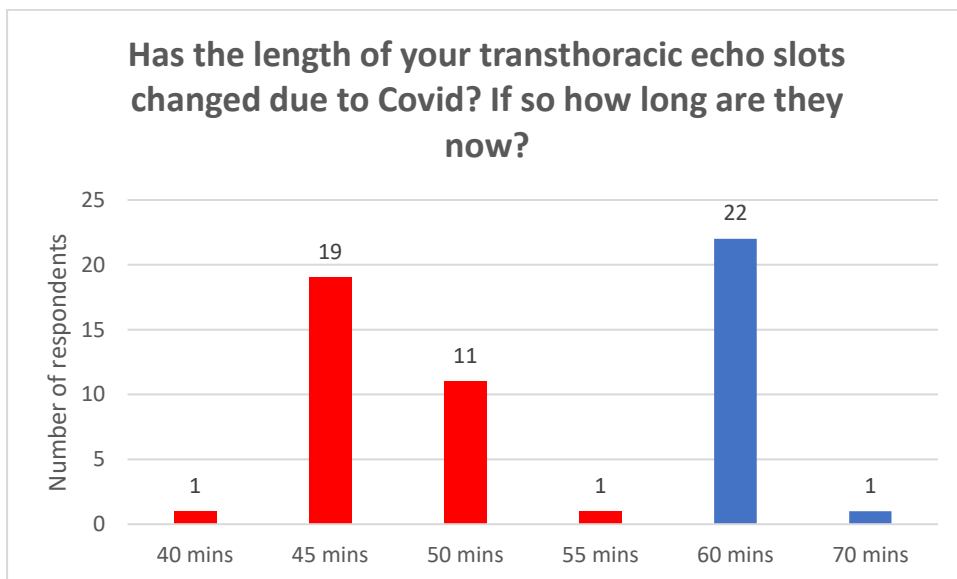
By far the most common slot lengths were 45 minutes (51%, 44/86) or 40 minutes (31%, 27/86). 8% (7/86) respondents had a slot length of 30 minutes. Slots of less than 45 minutes the BSE recommended minimum are marked in red.



Q25 Has the length of your routine transthoracic echo slots changed due to COVID? If yes, please specify slot time during COVID:



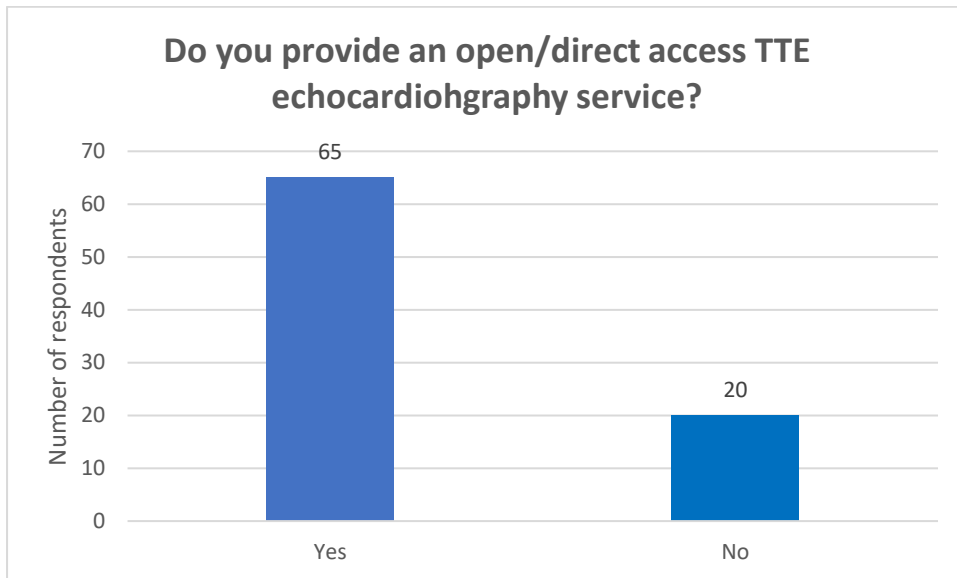
65% (56/86) respondents stated that their slot lengths had changed due to COVID while 35% (30/86) of respondent's slots had stayed the same.



*(Responses 86, skipped 21 (80%))*

Of those respondents who had increased their slot time the most common times were now 60 minutes (40%, 22/55) followed by 45 minutes (35%, 19/34) and 50 minutes (20%, 11/54). Slots of less than 60 minutes (the BSE recommended minimum) are marked in red.

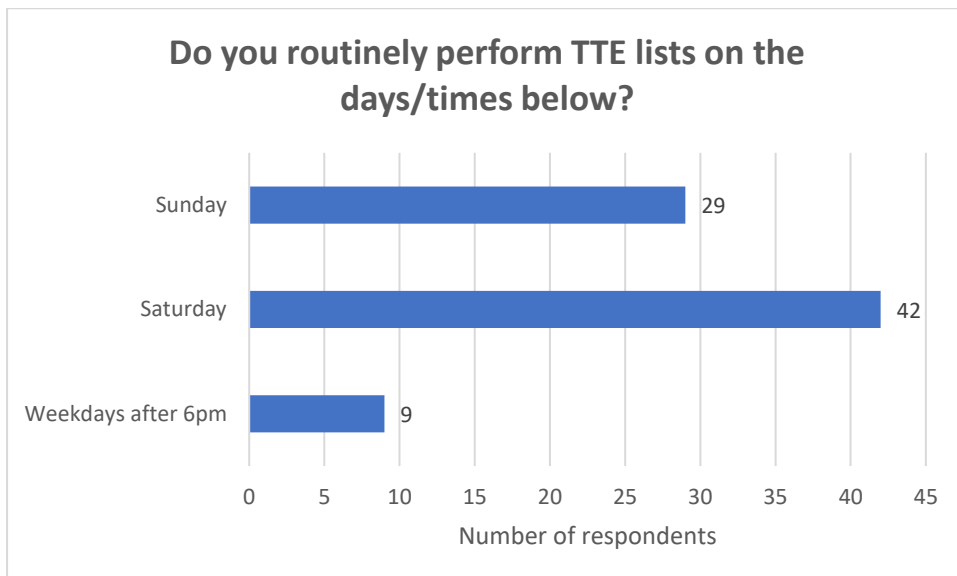
Q26 Do you provide an 'open/direct access' TTE echocardiography service (i.e. requests accepted from any healthcare practitioner in both primary and hospital settings)?



(Responses 85, skipped 22 (79%))

76% (65/85) of respondents provided an open/direct access TTE echocardiography service.

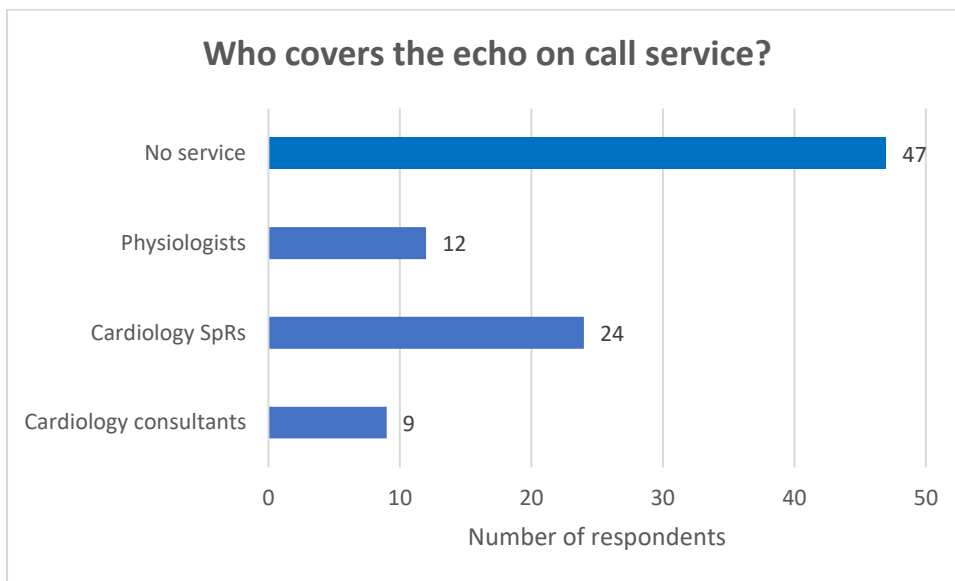
Q27 Do you routinely perform TTE lists on the days/times below?



(Responses 49, skipped 58 (45%))

Of the 49 respondents who answered this question 85% (42/49) provided a Saturday service, 59% (29/49) a Sunday service and 18% (9/49) a weekday after 6pm service.

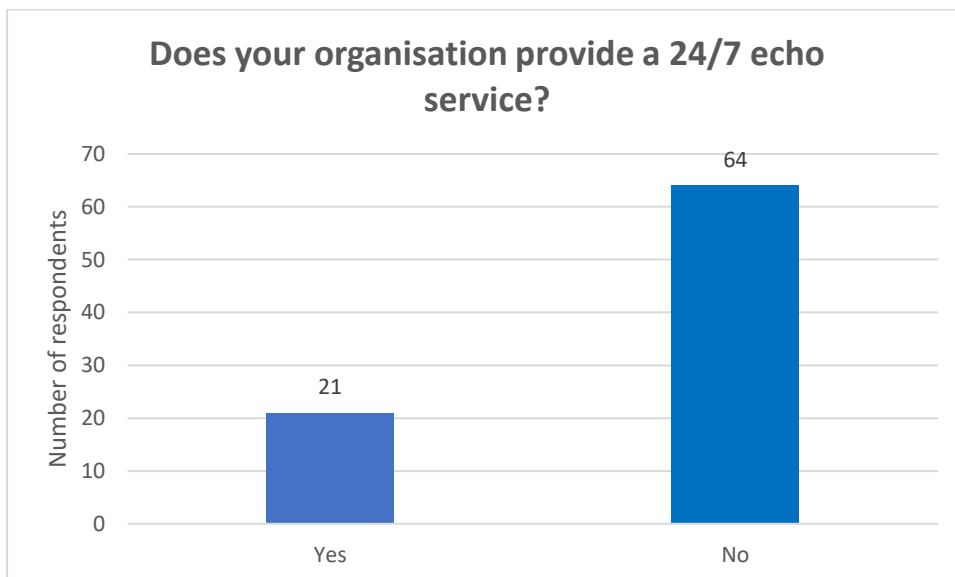
**Q28 Who covers the echo on call service (select all that apply)**



*(Responses 86, skipped 21 (80%))*

Over half (54%, 47/86) of respondents did not offer an echo on call service. Of those that did provide an on-call service this was covered by cardiology SpR's (24/86), physiologists (12/86) or cardiology consultants (9/86).

**Q29 Does your organisation provide a 24/7 echo service?**

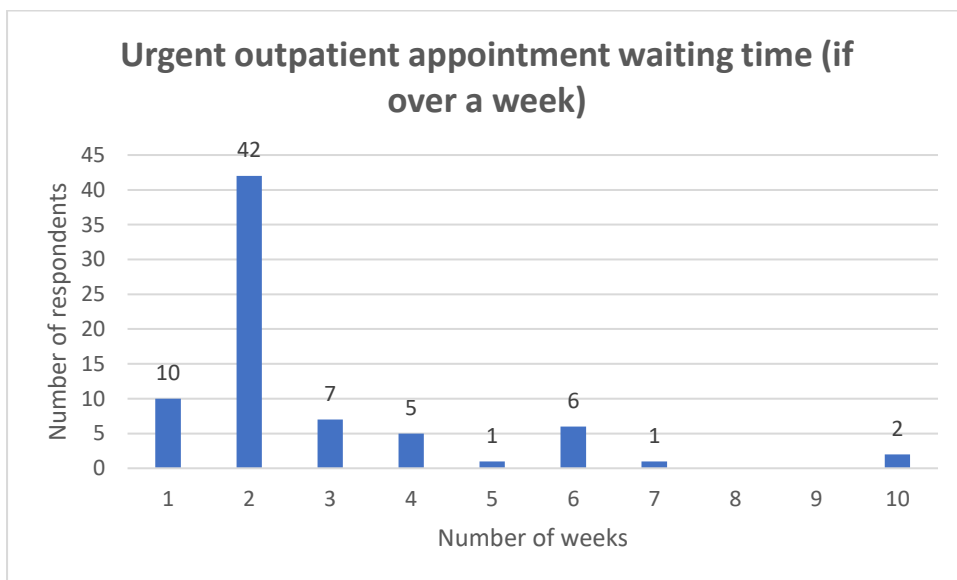
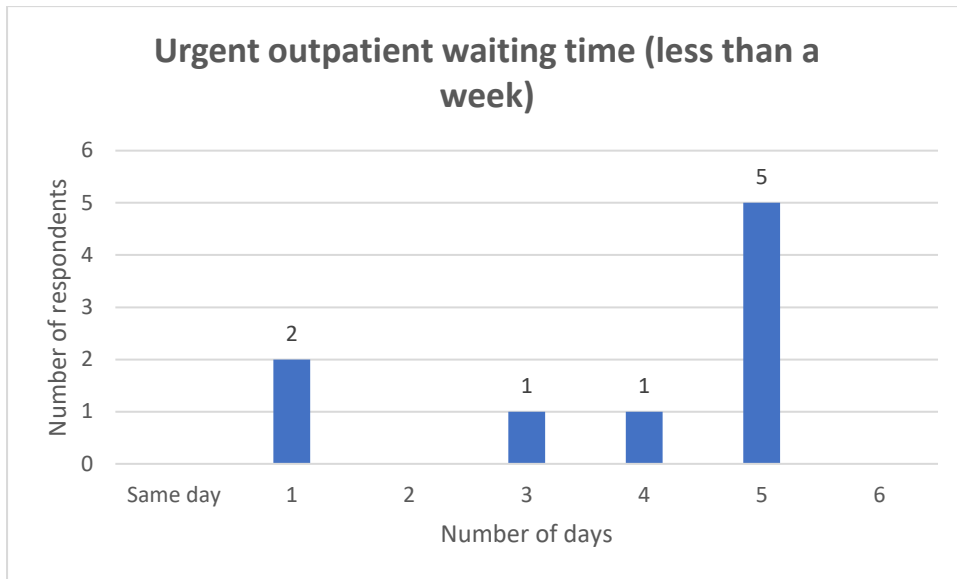


*(Responses 85, skipped 22 (79%))*

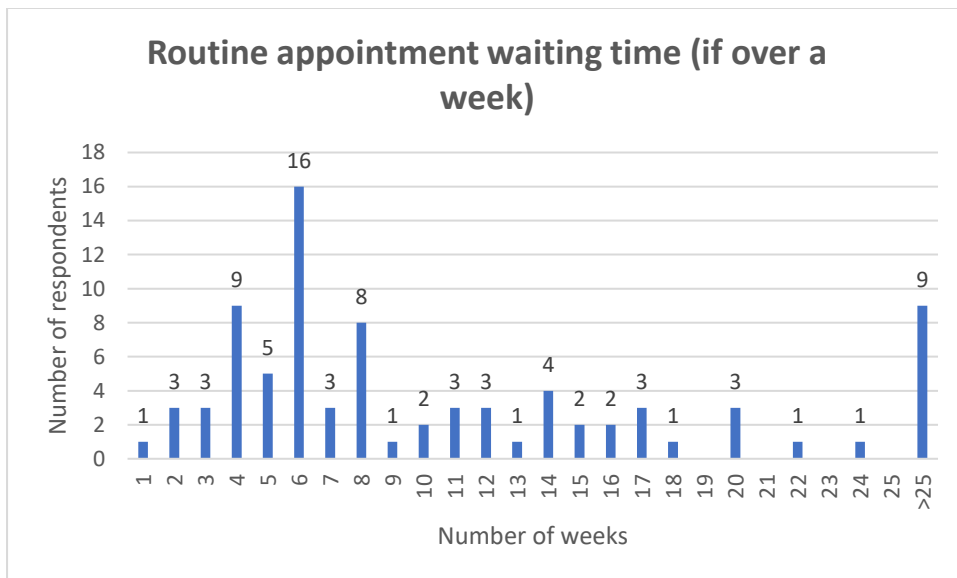
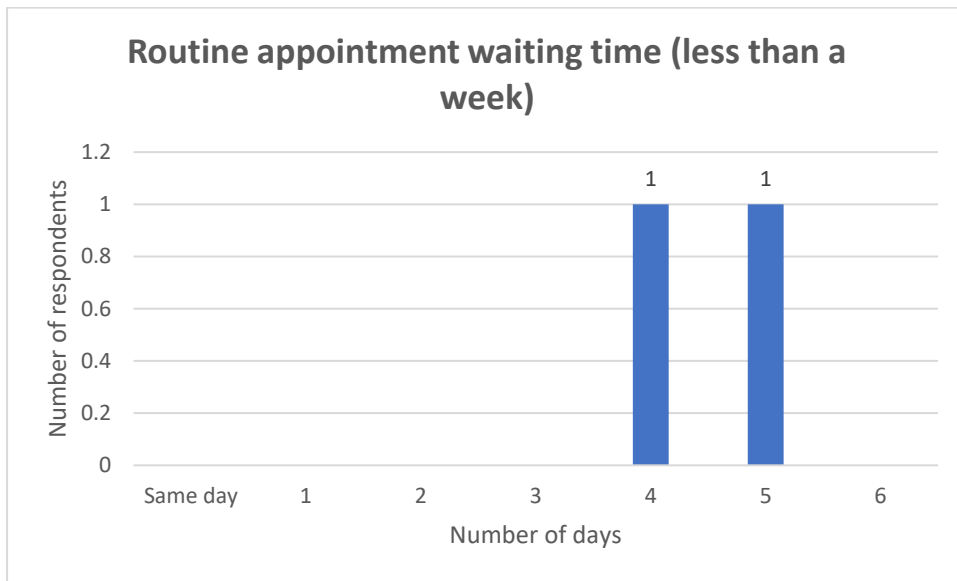
75% (64/85) of respondents did not provide a 24/7 echo service while 25% (21/85) did.

Q30 What is the average wait time for the following types of echo appointments?

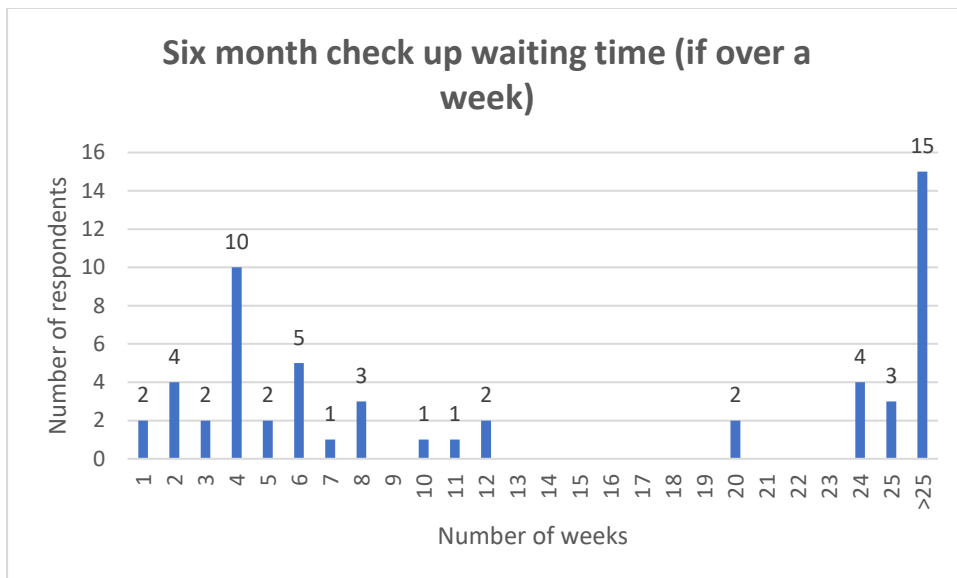
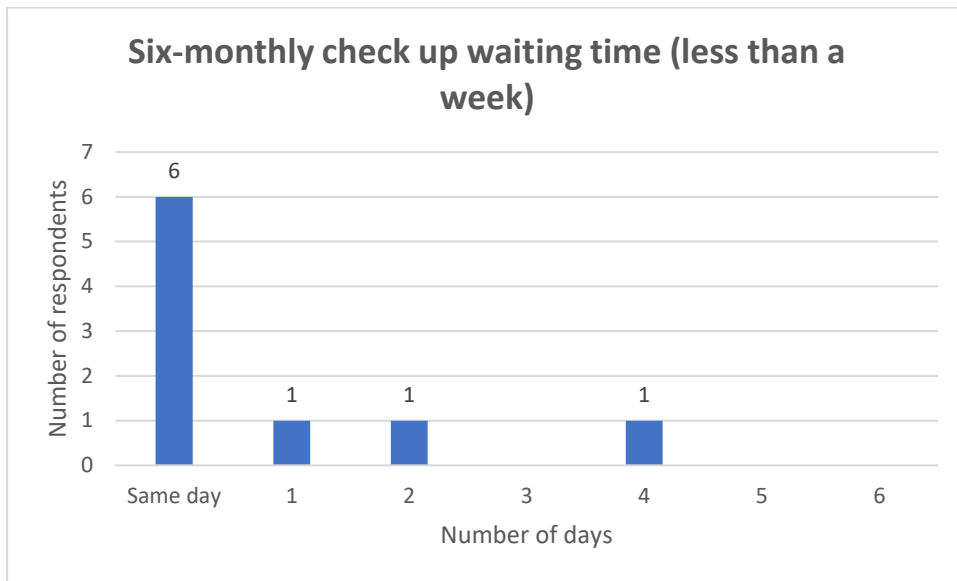
a) Urgent outpatient



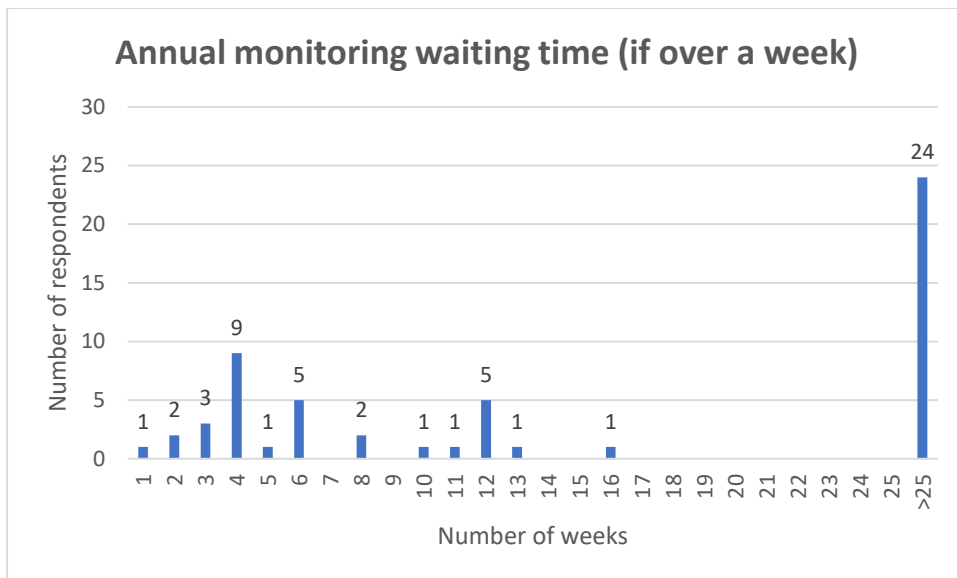
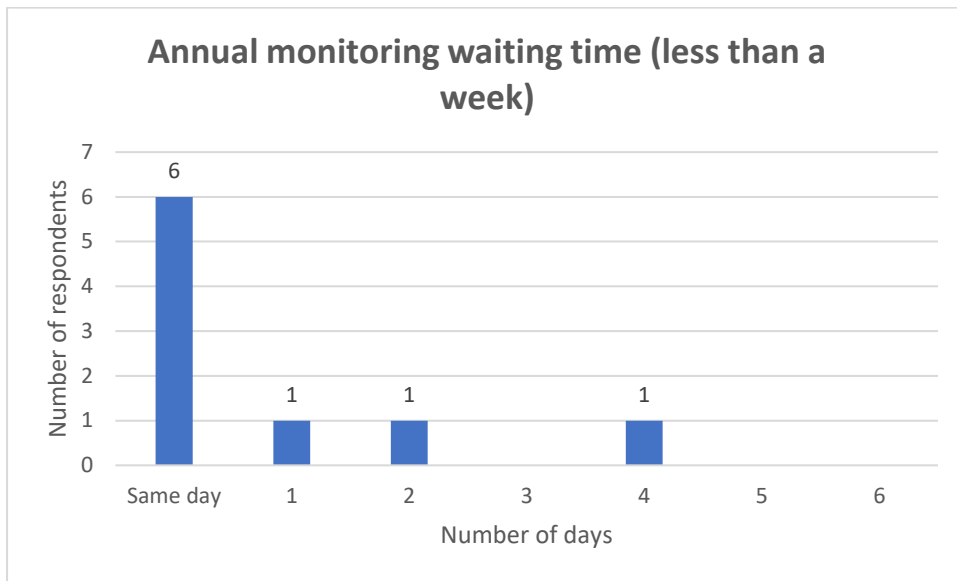
b) Routine



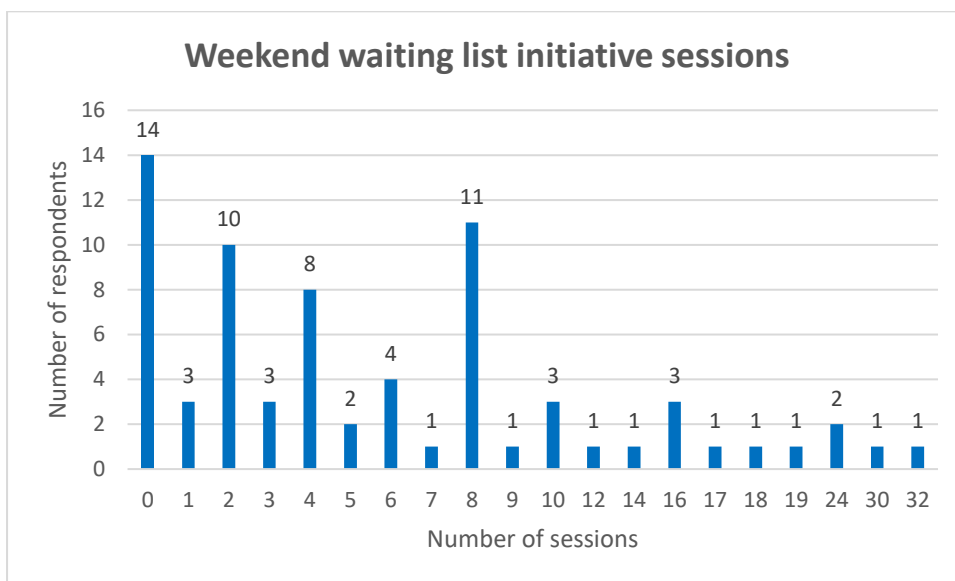
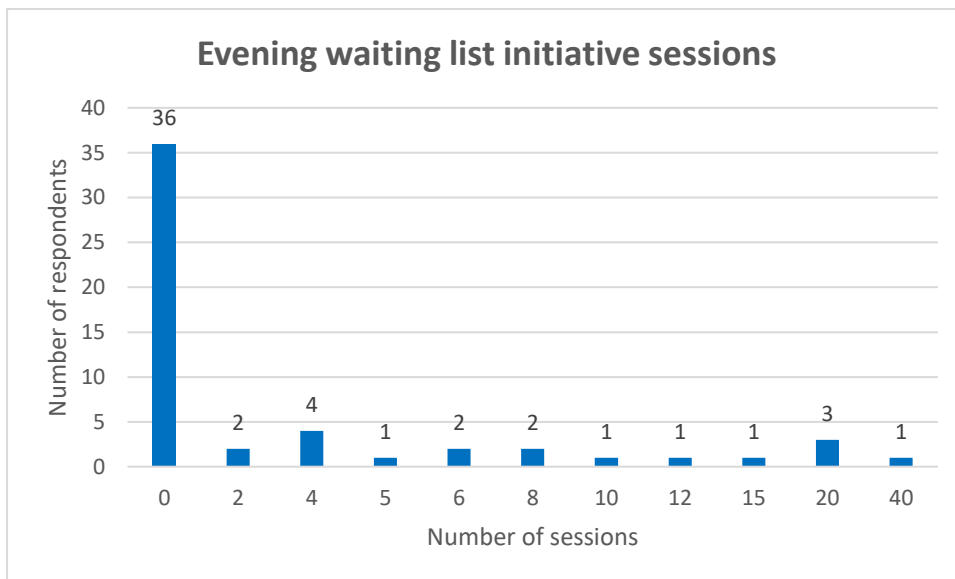
c) Six monthly check up



d) Annual monitoring



Q31 How many waiting list initiative sessions do you currently perform in your department per month (please include the average number per month if the actual number is not available)?

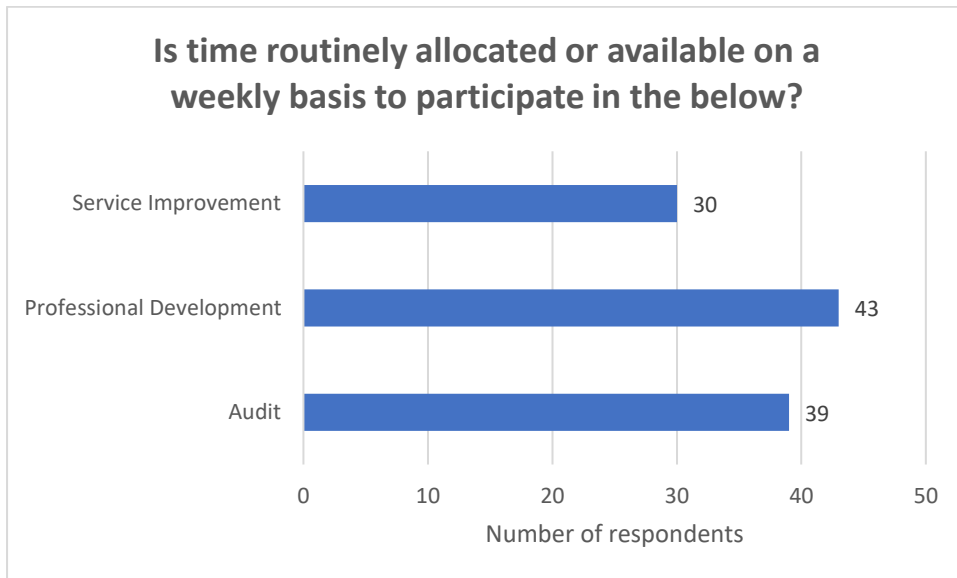


*(Responses 75, skipped 32 (70%))*





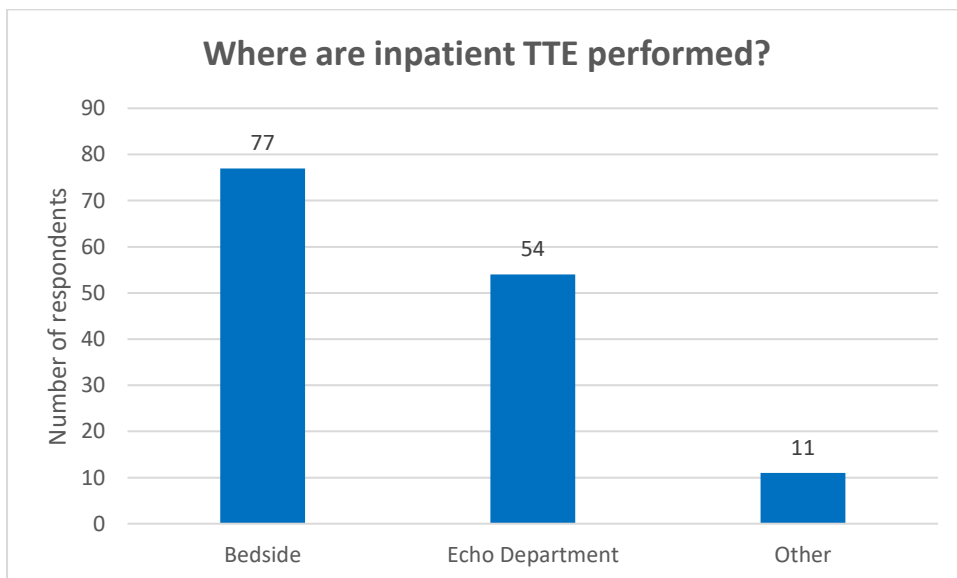
**Q33 Is time routinely allocated or available on a weekly basis to participate in the following? (tick all that apply)**



*(Responses 57 skipped 50 (53%))*

52% (30/57) of respondents had routinely allocated time available for service improvement, 75% (43/57) for professional development and 68% (39/57) for audit.

**Q34 For inpatient TTE, where are they performed? (tick all that apply)**



*(Responses 87, skipped 20 (81%))*

88% (77/87) of respondents performed bedside inpatient TTE with 62% (54/87) in the echo department. There were 11 other responses:

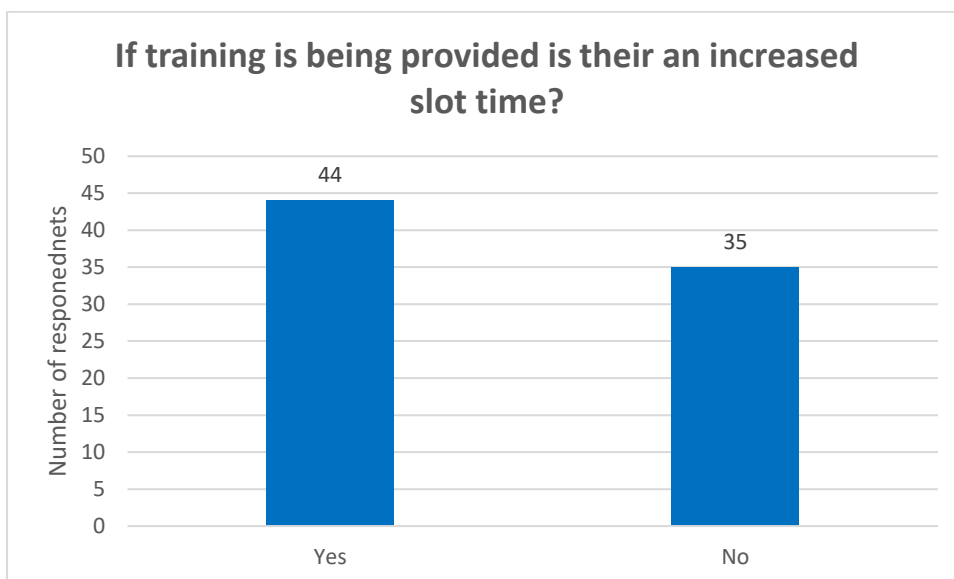
- *Bedside for ITU and emergency CCU. Cardiology registrars perform bedside for urgent cardiology referral from non cardiac wards by hand held system but full echo performed in echo department*
- *Ward dedicated echo room*
- *A separate echo room in ward area*
- *Outpatients only*
- *Mainly department. Bedside studies performed where required*
- *Both - mostly department but at bedside if unwell*
- *Dedicated inpatient room outside of dept due to COVID. Limit cross infection between inpatient and outpatients. This helps to keep outpatient dept a green area*
- *Echo room within ward*
- *Community Hospitals, GP surgeries*
- *ED*
- *Any room available*

**Q35 On average, how many sessions per week are provided for the following specialists?**

Table 2 Training sessions provided by specialists:

	Total Sessions	Responses
Cardiologists	30	49
Cardiology SpRs	218	74
Other consultants	17	42
Physiologists	491	69
Pre accreditation trainees	406	73

**Q36 If training is being provided is their increased echo slot time to allow the trainee adequate opportunity/quality training time?**



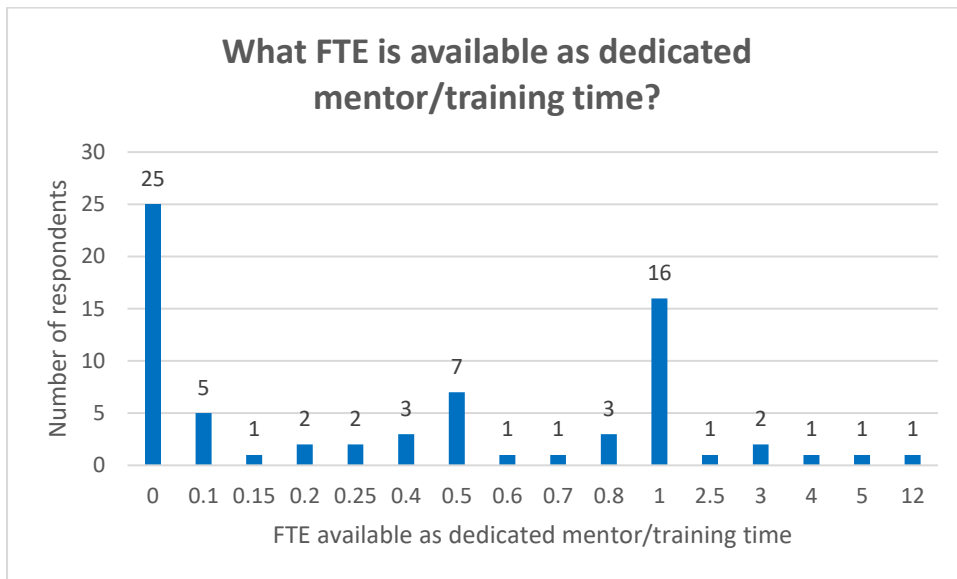
*(Responses 79, skipped 28 (73%))*

55% (44/79) of respondents had an increased slot time for training while 45% (35/79) did not.

There were 23 comments, most commonly 60-minute slots were provided (11 comments). Three respondents mentioned not being able to provide increased slots, two due to workload :

- *1 hr per patient*
- *Currently most training is done on inpatient sessions, when able to scan outpatients unsupervised (but reports still need authorising), an extra 15mins is provided*
- *1 hour slots*
- *For trainees in the early stage they will have 1 hour slot per patient*
- *Increased to 1 hour during initial training then list reduced by 1 towards end of the training*
- *1 hour slots*
- *Training only done in IP sessions with no time restraints*
- *1 hour slots for SpRs*
- *1 hour slots*
- *90-60 mins*
- *Due to the pressures of waiting lists*
- *Hope to improve this in the coming months.*
- *We are hoping to run 'training lists' with an increased slot time*
- *60 minute slots. Trainer would do alternate scans if required.*
- *1 hour slots*
- *60min slots*
- *15 minutes*
- *We did pre COVID but current waiting list preclude this.*
- *Not possible at present due to W/L*
- *70 min slots for all TTE at the moment*
- *No training at the moment*
- *Due to be changed*
- *60 minute slots when planned training reducing to 45 minutes when possible*

Q37 What FTE is available as dedicated mentor/trainer time?



*(Responses 72, skipped 35 (67%))*

The most common FTE available for dedicated mentor/training time was 1 (22%). 34% (25/72) stated that no FTE were available for training or mentoring.



*“Our workload increased significantly within last two years. Outpatient referrals on average 600-700 month. Inpatient referrals 275-300/ month. Our department purchased 5 new echo machines in March 2021, recruited more Physiologists on board and going to get two more. New imaging consultant started in April 2021. 6 Cardiologists in total. Processing Departmental accreditation. We are operating in high standard”*

*“We found that just by simply asking what hours / days our physiologist want to work & accommodate their wishes. We have a happier workforce by working around them, can be challenging sometimes but we find by taking control of their own working pattern we are still able to provide our quality services with very short wait times still.”*

Organisational barriers included technical issues ie IT, lack of management support for business cases

*“Pre covid we were at a baseline staff deficit of 3.36 WTE. A business case has been rejected twice.”*

There was also worker distress:

*“We are broken..... x”*

## Appendix A

Name of Trust/Health Board/Organisation	Name of hospital at which the echo lead is based
Bolton NHS Foundation Trust	The Royal Bolton Hospital
ABUHB	Grange University Hospital
Airedale NHS Foundation Trust	Airedale General Hospital
Ashford and St Peter's	St Peter's Hospital
Barking, Havering & Redbridge University Hospitals NHS Trust	Queen's Hospital, Romford
Barnsley Hospital	Barnsley Hospital
Barts Health NHS Trust	Barts Health NHS Trust
BCUHB Ysbyty Gwynedd	Ysbyty Gwynedd
Belfast Trust	Royal Victoria Hospital
Betsi Cadwalader University Health Board	Glan Clwyd
Betsi Cadwaladr University Health Board	Ysbyty Gwynedd
Birmingham Womens and Childrens Hospital	Birmingham Childrens Hospital
Bucks healthcare NHS Trust	Stoke Mandeville Hospital
Cardiff and Vale	University Hospital of Wales Cardiff
Countess of Chester Hospital	Countess of Chester
Cwm Taf Morgannwg NHS Trust	Prince Charles Hospital
Dorset County Hospital NHS Trust	Dorset County Hospital
Duchy hospital	Duchy hospital
East Cheshire NHS Trust	Macclesfield Hospital
East Sussex Healthcare Trust	Eastbourne General Hospital
Echogenicity limited	Community
EKHUFT	Kent & Canterbury Hospital
Epsom & St Helier University Hospitals NHS Trust	St Helier Hospital
ESNEFT	Colchester
George Eliot Hospital NHS Trust	George Eliot Hospital
Gloucestershire NHS Foundation Trust	Gloucester Royal
Good Hope Hospital, part of University Hospitals Birmingham NHS Foundation Trust	Good Hope Hospital
Great western NHS trust	Great western hospital Swindon
Guys & St Thomas's/Royal Brompton Hospital	Royal Brompton Hospital
Guy's and St Thomas' NHS Foundation Trust	St Thomas' Hospital
HAMPSHIRE HSOPTIALS NHS FOUNDATION TRUST	ROYAL HAMPSHIRE COUNTY HOSPITAL
Hywel Dda University Health Board	Glangwili Hospital
Hywel Dda University Health Board	Prince Philip Hospital
InHealth EchoTech	Various community based settings in Oxford



Isle of Wight NHS Trust	St Marys Hospital
James Paget University NHS Trust	James Paget University NHS Trust
King's college Hospital	King's College Hospital
Kingston Hospital NHS Foundation Trust	Kingston Hospital
L and G NHS Trust	Queen Elizabeth NHS Trust
Lancashire Cardiac Centre	Blackpool Victoria Hospital
Leeds Teaching Hospitals Trust	Leeds General Infirmary - Congenital Echo Department
Liverpool foundation hospital trust	Royal Liverpool Hospital
Liverpool University hospitals NHS trust	Aintree
London North West University Healthcare NHS Trust	Northwick Park Hospital
Maidstone & Tunbridge Wells NHS Trust	Tunbridge Wells Hospital
Manchester Foundation Trust Wythenshawe	Wythenshawe
Mid and South Essex NHS Foundation trust	Essex Cardiothoracic Centre
Mid Yorkshire NHS Trust	Pinderfields Hospital
Milton Keynes University Hospital - NHS trust	Milton Keynes University Hospital
Newcastle upon Tyne NHS Foundation Trust	Freeman Hospital
NHS Fife	Victoria Hospital Kirkcaldy
NHS Grampian	Aberdeen Royal Infirmary
NHS Highland	Raigmore Hospital
NHS Lothian	RIE
NHS Orkney	The Balfour
NHS Tayside	Ninewells Hospital
Norfolk and Norwich University Trust	Norfolk and Norwich University Trust
North Bristol NHS Trust	Southmead Hospital
North Tees and Hartlepool	University Hospital of North Tees
North West Anglia NHS Foundation Trust	Peterborough City Hospital
Northern Devon Healthcare NHS Trust	Northern Devon district hospital
Nottingham University Hospitals Trust	Nottingham City Hospital
Oxford University Hospitals NHS Foundation Trust	John Radcliffe Hospital
Poole Hospital, University Hospitals Dorset	Poole Hospital
Princess of Wales hospital NHS	Princess of Wales hospital
Rotherham Hospital Foundation Trust	Rotherham Hospital Foundation Trust
Royal Berkshire NHS Foundation Trust	Royal Berkshire Hospital
Royal Cornwall Hospitals Trust	Royal Cornwall Hospital
ROYAL DEVON & EXETER HOSPITAL NHS TRUST	ROYAL DEVON & EXETER HOSPITAL NHS TRUST
Royal Free Foundation NHS Trust - Barnet Site	Royal Free London
Royal Papworth Hospital	Royal Papworth Hospital
Royal Surrey County Hospital, Guildford, Surrey	Royal Surrey County Hospital

Royal United Hospitals, Foundation Trust	Royal United Hospital Bath
Royal Wolverhampton NHS Trust	New Cross Hospital
Salford Royal NHS Foundation Trust, Northern Care Alliance	Salford Royal NHS Foundation Trust
Sandwell and West Birmingham Hospitals NHS trust	Birmingham City Hospital
Sheffield Teaching Hospitals	Northern General Hospital
Sherwood forest hospitals NHSFT	King's mill hospital
South Eastern Health and Social Care Trust	Ulster Hospital, Dundonald
Southern Health NHS Foundation Trust	Lymington New Forest Hospital
Southport & Ormskirk NHS Trust	Southport DGH
St Helens and Knowsley Teaching Hospital	Whiston Hospital
Swansea Bay University Health Board	Morrison Hospital
Tameside & Glossop Integrated Care NHS Foundation Trust	Tameside & Glossop Integrated Care NHS Foundation Trust
Taunton and Somerset NHS Foundation Trust	Musgrove Park Hospital
Tayside Health Board	Ninewells Hospital
The Great Western Hospital - NHS	The Great Western Hospital
The Hillingdon Hospitals NHS Foundation Trust	Hillingdon Hospital NHS Trust
UHCW NHS Trust	University Hospital, Coventry
Ultracardiac Ltd	Ultracardiac HQ Plymouth
Universities Hospitals Dorset	Royal Bournemouth Hospital
University hospital Bristol	Bristol heart institute
University Hospital of North Durham	University Hospital of North Durham
University Hospital Plymouth	University Hospital Plymouth
University Hospital Southampton NHS Foundation Trust	Southampton General Hospital
University Hospitals of Derby and Burton NHS Foundation trust	Royal Derby Hospital
University Hospitals of Leicester NHS Trust	Glenfield Hospital
University hospitals of Morecambe Bay NHS trust foundation	Royal Lancaster Infirmary
University Hospitals, Birmingham NHS Foundation Trust	Good Hope Hospital, Sutton Coldfield
Walsall manor	
Warrington and Halton Hospitals NHS Foundation trust	Warrington and Halton Hospital
West Suffolk NHS FT	West Suffolk NHS FT
Western health & Social Care Trust	Altnagelvin Hospital
Western Isles Health Board	Western Isles Hospital
Whittington Hospital	Whittington Hospital
York and Scarborough Teaching Hospitals NHS Foundation Trust	Scarborough General Hospital

