British Heart Foundation

The Heartbeat of Heart Care:

Cardiac Workforce Census 19 June 2023

September 2024

Cardiac workforce census

Foreword

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There are 6.4 million people living with cardiovascular disease in England, and millions more are at risk. They all require and rightly expect the highest standards of treatment and support from healthcare professionals. Yet despite the tireless efforts of NHS staff, these high standards of care are not always being met. There are record numbers of people waiting far too long for heart care, our cardiac workforce is burnt out and stretched to its limits, and the health service is critically under-resourced. Simply put, demand for heart health services is outstripping the increasing need, and tragically, patients are paying the price with their lives.

It won't be easy. But it is still possible to mend our NHS and to deliver high quality and timely heart care in fit-for-purpose facilities, if resource matches requirements and a heart disease action plan is forthcoming to help improve services. Workforce shortages are a key limiting factor to this successful recovery, something which the BHF has been consistently highlighting since the outbreak of the pandemic. However, we are hindered by insufficiently detailed information to know precisely where the most vulnerable gaps in the workforce lie.

We're pleased to have completed our first census of the cardiac workforce in England. While there are limitations, it provides us with many fascinating insights. For the first time, we have a much clearer picture of cardiology subspecialities. We can see what working patterns are like, how demographics differ, and where potential retirement hot spots exist. For example, around one in five consultant cardiologists and one in seven cardiac nurse specialists are above the age of 55. This helps to paint a detailed, though complex, picture of the cardiac workforce today.

We can see that only one in five cardiology consultants are female. Of consultants working full-time, male consultant cardiologists are more likely to be contracted to work significantly more hours a week than female consultants.

Is this a matter of personal choice, or are there potential inequalities across some contracts, and ways of working? How can we build a more inclusive cardiology workforce?

Only 3 per cent of all consultants listed academic cardiology as a subspecialty, something which concerns us greatly as the biggest independent funder of cardiovascular research. It raises alarm bells about the future pipeline of clinician researchers.

There may be other under-represented groups which better data could help us to identify.

This report is only a snapshot of the cardiac workforce in England on one day in summer 2023, but it throws up issues that we will explore in more detail going forward.

We received a strong response rate to the census from so many Trusts, which emphasises their level of interest, and their commitment to better understand their cardiac workforce. Unfortunately, not all Trusts with cardiology services were able to respond, reflecting the immense pressure they are under and the major challenge of attempting to gather information on a workforce without mandate or significant resource. That is why we want to see commitment from NHSE and the Government to collect data robustly and routinely on the cardiovascular workforce and make it accessible.

Better cardiovascular care provision is fundamental for a healthier and more prosperous nation. National data collection and better workforce planning needs to start now to jump-start NHS productivity and economic growth and give healthcare staff and heart patients hope of a brighter future. By doing this, we can build a stronger, better, and more resilient cardiovascular workforce so doctors, nurses and other health professionals are able to deliver the standard of care patients want and need.

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Acknowledgments

BHF commissioned research agency IQVIA to coordinate our census activity. IQVIA oversaw centralisation of data collection and initial analysis of responses.

We are grateful to the British Cardiovascular Society and to NHSE Cardiac Networks for their support with this project, from input in planning to promoting the census to their members.

We are grateful for the views provided to us by a group of sector experts and stakeholders who reviewed early drafts of this work. Their insights helped to shape some of our conclusions and recommendations.

The cardiovascular workforce

There are at least 6.4 million people living with cardiovascular disease (CVD) in England, and millions more at risk.

Throughout their care and treatment, people living with CVD are supported by a wide range of health and care professionals across the health system who deliver prevention of heart disease, cardiology and cardiac surgery and cardiac rehabilitation services, from primary care to specialist and subspecialty secondary care services and community care.

The specialist cardiac workforce is made up of health professionals whose primary job is preventing, diagnosing and treating cardiovascular disease. This includes cardiologists, cardiac specialist nurses, cardiac physiologists, cardiothoracic surgeons, and other allied health professionals.

While there is no exact definition or consensus on the roles that comprise the specialist cardiac workforce, *Table 1* provides a working classification. This was developed by BHF in collaboration with sector experts in our 2022 evidence review of the cardiac workforce,[1] a literature review and insight-gathering exercise.

NHS England (NHSE) statistics show that, by the end of 2023, there were more than 28,000 full-time equivalent (FTE) staff in hospital and community Trusts working in cardiovascular care in England.[2] There were approximately **3,900** FTE doctors working in cardiology and **1,000** cardiothoracic surgeons. This includes around **1,700** FTE consultant cardiologists, and around **420** FTE consultant grade cardiothoracic surgeons.

Within secondary care, there is also a large pool of managerial, facilities, administrative and support staff, as well as scientific and technical team members working with clinical cardiology and cardiothoracic surgical colleagues. A wider primary and community-based care workforce supplements the core specialist team that includes GPs, pharmacists, non-clinical support roles, and social and voluntary care providers. However, don't know how many people working in these roles primarily provide care for cardiovascular patients.

While *Table 1* gives an overview of the multiple roles in the specialist clinical workforce, our census focuses on a specific slice of this – specialist medical and nursing staff working in cardiovascular care in NHSE Trusts.

Table 1. Overview of roles of the specialist cardiovascular workforce

Primary and Community Care	
GPs with extended roles in heart conditions (with special interests)	Cardiac rehabilitation specialists (nurses, physiotherapists and exercise specialists)
Dieticians specialising in heart conditions	Clinical psychologists specialising in heart conditions
Secondary and Tertiary Care	
Cardiologists (consultants, higher speciality trainees, academics, associate specialists)* **FY1, FY2 and core trainees working in cardiology care***	**Specialist nurses (heart failure, arrhythmia, chest pain, cardiac rehabilitation, adult congenital heart disease and inherited cardiac conditions)***
Cardiac physiologists	Cardiology ward nurses
Advanced clinical practitioners in cardiology	Cardiothoracic surgeons
Cardiac anaesthetists	Cardiac perfusionists
Specialist pharmacists	Physician associates working in cardiology
Radiologists and radiographers who specialise in cardiology	Cardiac clinical scientists

**Note – these are the specific roles captured in the 2023 census*

Prioritising the cardiovascular workforce

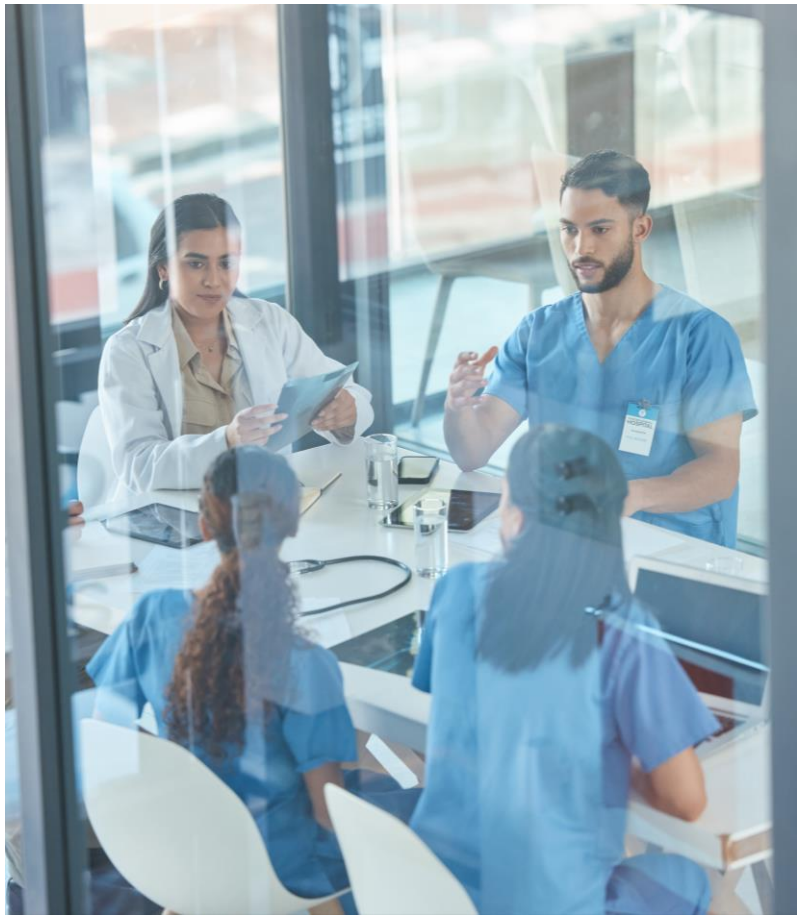
The cardiovascular workforce is central to heart patients receiving the care they need, when they need it.

Specialist care, delivered as soon as it's needed, is critical for people at risk of or living with heart and circulatory conditions to prevent unnecessary disability and premature death.

By the end of May 2024, over **421,000** people were waiting for heart care in England. From May 2023 to May 2024, the overall size of the waiting list increased by 2%.[3] However, for cardiac care, the waiting list grew by 7% in the same period. In the same period, the percentage of people waiting more than 18 weeks for a cardiac appointment (the national begin treatment target set by the NHS) increased from 36% to 39%. Staff shortages, challenges to workforce recruitment and retention, and evolving demand exacerbated by the pandemic, have all made it harder to deliver the highest level of heart care to patients.

While the 2023 NHS Long Term Workforce Plan seeks to address shortages through several measures, including by doubling training places and outlining measures around workforce retention and reform, it will have a limited impact on improving workforce capacity in the immediate term.

Since 2021, British Heart Foundation (BHF) has been raising awareness of the challenges facing the NHS cardiovascular workforce and encouraging Government to invest in and support effective workforce planning. By understanding what the cardiac workforce looks like, more informed systems planning can be undertaken to ensure we have well trained and resourced healthcare teams who can fully deliver for patients.



Cardiovascular workforce challenges – shortfalls and retention

The entire health and care system is short of the staff it needs to meet demand.

We do not have a full picture of workforce challenges due to a lack of detailed, accessible data. However, we know from our 2022 evidence review[4] that the entire health and care system is short of the staff it needs to meet demand, with cardiology experiencing widespread capacity issues across a variety of roles, and significant shortages in certain areas.

For example, the GIRFT national cardiology report from 2021 estimated that, to deliver the NHS Long Term Plan, three to four full-time equivalent heart failure specialist nurses are needed per 100,000 population, a substantial increase from the previous estimate of one heart failure nurse per 100,000.[5]

The GIRFT report also highlighted a significant shortfall in the cardiac physiology workforce, partly due to insufficient trainees coming through the national training scheme, but also due to retention issues stemming from a lack of training or career progression opportunities. It outlined that around 760 new cardiac physiologists are needed to meet demand over the next ten years, of whom 460 should be in echocardiography.

Other research has found that the number of NHS consultants currently employed in adult congenital heart disease is approximately a third of the number required to meet delivery standards.[6]

These calculations do not consider the full extent of the pandemic or national recovery targets - which challenge the NHS to eliminate waits of over 65 weeks for elective care by September 2024, and to deliver 107% of 2019/20 levels of elective activity in 2024/25.[7] Furthermore, health services are facing increased demand due to an ageing population and projected increase in disease burden, such as one million more cases of heart failure by 2040.[8]

Shortages are not only affecting clinical cardiology staff. There is also a high turnover of administrative and support staff, who may represent over 40% of the total workforce and have a significant role in the running and provision of cardiac services.[9]

Solving workforce shortages is not only about recruitment, pipeline and retention . Like other parts of the NHS workforce, there are challenges to retaining skilled cardiac staff who lend experience and guidance to junior staff. BHF has engaged with professional workforce societies, charities, and NHS bodies who

have told us that burn out, undesirable workplace culture, and a lack of career progression opportunities are impacting retention rates. Stakeholders also highlighted the importance of good training opportunities, and measures to retain older staff including part-time work and portfolio roles with more teaching, research and development elements.[10]

These issues affect the wider clinical workforce, as acknowledged by the 2023 NHS Long Term Workforce Plan[11], which was a welcome commitment to training, retaining and reforming the workforce. However, there must be greater Government investment and support to enable the NHS to focus more on improving retention across the cardiac workforce.

Data challenges

A major barrier to improving cardiac workforce and services planning is a lack of relevant, sufficiently detailed and accessible data.

To deliver a sustainable workforce that can deliver high quality patient care, robust workforce planning must ensure there is a healthy pipeline of staff that is proportionate to patient need, and that cardiology has access to a wide and diverse pool of talent.

Our research into the workforce revealed there is currently no robust, accessible, integrated process for collecting, analysing, and sharing data on the NHS workforce in any setting.[12] Even where good data exist, for example, on the number of specialist doctors working in hospital Trusts, critical gaps remain, with information such as subspeciality, demographic information, and working patterns not reported publicly in a way that makes it possible to understand where gaps exist in service delivery.

Available statistics also include very little information about other parts of the workforce based in acute settings, including specialist nurses and cardiac physiologists, and do not include any information about staff working predominantly in primary or community care.

This lack of comprehensive workforce data means that we cannot accurately know the full extent of cardiac workforce shortages that limit detection and treatment of disease, or understand the working patterns, potential retirement trends and demographics of the current workforce.

We therefore set out to:

- Build a better understanding of the workforce to support planning.
- Raise awareness about the gaps in the data and the need for more comprehensive data collection.
- Encourage prioritisation of the cardiac workforce at a national level.

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Our approach

British Heart Foundation set out to undertake a first census of the medical and specialist nursing cardiac workforce in England only. Available data for Scotland, Wales, and Northern Ireland, is outlined in our 2022 evidence review.

We first ran a pilot in November 2022, with 10 Trusts in England. This helped to refine questions to enable a pragmatic census aimed at getting a high response rate from operational and human resources staff at Trusts.

We invited 126 NHS Trusts with a cardiology department in England to provide information about their cardiologist and cardiac specialist nurse posts on the assigned census day, 19 June 2023. An individual at each Trust was asked to return the census data, one for cardiologist and cardiology trainee posts and one for cardiac specialist nurses.

BHF commissioned research agency IQVIA to coordinate the data collection and analysis.

Who was included in the census?

Our census collected data on cardiologists and cardiac nurse specialists working in NHS Trusts with a cardiology department in England.

The specific roles and associated questions included in the census are described in *Table 2*. Detailed methodology is outlined in the Appendix.

We did not collect further data than what is already available on cardiac physiologists to avoid replicating work being done as part of NHS England's National Physiological Science data collection.[13] The British Society of Echocardiography also published a 2023 report looking at the challenges and opportunities faced by the echo workforce, including the need for a formal national career pathway in echocardiography to make services sustainable, and the development of new roles to help distribute work, such as administrators, data managers and support workers.[14]

Other census exclusion criteria:

- We did not collect data for staff who are wholly involved in private practice in services not commissioned by the NHS.
- As we focus here on the specialist workforce, we did not collect information about registered nurses on Agenda for Change bands below band 5.

We appreciate that, in secondary care, information about a wider group of professionals is needed including cardiac surgeons, vascular surgeons, cardiac physiologists, pharmacists, perfusionists, coronary care nurses, cardiac ward nurses, theatre staff, cardiovascular allied health professionals, other non-medical healthcare professionals, and those in training for these roles. Many professionals in the community and in primary care also deliver prevention, diagnosis and treatment of cardiovascular disease and its risk factors. However, this census initially focused on a specific slice of the specialist workforce, as a first step to collecting this type of data.

Table 2. Specific roles and associated questions in census tools

Consultants, Honorary consultants, Specialty and Associate Specialist (SAS) doctors	**Questions:** Post filled or vacant, length of time post is vacant (if relevant), subspeciality(s), Programmed Activities (PAs) per week, PAs per week dedicated to clinical research, age, gender **Subspeciality:** academic cardiology, adult congenital heart disease, cardiac imaging, cardio-oncology, electro-physiology and/or device therapy, heart failure management, inherited cardiac conditions, interventional cardiology (coronary), paediatric cardiology and congenital heart disease, structural heart intervention, valve disease, general cardiology, other
Higher specialty trainees	**Questions**: Post filled or vacant, length of time post is vacant (if relevant), working pattern, age, gender
Specialist cardiac nurses	**Questions**: Post filled or vacant, length of time post is vacant (if relevant), Agenda for Change band, working pattern, prescribing ability, age, gender **Subspeciality:** Heart failure, arrhythmia, inherited cardiac conditions, chest pain, adult congenital heart disease, cardiac rehabilitation
FY1/2s, Core trainees, Physician associates	**Questions**: Number assigned to the cardiology department

Reviewing our approach

Our census has yielded new information about the cardiac workforce, but has also highlighted the challenges of obtaining a completely accurate picture

Our findings enhance our understanding of the cardiac workforce:

- Our sample size (n=3,253 individual posts) is larger than those attained in similar pieces of work. Individual post-by-post basis data were collected within each Trust in contrast to other census approaches, where response rates are often extrapolated to the entire population based on existing data.
- We had a healthy response rate of 57% of all Trusts contacted. This is likely a reflection of the value Trusts perceive in gathering workforce information, the usability of the data collection tools, and the significant level of engagement which we pursued with trusts. Cardiac leadership in the regions may have also helped drive support and engagement from Trusts.

The census also demonstrated the scale of the challenge when it comes to collecting data on the NHS workforce, such as:

- While the had a positive response rate for a non-mandated survey, there were still missing data. This means our data may not be fully representative of the cardiac workforce in England as a whole.
- Our census pilot received limited answers to questions about nationality, so this question was not carried forward to the full census. We did not ask a question about ethnicity for the same reason.
- Our data collection does not account for the cardiology and cardiac nursing specialist workforce in the private sector.

Census Results

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A note on language and data

Our Appendix outlines full details of our methodology and includes a glossary of key terms. While the BHF generally takes a wide and inclusive approach to collecting data around personal characteristics, for the census we used existing NHS data terminology and response categories/options (e.g. specific age brackets) wherever possible. This was to align with current NHS data collection processes. This includes a question about gender, with response options of male/female/other/declined.

Some Trusts submitted incomplete details (e.g. omitting age) in their responses for individual posts. To account for this, we have opted to present percentage data for most variables as the percentage of the total responses for which data was reported for that category. For example, if we use the statistics presented for the gender of consultant cardiologists as an example, a figure indicating that '80.7% of consultants were male' should be understood as '80.7% of consultants for whom data was provided were male'.

The decision to present percentage statistics in this way to ensure our data could be easily compared to similar existing data, such as the census conducted by the Royal College of Physicians.[15] It also enabled us to fairly compare completing Trusts to one another. However, we cannot know how those declined responses for certain variables at a post-level, such as that on gender, would have affected results if they had been reported.

In general, the completion rates for some types of data (e.g. pay band for specialist nurses) were high, but where rates were lower (e.g. age brackets for cardiologists), we have provided accompanying data on response rates for the variables in question.

Overview of responses

We had a 57% response rate from the 126 Trusts contacted as part of the census:

72 Trusts returned their cardiologist data*

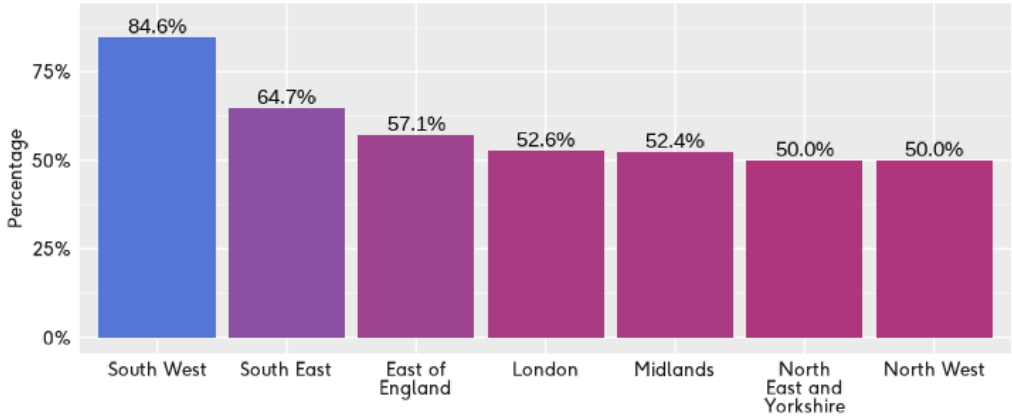
72 Trusts returned their specialist nurse data*

At a regional level, the South West had the highest response rate (n=11), with 84.6% of Trusts in the region responding to both the cardiologist and nurse tool. Because of this variable response rate by region, we have not undertaken further regional analysis of responses

Numbers of reporting Trusts are provided in the Appendix.

**Note that one additional Trust submitted data for their adult congenital heart disease doctors and nurses only. This Trust is excluded from our overall response rate and the plots on this page. However, their data is included in the rest of the analysis.*

Percentage of reporting Trusts by NHS region - Doctors tool

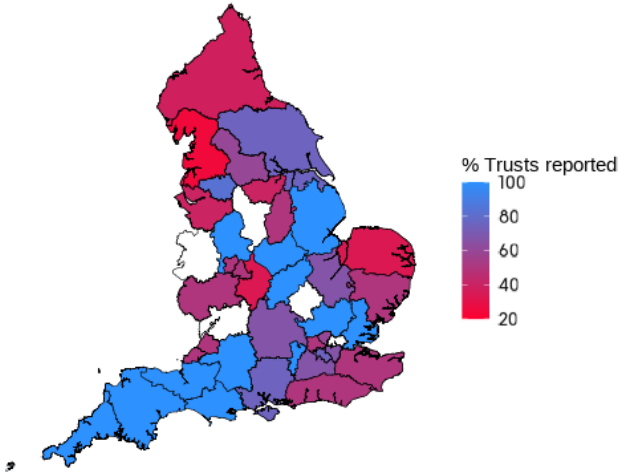


Note: Partial returns excluded from response rate

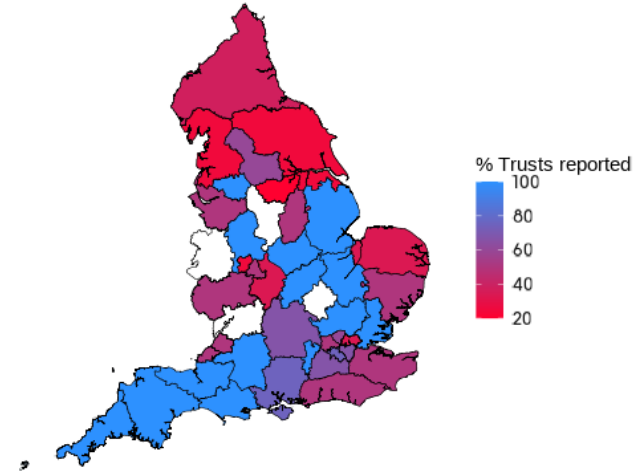
Percentage of reporting Trusts by NHS region - Nurse tool

Note: Partial returns excluded from response rate

Percentage of Trusts within ICBs who submitted the cardiologist tool



Percentage of Trusts within ICBs who submitted the nurse tool



Summary – Cardiologists

Vacancies and Locums

More than 1 in 20 consultant cardiologist posts were vacant or filled by a locum.

Working hours

Nearly 1 in 7 consultant cardiologists worked more than 12 PAs weekly (typically around 48 hours a week).

Subspecialty

Interventional cardiology was the most common subspecialty (35% of all consultant cardiologists).

Clinical research

84% of consultant cardiologists had no PAs dedicated to clinical research each week.

Age

21% of consultant cardiologists were aged 56 and over.

Age and Subspecialty

The subspecialties with the most consultants aged 56+ were academic cardiology (33%) and adult congenital heart disease (26%).

Gender

Only 1 in 5 consultant cardiologists were female.

Gender and Subspecialty

Paediatric cardiology (50%) and adult congenital heart disease (48%) had the highest percentage of female consultants.

Summary – Nurses

Working hours
Just over half (53%) of cardiac specialist nurses work full-time.

Pay band
A majority of nurses in all subspecialty areas (excluding cardiac rehabilitation) were Band 7.

Subspecialty area
Heart failure was the largest subspecialty area of the six included in the census (34% of all posts).

Prescribing
Just under half (48%) of cardiac specialist nurses were prescribers.

Age
Around 1 in 7 (15)% cardiac specialist nurses were aged 56 and over.

Age and subspecialty area
The cardiac subspecialty area with the most nurses aged 56+ was cardiac rehabilitation (24%)

Gender
Only 1 in 10 cardiac specialist nurses were male.

Gender and subspecialty area
Male nurses were best represented amongst chest pain (rapid access) and arrhythmia subspecialty areas.

Results: Cardiologists

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Overview

We collected data on over **1,800 cardiologist posts** in our census, the largest dataset to date of this group compared to similar activity, like the RCP census.

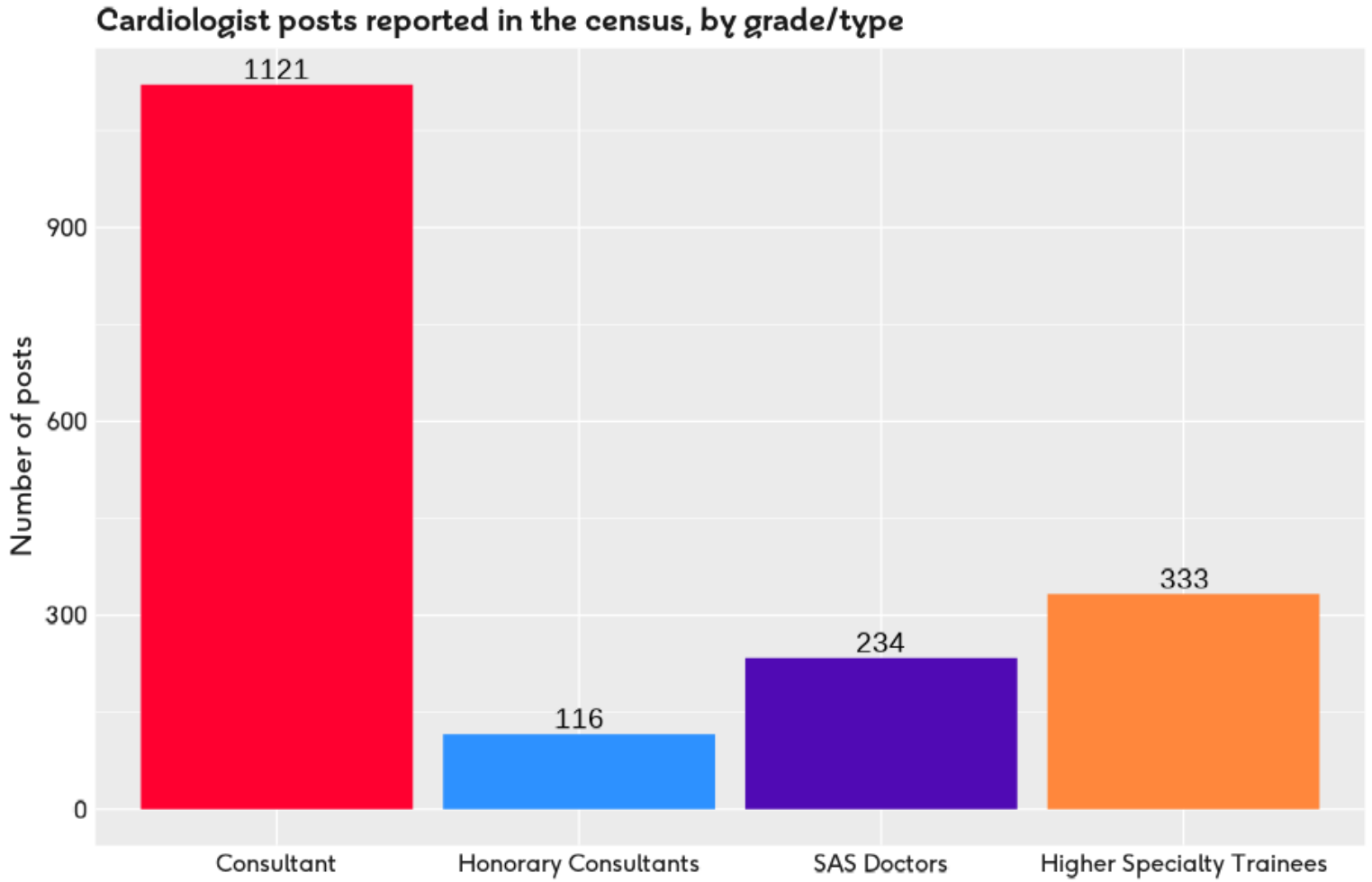
In this section, we outline what we found about this group including doctor grade, the subspecialities reported for cardiologists, and the doctor vacancy and locum picture on census day.

We also break down findings by age and gender. This allows us to compare differences within aspects like working patterns, area of subspeciality and age profiles within these.

Cardiologist posts by doctor type

We collected data on 1,804 cardiologist posts, across four grades/types of doctor:

- Consultants: 1,121
- Honorary Consultants: 116
- Higher Specialty Trainees: 333
- SAS Doctors: 234



Cardiologist vacancy status

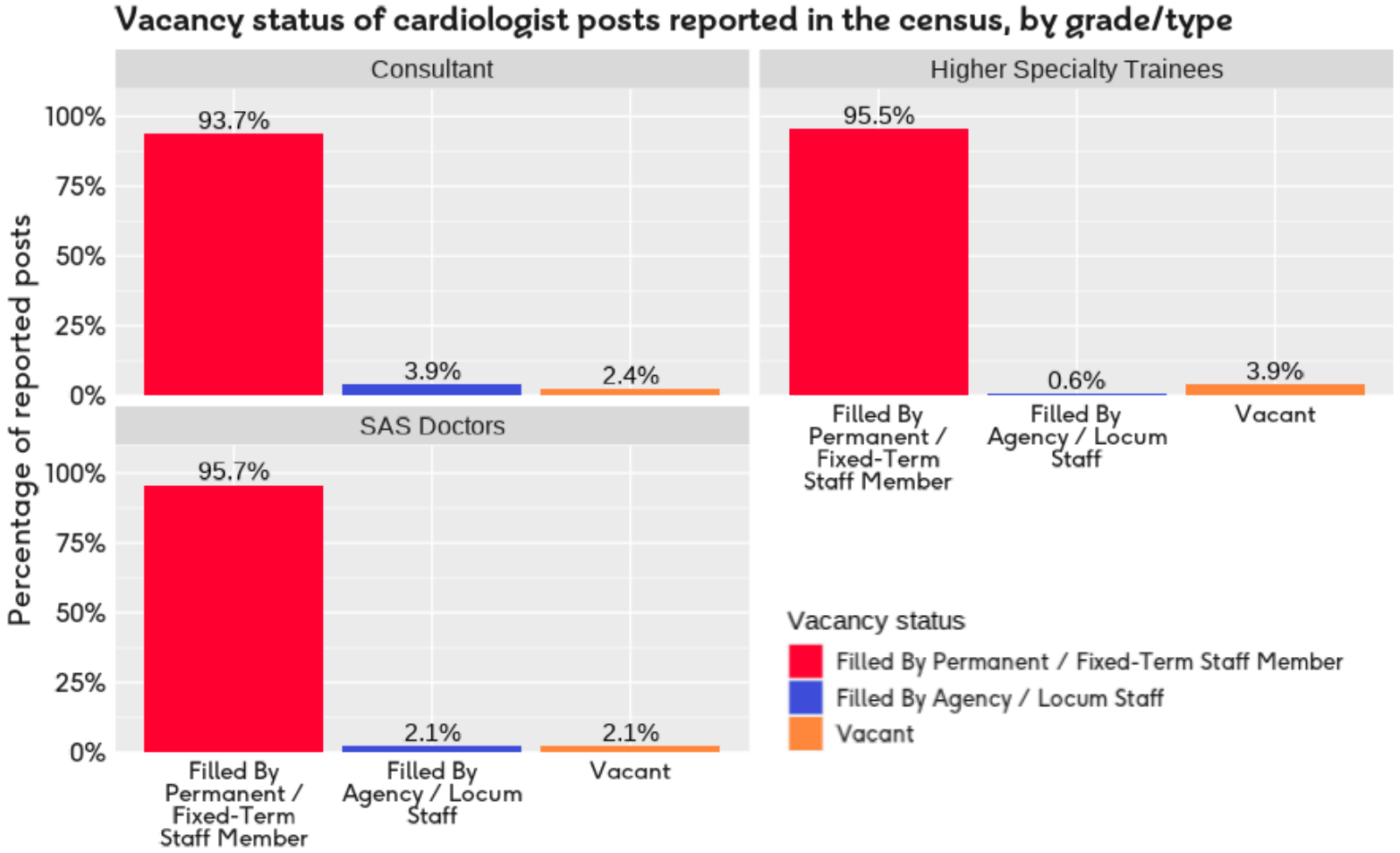
We collected data on vacancy status for all listed cardiologist posts, according to whether they were:

- Filled by a permanent/fixed-term staff member
- Filled by agency/locum staff
- Vacant

For consultant cardiologists, 6.3% of listed posts (n=71) were vacant or filled by agency or locum staff on the day of the census.

Vacancy length and locum use:

- 18.5% of vacant posts (equating to five consultant posts) had been vacant for more than a year on the census day.
- Around 60.0% of posts filled by locums or agency staff had been so for over one year.



Data shown for cardiologist posts reported in census, by doctor type: consultants (n=1,121), higher specialty trainees (n=333), SAS doctors (n=234). Vacancy status data was not collected for honorary consultants, as these posts are not directly employed by NHS Trusts.

Cardiologist subspecialty

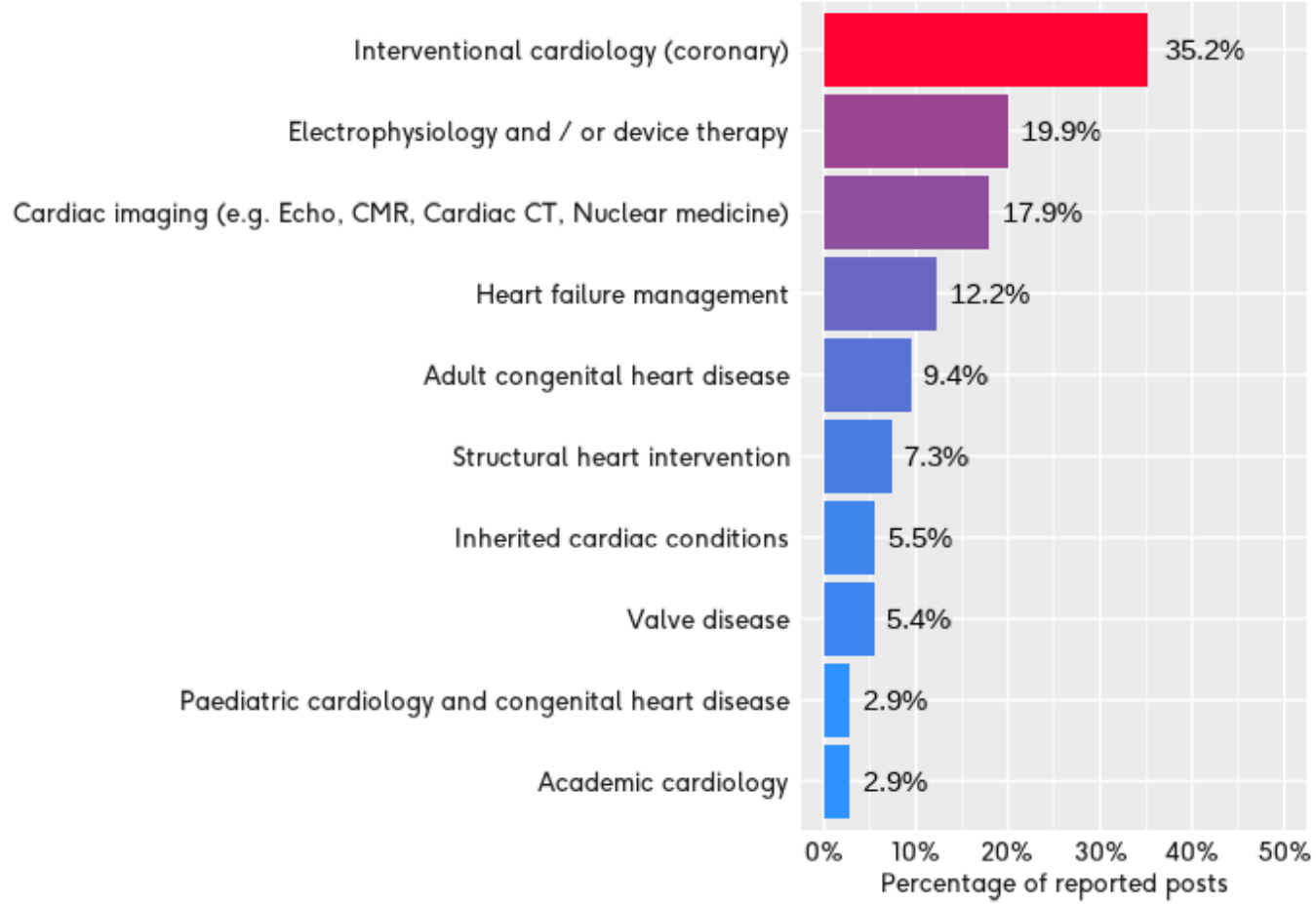
For each cardiologist post, Trusts could select up to three subspecialties. A pre-populated, drop-down list of subspecialties was provided through the tool, and a free-text 'Other' option was offered. General medicine was not included as an option.

The plot (right) displays those subspecialties reported for consultant cardiologists where the subspecialty was selected for at least 10 consultant posts (headcount). The most reported subspecialty amongst consultant cardiologist was interventional cardiology (35.2% of all filled consultant posts).

Notes:

- Data shown is percentage of consultants (headcount). Consultants' time may be split unevenly across subspecialties, so these data should not be taken as whole-time equivalent share of subspecialties amongst the consultant population.
- '**General cardiology**' was only offered as an option for posts which had no reported subspecialty. This cannot, due to data collection methods, be fairly represented alongside the subspecialties visualised here. However, posts for which this option was selected are included in the denominator for the plot displayed here.
- Consultants with an adult congenital heart disease (ACHD) subspecialty are likely over-represented in the census data relative to their actual frequency within the overall consultant population. This might be a coincidence based on the Trusts who responded to the census, or possibly due to stronger engagement with certain networks.

Most common subspecialties of consultant cardiologists reported in the census



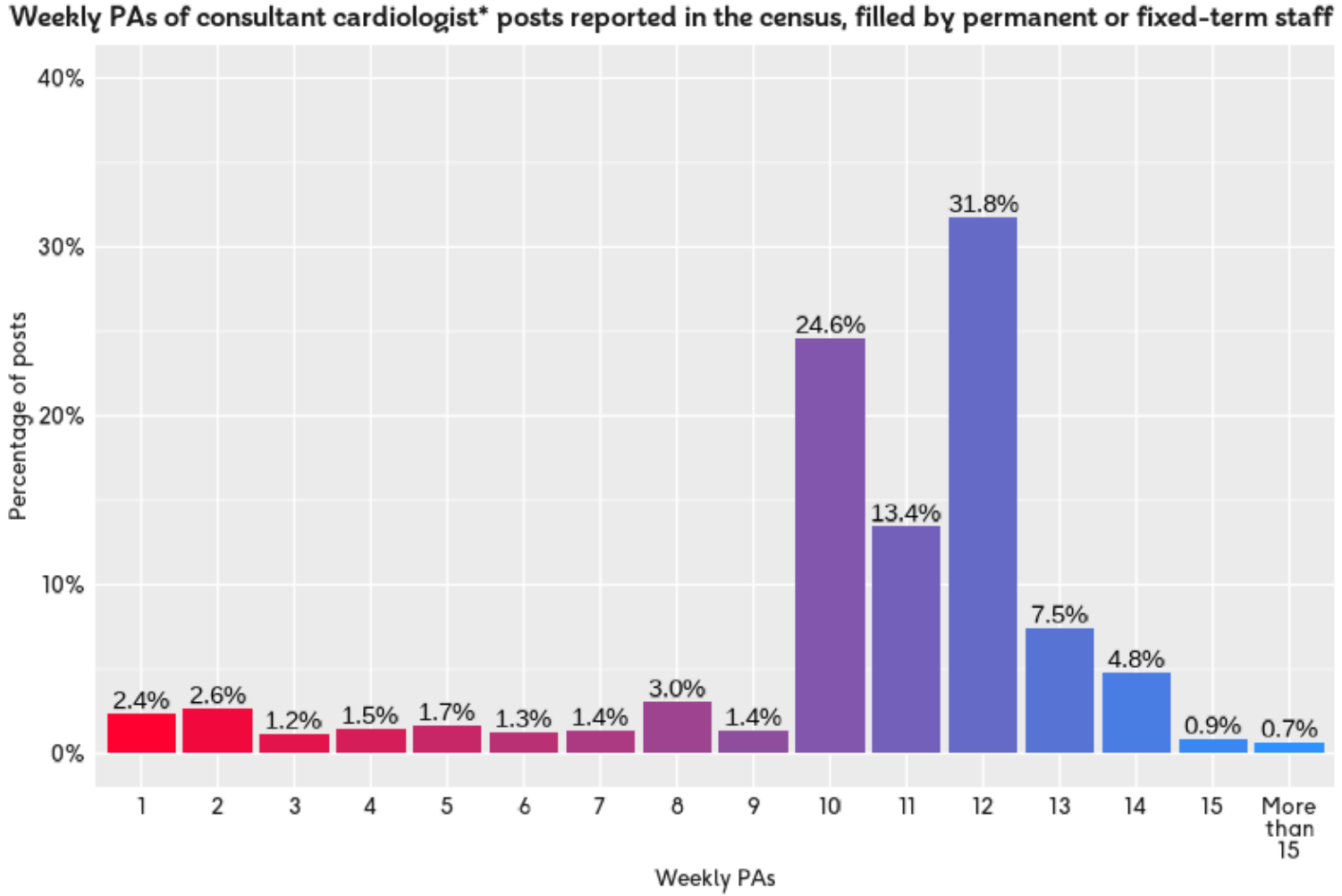
Note: This graph includes consultants employed on permanent/fixed-term contracts for whom subspecialty data was provided (n=1,050). It excludes consultants employed on honorary contracts, and posts that were vacant or filled by locums on the census day. Please also note percentages are representative of these 1,050 posts.

Consultant weekly programmed activities (PAs)

Programmed activities (PAs) are contracted blocks of time, typically equivalent to four hours of work during the day and three hours for out-of-hours work. NHS England considers a full-time job plan for consultants to consist of 10 PAs per week[16], typically equivalent to 40 hours.

Key points:

- 7 in 10 (69.8%) consultant cardiologists were contracted to work between 10-12 PAs weekly.
- 13.9% of consultant cardiologists were contracted to work more than 12 PAs per week.
- 16.5% of consultant cardiologists were contracted to work less than 10 PAs per week
- 9.3% of consultant cardiologists were contracted to work between 1 and 5 PAs per week.



*Note: Data is shown for consultant cardiologist posts filled by permanent/fixed-term staff on the census day, where data on PAs was provided (n=1,020). It excludes honorary consultants, and consultant posts filled by locum staff. Percentages shown are for the percentage of the 1,020 posts that met these criteria, and may not add up to 100% due to rounding.

Consultant clinical research programmed activities

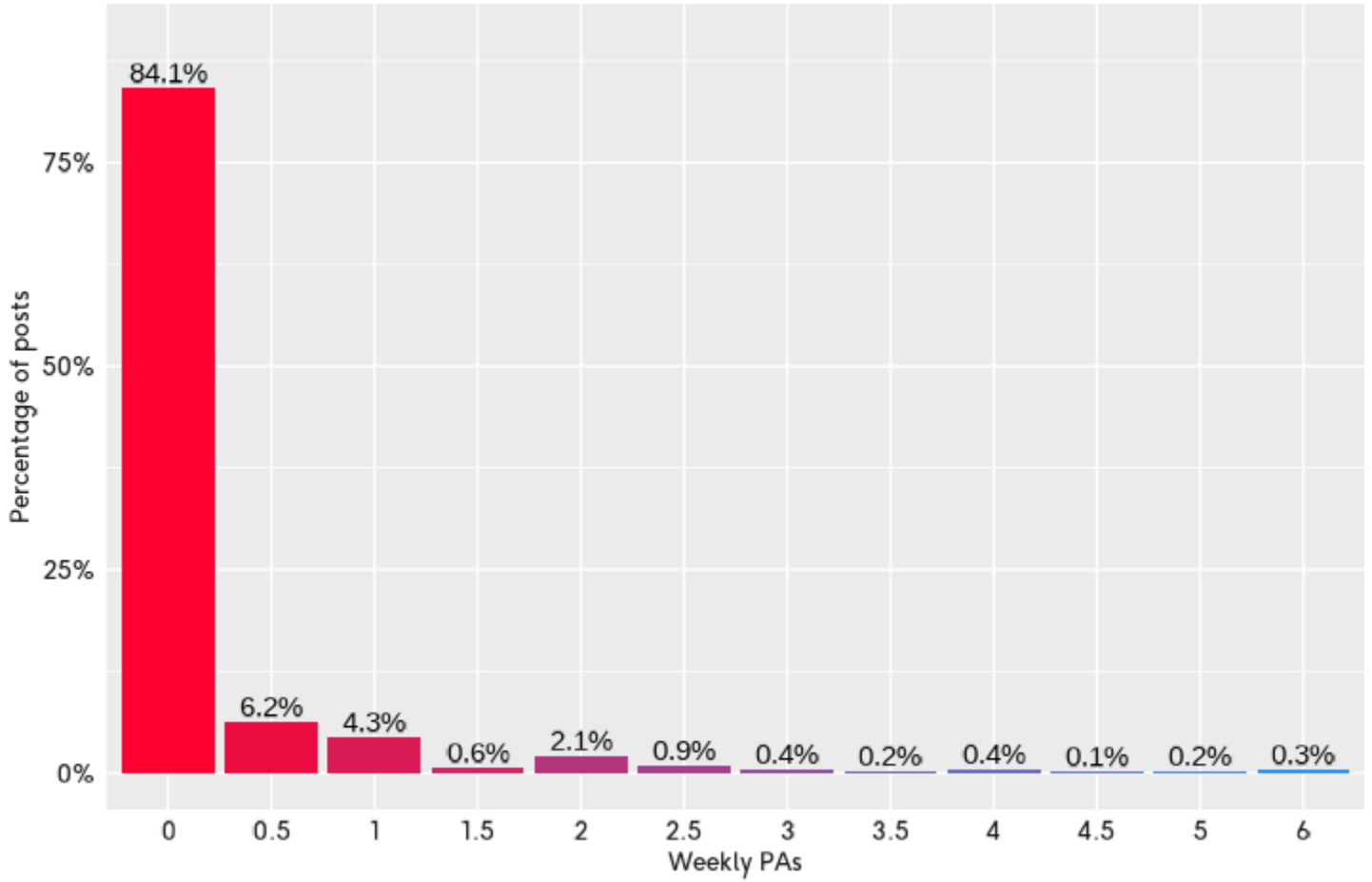
Trusts were asked how many programmed activities per week each consultant had in their job plan for carrying out clinical research.

A significant majority (84.1%) of consultant cardiologists had no PAs dedicated to clinical research each week.

Of those consultants who did have dedicated weekly clinical research PAs, most (79.7%) were contracted to carry out between 0.5 to 2 research PAs, typically 2-8 hours per week.

Note: Medicine often involves portfolio working and some consultants might use NHS supported professional activity (SPAs) time for research. This time is used for a variety of professional activity including research, audits, service improvement, professional development, leadership and teaching. Because of this, clinical research contribution as SPAs time may or may not have been captured by the census.

Weekly PAs dedicated to research of consultant cardiologist* posts reported in the census, filled by permanent or fixed-term staff



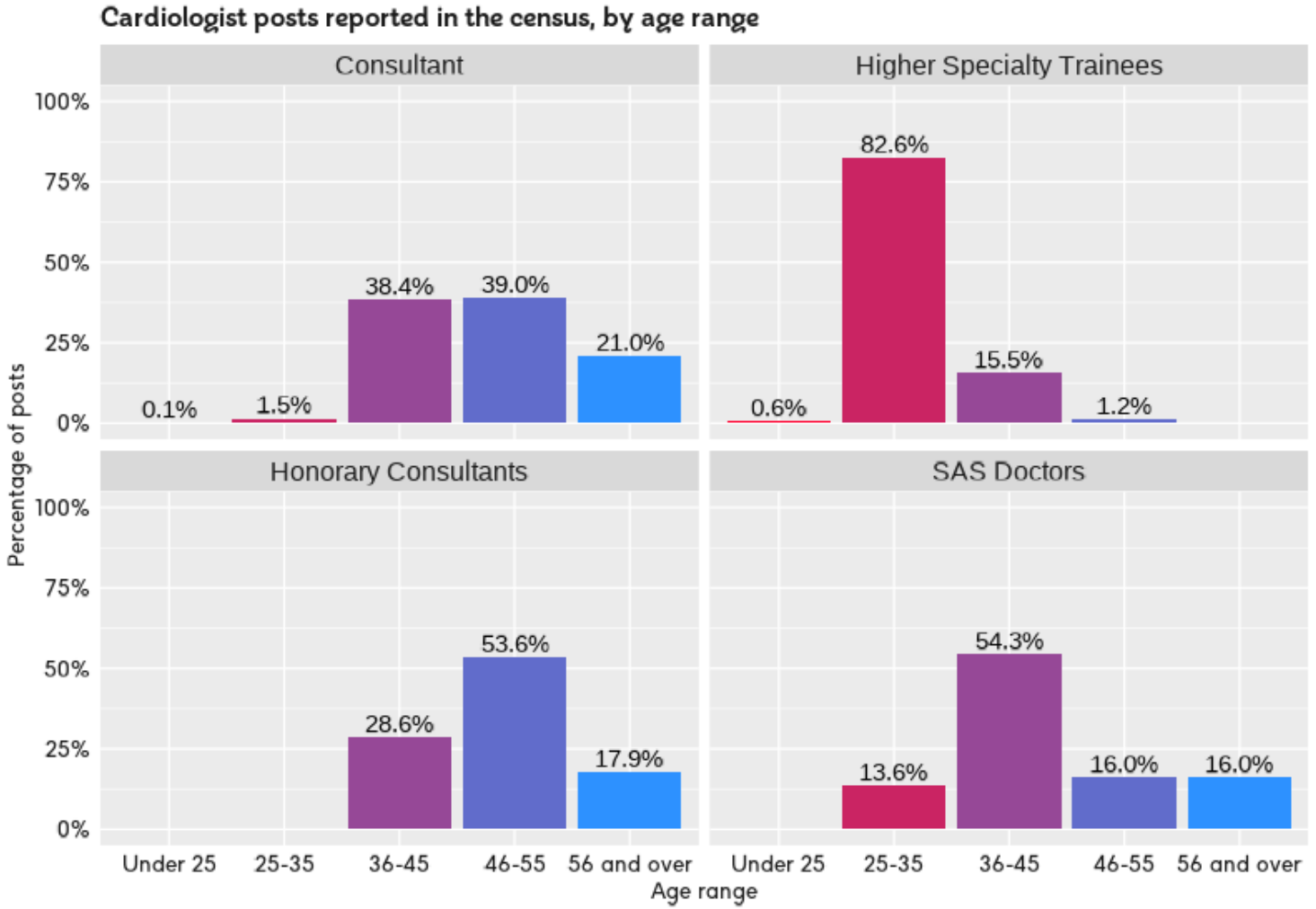
*Note: Data is shown for consultant cardiologist posts filled by permanent/fixed-term staff on the census day, where data on research PAs was provided (n=900). It excludes honorary consultants, and consultant posts filled by locum staff. Percentages shown are for the percentage of the 900 posts that met these criteria, and may not add up to 100% due to rounding.

Cardiologist post by age

The age profile of doctors differs significantly between doctor grade. Plots on the right show the percentage of filled posts where age data was reported and reported in line with the age bracket options we provided to Trusts.

Key points:

- Over 1 in 5 (21.0%) of the consultant workforce is aged 56 and over.
- Honorary consultants are generally reported to be older, with most in the 46-55 bracket.
- Half (54.3%) of SAS doctors fall within the 36-45 age bracket.



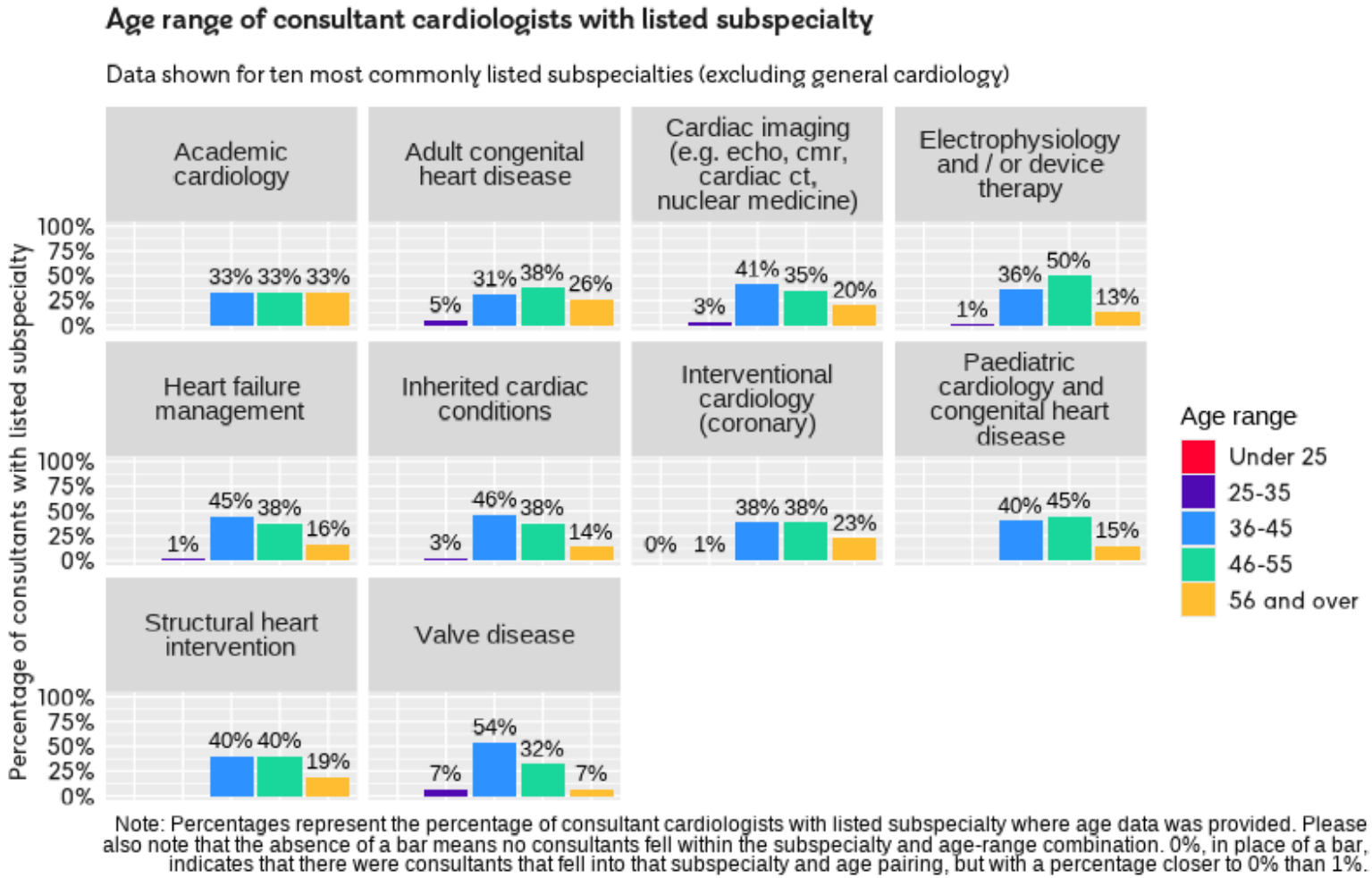
Percentages shown are for the percentage of posts (for consultants, SAS doctors, and higher specialty trainees) filled by permanent or fixed-term staff where age data was reported properly, and for all honorary consultants where age data was provided. The number of posts that met this criteria, by doctor type, were: consultants (n=672), honorary consultants (n=56), higher specialty trainees (n=161), and SAS doctors (n=81).

Consultant cardiologist subspecialty and age

This graph displays the age range of cardiology consultants for the ten most commonly reported subspecialties in the census, excluding general cardiology. Percentages represent the percentage of consultants with the listed subspecialty where age data was provided.

Key points:

- The subspecialties with the highest percentage of consultants aged 56+ were academic cardiology (33%), adult congenital heart disease (26%), and interventional cardiology (coronary) (23%).
- The subspecialties with the highest percentage of consultants aged 36-45 were valve disease (54%), inherited cardiac conditions (46%), and heart failure management (45%).



Note: Percentages represent the percentage of consultant cardiologists with listed subspecialty where age data was provided. Please also note that the absence of a bar means no consultants fell within the subspecialty and age-range combination. 0%, in place of a bar, indicates that there were consultants that fell into that subspecialty and age pairing, but with a percentage closer to 0% than 1%.

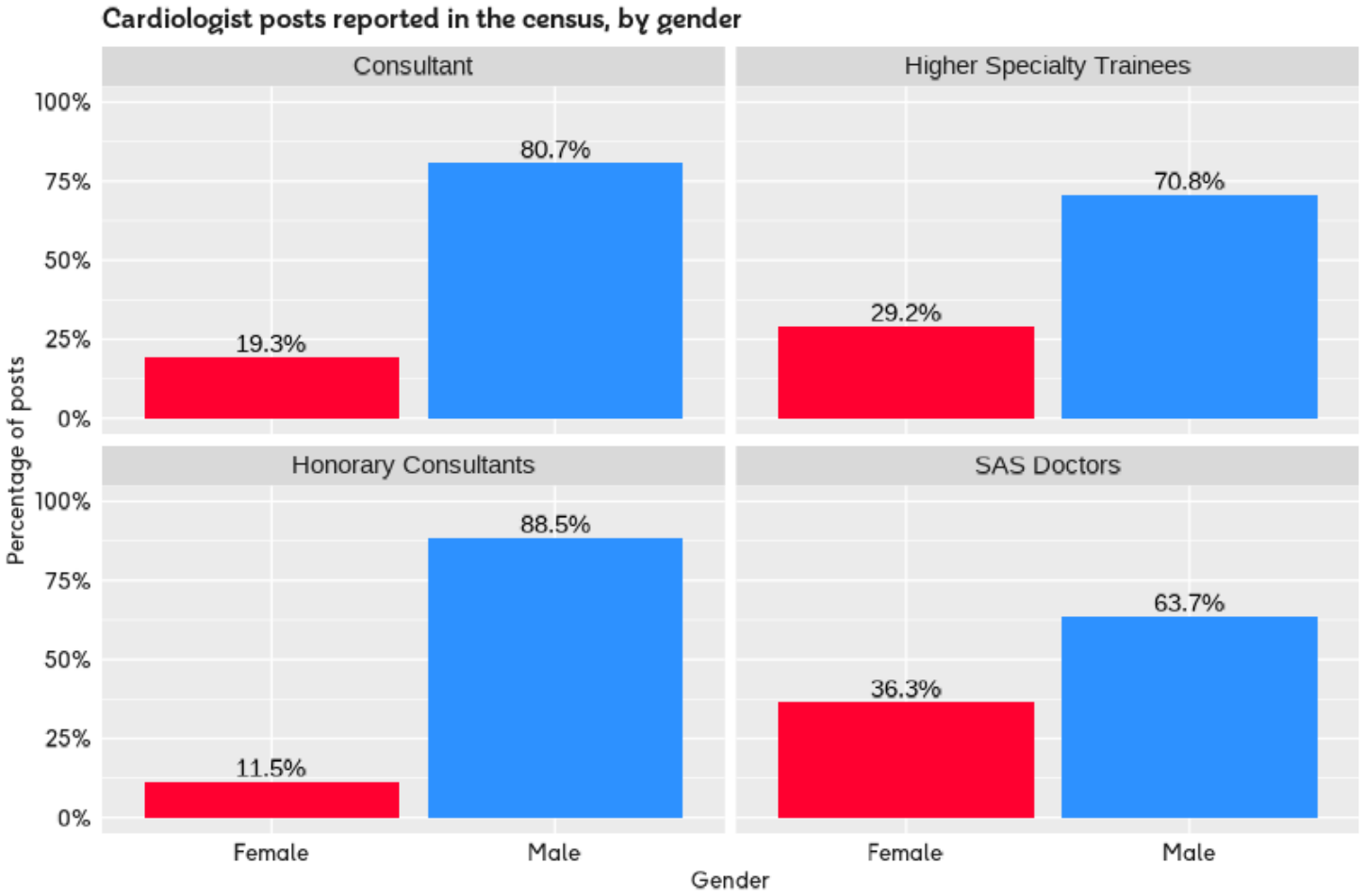
Cardiologist post and gender

Key points:

- 1 in 5 (19.3%) consultant cardiologists and 3 in 10 (29.2%) higher specialty trainees in our census were female.
- Over a third of SAS doctors (36.3%) were female.
- Honorary consultants had the lowest percentage of reported female staff, at just over 1 in 10 (11.5%) of honorary consultant cardiologists.

Note:

- We received more data on gender than on age for doctor posts. Please see table in Appendix.



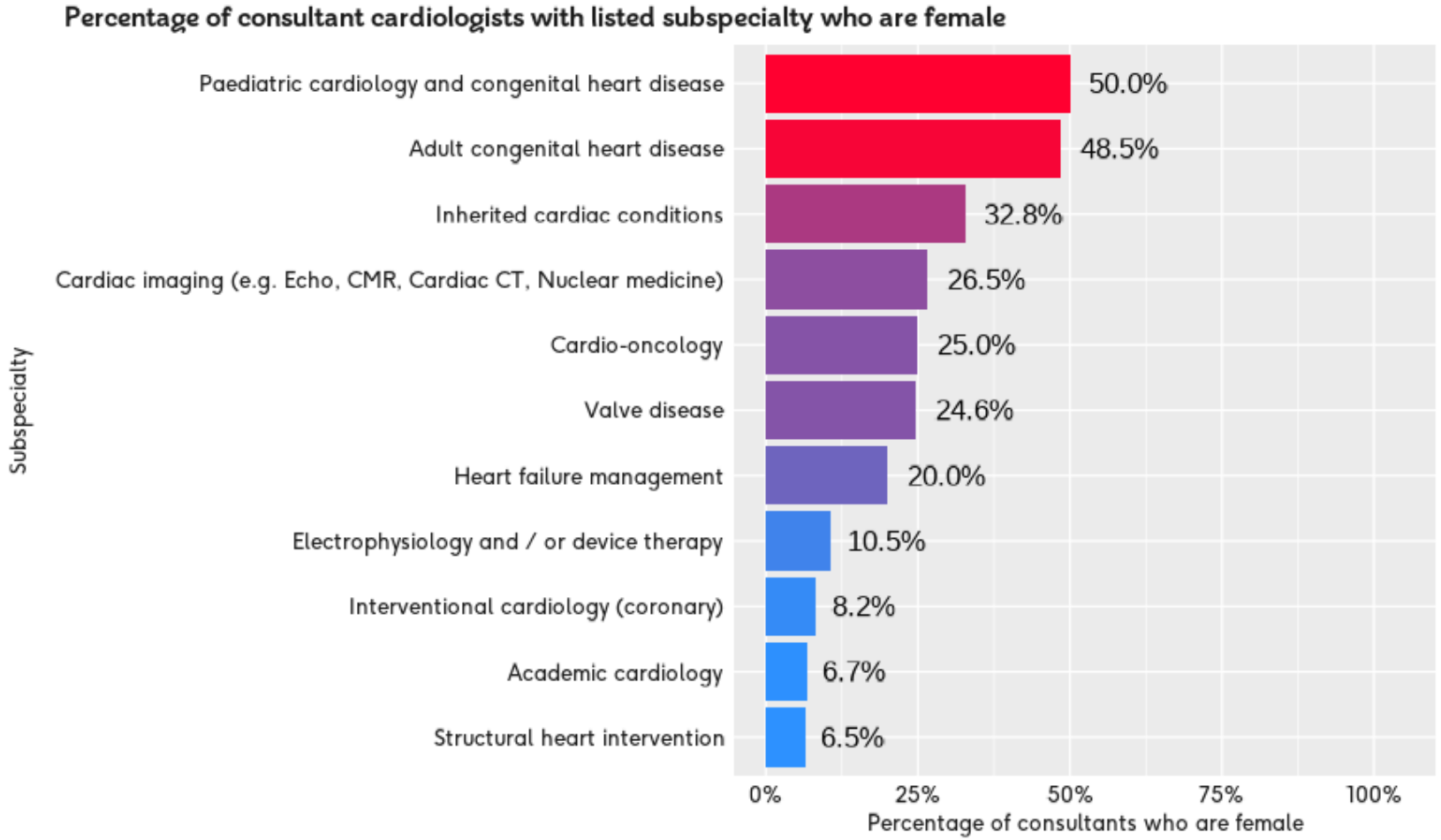
Data shown for consultants, SAS doctors, and higher specialty trainees, where posts were filled by permanent/fixed-term staff and gender data was provided. For honorary consultants, data is shown for all posts where gender data was reported. The number of cardiologists, by doctor type, who met these criteria were: consultants (n=1,034), honorary consultants (n=96), SAS doctors (n=212), and higher specialty trainees (n=298).

Consultant cardiologist subspecialty and gender

The plot (right) shows the proportion of consultant cardiologists who work in each subspecialty that are female. Data is shown for subspecialities with more than 10 relevant posts in the census.

Key points:

- The subspecialties with equal representation of female cardiology consultants were paediatric cardiology and congenital heart disease (50.0%), and adult congenital heart disease (48.5%).
- The subspecialities with the smallest percentage of female cardiology consultants were structural heart intervention (6.5%) and academic cardiology (6.7%).



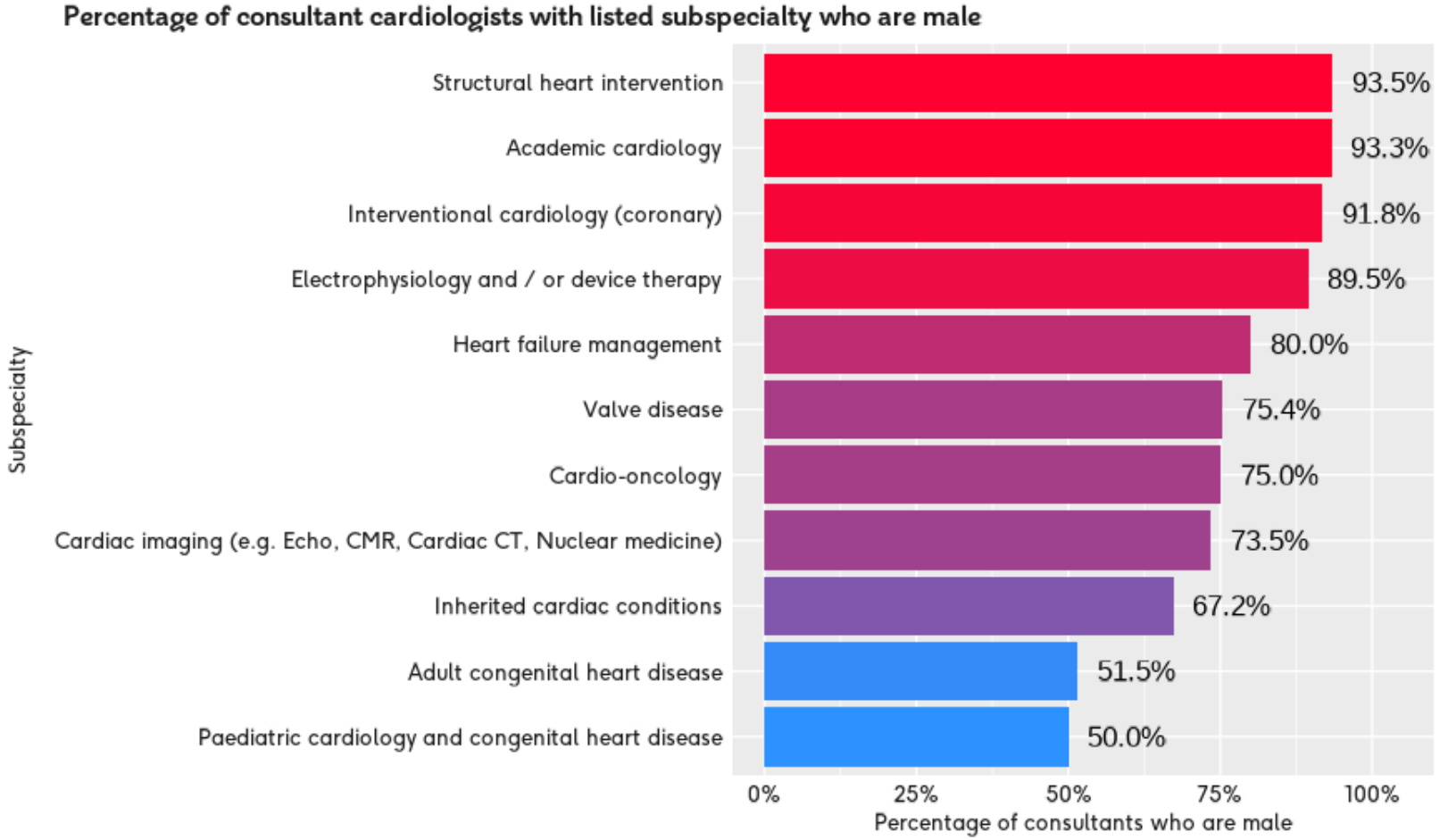
Note: Percentages represent the percentage of consultant cardiologists with listed subspecialty where gender data was provided. Please also note that consultant posts may be included in multiple subspecialties, where posts have >1 listed subspecialty.

Consultant cardiologist subspecialty and gender

The plot (right) shows the proportion consultant cardiologists who work in each subspecialty that are male. Data is shown for subspecialities with more than 10 relevant posts in the census (n=11).

Key points:

- Male consultants represented at least 50% of all subspecialties by headcount.
- The subspecialties with equal participation of male and female cardiology consultants were paediatric cardiology, congenital heart disease (50.0%), and adult congenital heart disease (51.5% male).
- The subspecialties with the largest percentage of male cardiology consultants were structural heart intervention (93.5%), and academic cardiology (93.3%).



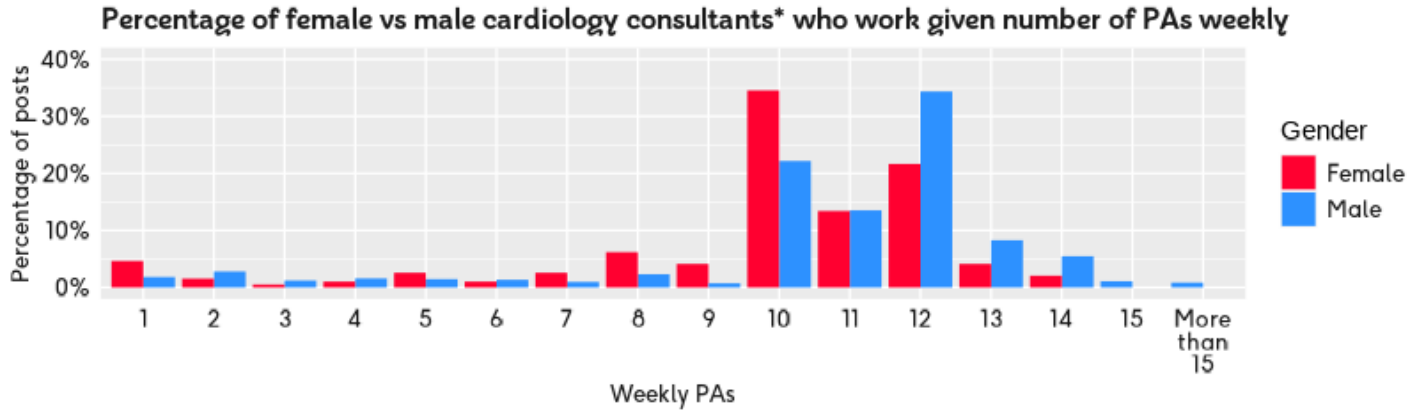
Note: Percentages represent the percentage of consultant cardiologists with listed subspecialty where gender data was provided. Please also note that consultant posts may be included in multiple subspecialties, where posts have >1 listed subspecialty.

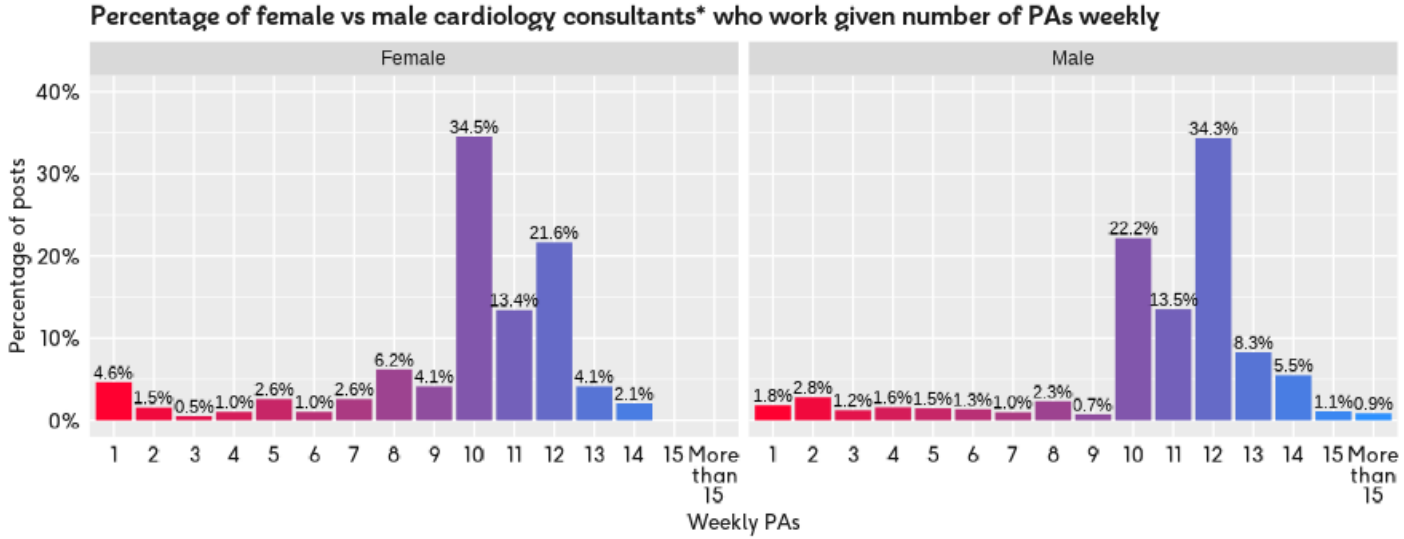
Consultant cardiologist programmed activities and gender

The two plots displayed to the right give complementary visualisations of the same data to aid interpretation.

Key points:

- Similar proportions of both female (69.5%) and male (70.0%) consultants were contracted to work between 10 and 12 PAs weekly.
- Male consultants are significantly more likely than female consultants to be contracted for more than 12 PAs (15.8% compared to 6.2%).





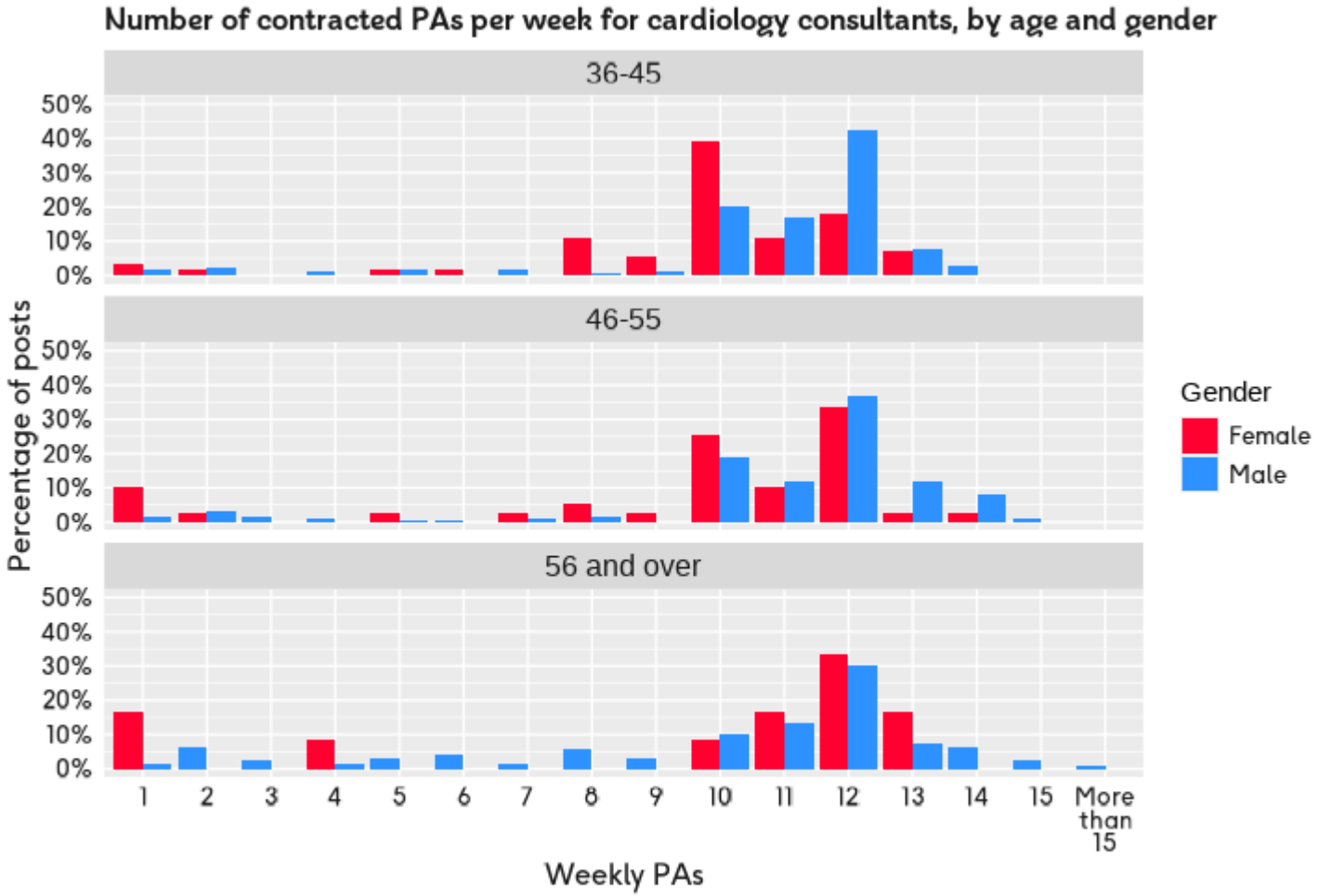
*Data is displayed for consultants employed on full-time or fixed-term contracts, and excludes honorary consultants.

Percentages shown are for the percentage of female vs male cardiology consultants who work given number of PAs weekly.
E.g. in the displayed data, 34.3% of male cardiology consultants worked 12 PAs weekly, compared to 21.6% of female consultants.

Consultant cardiologist programmed activities by age and gender

Most consultants in each gender and age group are contracted to work between 10 and 12 PAs weekly – equivalent to 40-52 hours a week.

- For female consultants, the most common number of weekly PAs is 10 for those aged 36-45, and 12 for those aged 46-55 and 56 and over. For male consultants, the most common number of weekly PAs for all these age groups is 12.
- Excluding consultants aged 25-35 (due to small sample size), male cardiology consultants were more likely to be contracted to work a higher number of programmed activities per week.
- However, the picture is more nuanced for consultants aged 56 and over. Higher percentages of female than male consultants worked 12-13 PAs weekly, but no female consultants were reported to work >13 PAs weekly.



Note: Data is displayed for consultants employed on full or fixed-term contracts, and excludes honorary consultants. Data for consultants aged 25-34 excluded due to small sample size (n=10). Percentages shown are for the percentage of female vs male cardiology consultants contracted to work given number of PAs weekly. E.g. in the displayed data, 42.3% male consultants aged 36-45 were contracted to work 12 PAs each week, compared to 17.9% of female consultants in the same age bracket.

Results: Cardiac specialist nurses

Summary of specialist nurse data 28

Demographic analysis 33

Overview

We collected data on over **1,400 cardiac specialist nurses** in our census. 90.5% of these nurses were female.

In this section, we outline what we found about this group including subspecialist area, pay band, and prescriber status. The census collected information on nurse pay band to fill public data gaps for this group.

We also break down our results by age and gender. This allows us to compare differences within aspects like working patterns, pay banding, areas of speciality and age profiles within these. Information on nurse job titles can be found in the Appendix.

Note – due to small sample size, nurses aged under 25 were excluded from our analyses.

Cardiac speciality nurse area

Trusts were asked to provide data on specialist nurses for six areas of cardiac care:

- Adult congenital heart disease
- Arrhythmia
- Cardiac rehabilitation
- Inherited cardiac conditions
- Chest pain (rapid access)
- Heart failure

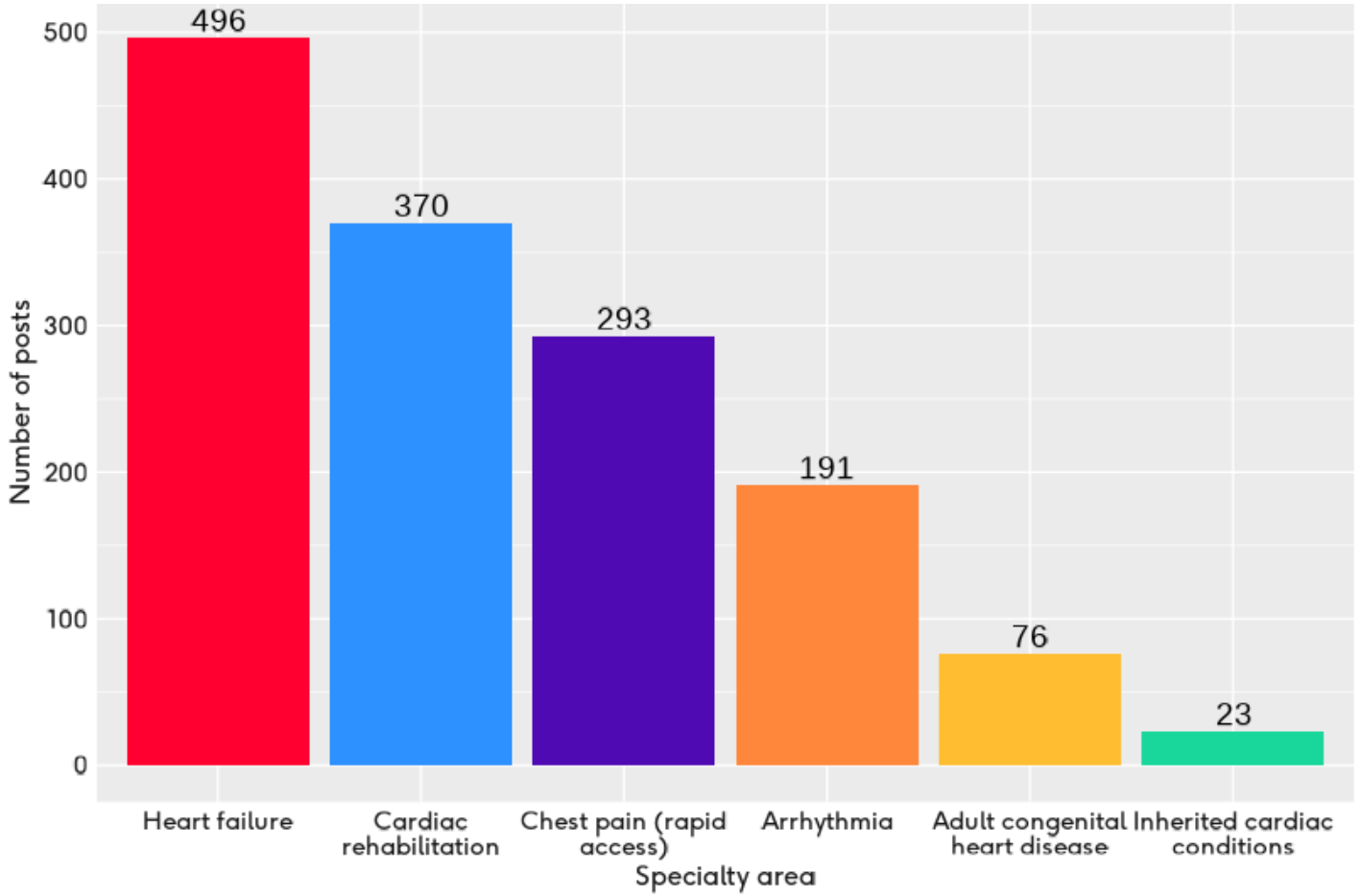
Key points:

- The largest number of cardiac specialist nurse posts were in heart failure (n=496).
- The smallest number of nurses reported to the census were in inherited cardiac conditions (n=23).

Notes:

One trust returned data for adult congenital heart disease specialist nurses only.

Number of cardiac speciality nurse posts reported in census, by specialty area



Note: Data displayed for all 1,449 nursing posts reported in the census.

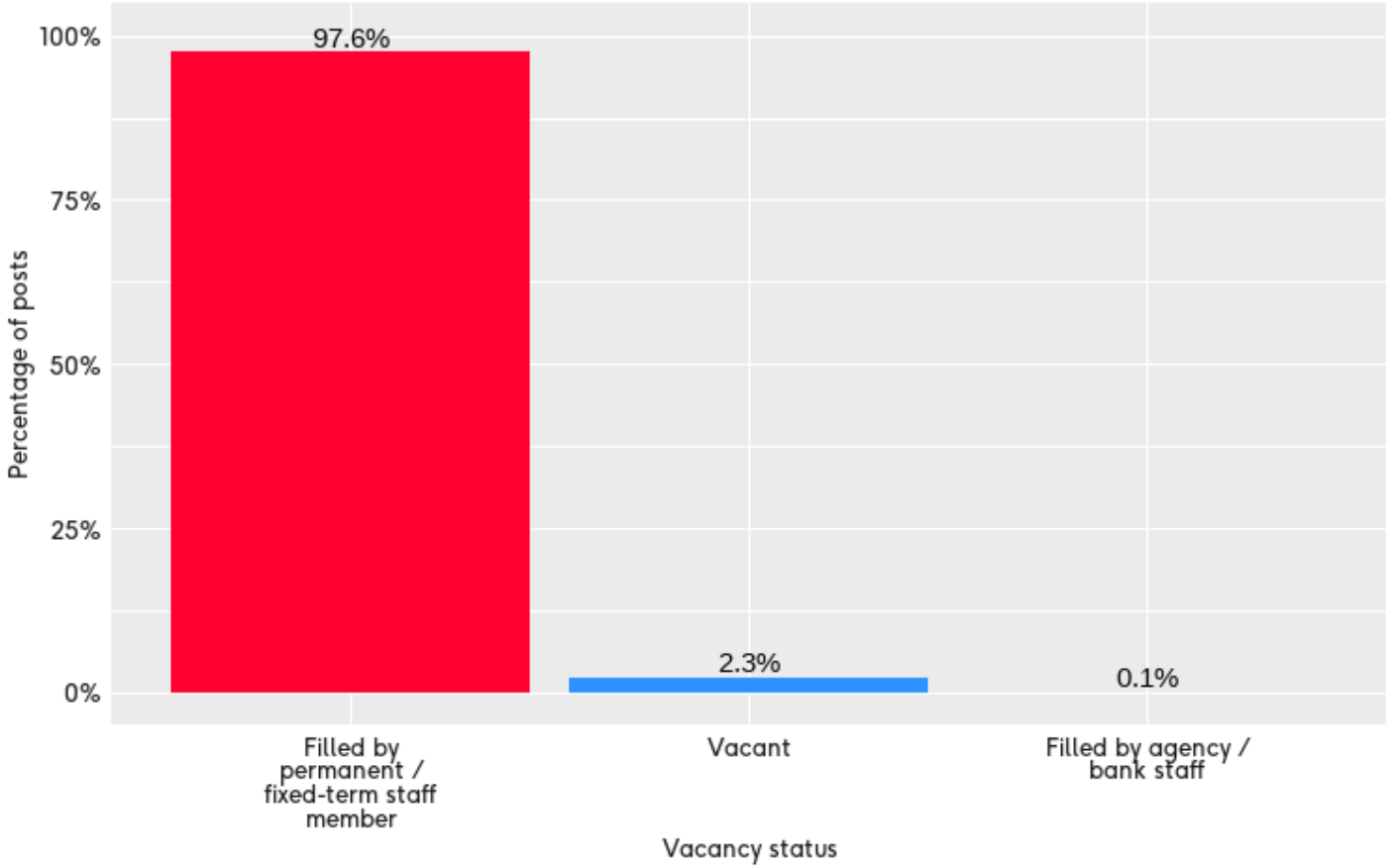
Cardiac specialist nurse vacancy status

For each cardiac specialist nursing post, Trusts were asked to detail whether, on the day of the census, the post was:

- Filled by permanent/fixed-term staff member
- Filled by agency/bank staff
- Vacant

2.3% (n=34) cardiac specialist nurse posts were reported vacant on the census day.

Vacancy status of cardiac specialist nurse posts reported in census



Note: Data displayed for all 1,449 cardiac nurse specialist posts reported in the census.

Cardiac specialist nurse working patterns

Responding Trusts were asked to provide the contracted whole time equivalent (WTE) for each of their cardiac specialist nurses employed on a permanent or fixed term contract, where 1 = full time.

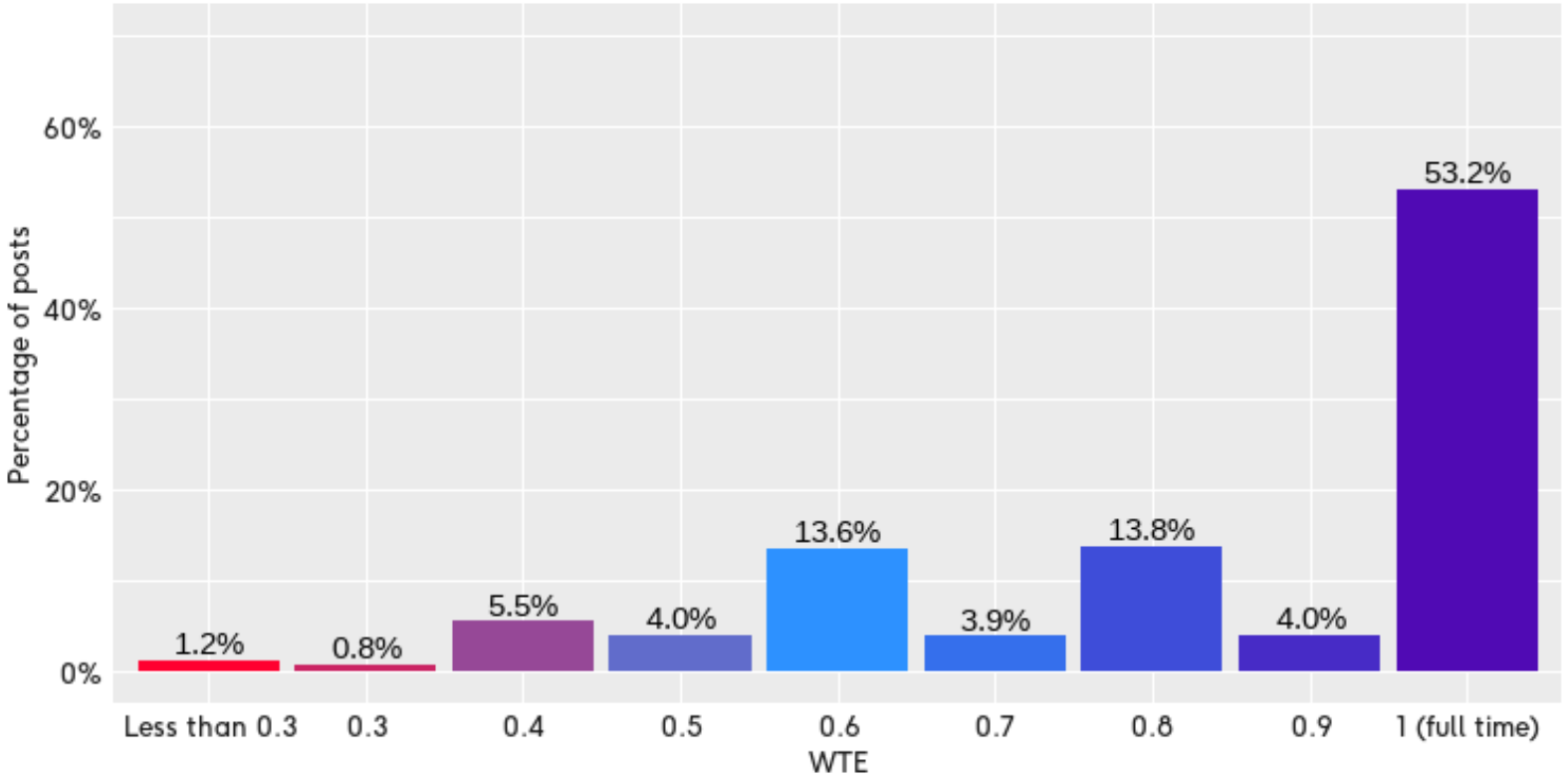
Key points:

- Almost half (46.8%) of specialist nurses were employed on less-than-full-time contracts. However, most of these nurses were contracted to work either 0.6 or more WTE (88.5%).

Notes:

- Data are missing for 0.4% of all permanent or fixed-term staff. Percentages shown are for totals of staff for whom data was submitted correctly.

Contracted whole time equivalent (WTE) of cardiac specialist nurses reported in the census



Data displayed for all reported cardiac nurse specialist posts filled by permanent/fixed-term staff, where data on contracted WTE was provided correctly (n=1,409).

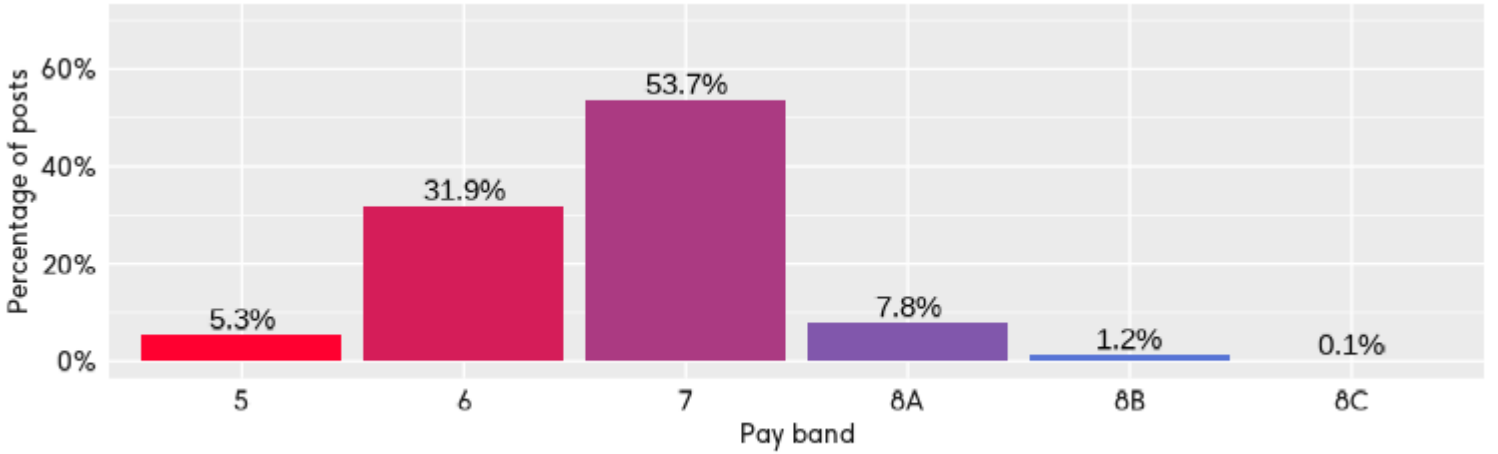
Cardiac specialist nurse pay band distribution

Trusts were asked to provide Agenda for Change pay band data for each cardiac specialist nurse post. These reflect the bands outlined in the grading system for all NHS staff (apart from doctors, dentists and most senior managers).[17]

Key points:

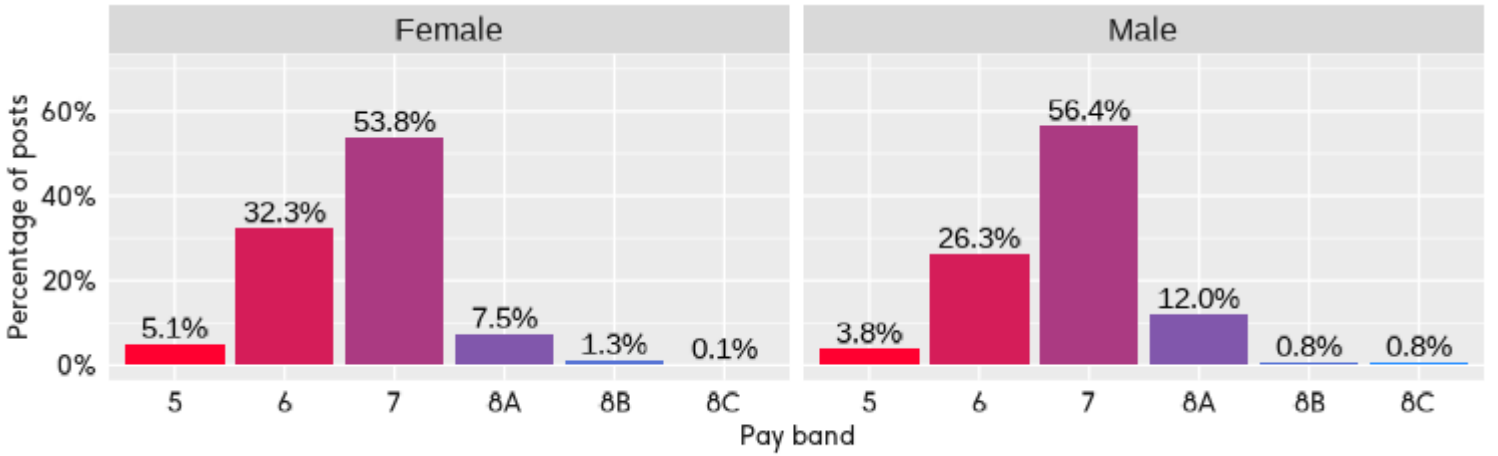
- Most cardiac specialist nurses reported to the census were either in band 6 or 7 (90.9%).
- 9.1% of posts were in band 8A or higher.
- A majority of both female (53.8%) and male (56.4%) of nurse specialists were in a band 7 post.
- A higher percentage of male nurses (13.6%) were in a band 8 post than female nurses (8.9%).

Pay banding of cardiac specialist nurses (%) reported in the census



Data displayed for all cardiac nurse specialist posts, where pay band data was reported correctly (n=1,444).

Pay banding of cardiac specialist nurses, by gender



Data displayed for the 1,393 posts filled by permanent/fixed-term staff where gender and pay band data was provided correctly.

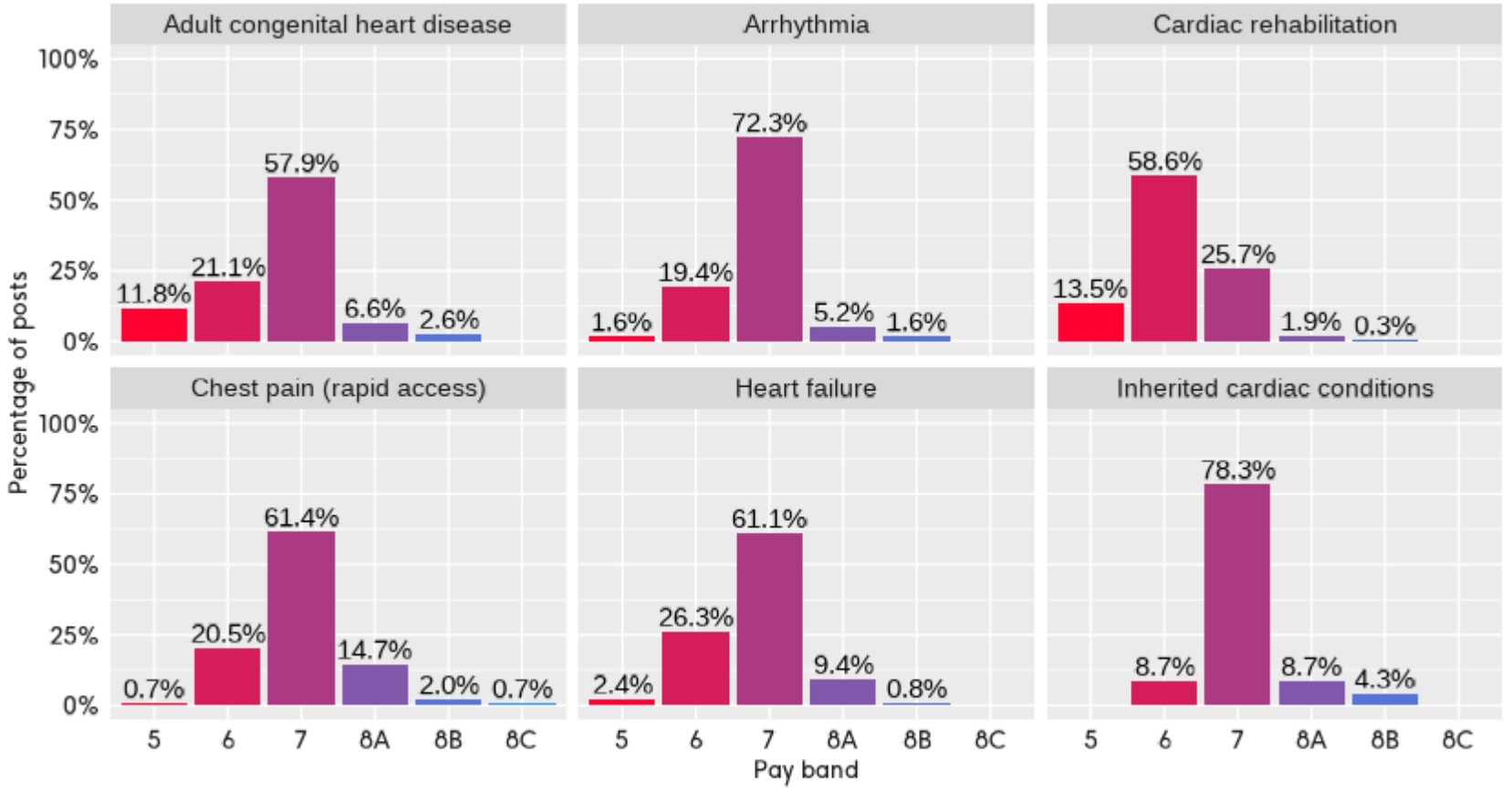
Cardiac specialist nurse area and pay band

The proportion of specialist nurses in each pay band varies by subspecialty.

Key points:

- In five out of six specialty areas, most nurses are in band 7.
- Cardiac rehabilitation is the exception to this, with a majority (58.6%) of cardiac rehab nurses in band 6.
- The specialty area with most nurses in band 8 was chest pain (rapid access) (17.4%).

Banding of cardiac specialist nurse posts reported in census, by area



Data displayed for all specialist cardiac nursing posts where pay band data was provided correctly (n = 1,444). By specialty area, the number of posts with pay band data reported were: adult congenital heart disease (n=76), arrhythmia (n=191), cardiac rehab (n=370), chest pain (rapid access) (n=293), heart failure (n=491), and inherited cardiac conditions (n=23)

Cardiac specialist nurses by age

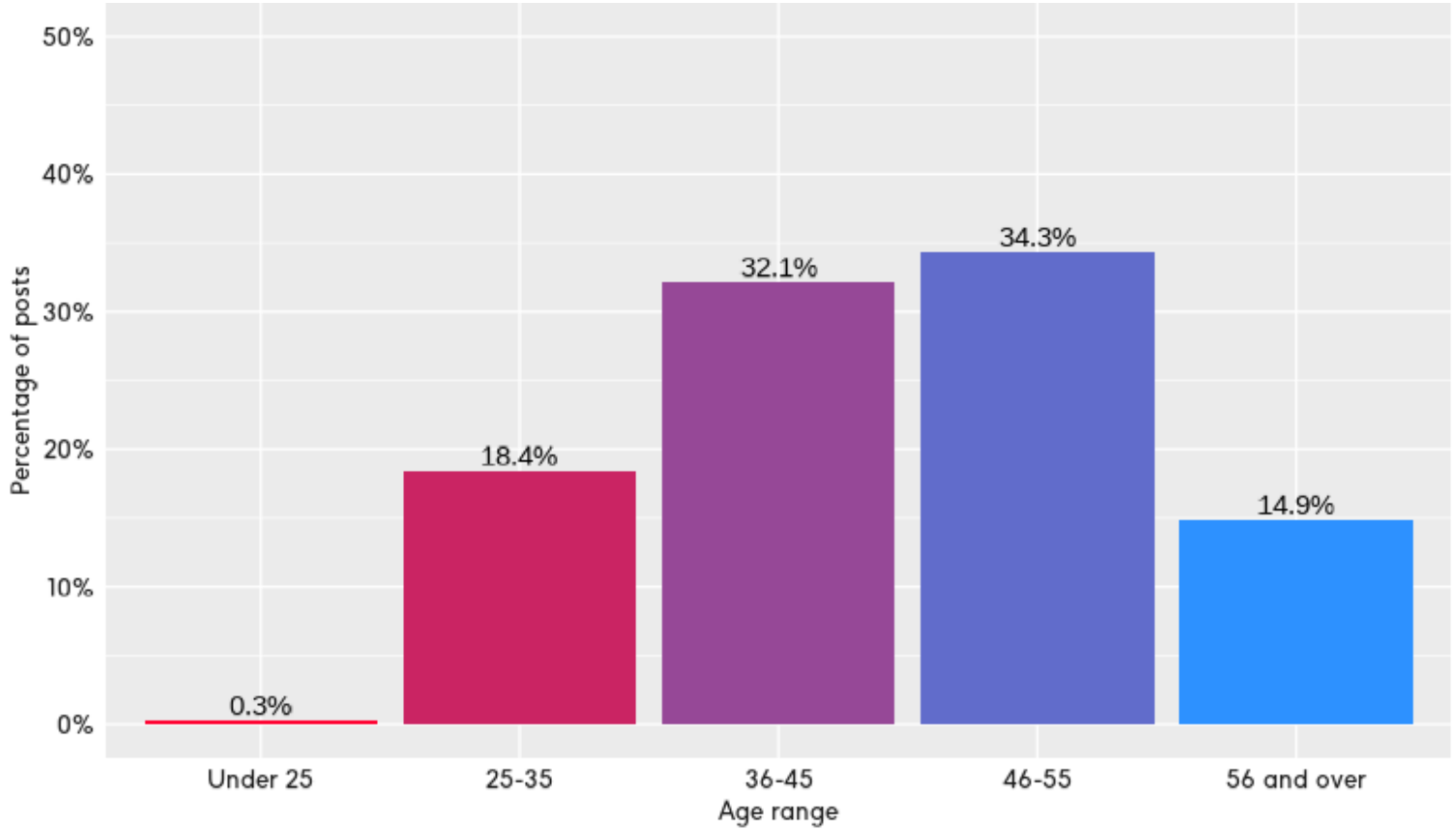
Trusts were asked select an age range for each of their permanent or fixed-term cardiac nurse specialists. These were:

- Under 25
- 25-35
- 36-45
- 46-55
- 56 and over

Key points:

- The most common age bracket was 46-55 (34.3%), followed by 36-45 (32.1%).
- However, the age of cardiac specialist nurses varied according to factors such as specialty area. These differences are highlighted on later pages.

Age range of cardiac specialist nurses reported in census



Note: Data displayed for all reported cardiac nurse specialists employed on permanent/fixed-term contracts where age data was provided correctly (n=1,171).

Cardiac specialist nurses by age and gender

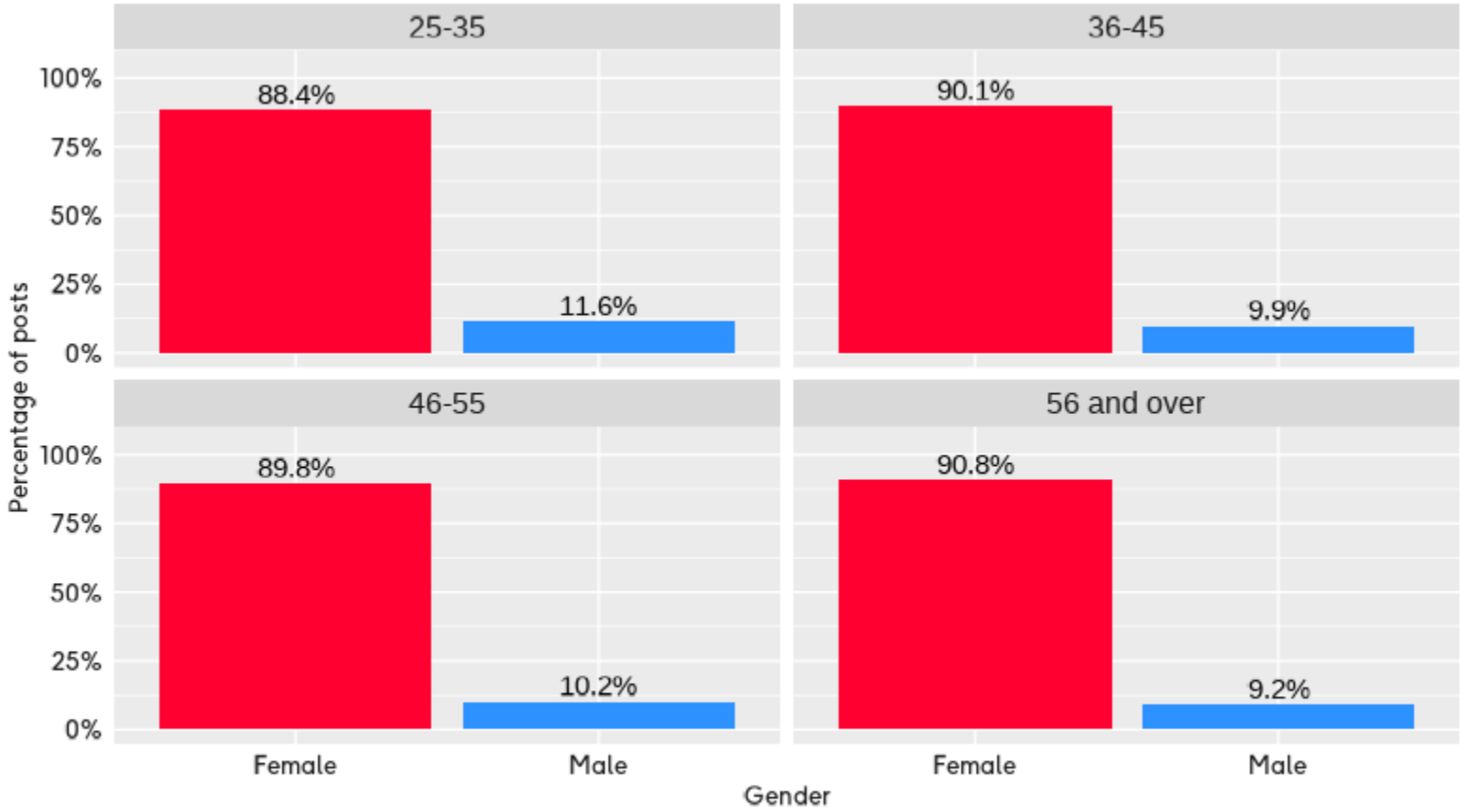
Amongst all cardiac specialist nurses, the gender split of the workforce was:

- 90.5% female
- 9.5% male

Key points:

- There were minimal differences in the proportion of female to male cardiac specialist nurses at different age ranges.
- Amongst all age-brackets, the percentage of nurses who were female ranged from 88.4% (25-35s) to 90.8% (56 and over).
- The percentage of nurses who were male ranged from 9.2% (56+) to 11.6% (25-35s).

Gender of cardiac specialist nurses, by age bracket



Note: Data visualised is for reported cardiac nurse specialist posts where age and gender data was reported correctly (n=1,168). By age bracket, the volumes reporting with correct data was: 25-35 (n=216), 36-45 (n=374), 46-55 (n=401), 56 and over (n=174). Under-25s excluded due to small sample size (n=3), of which all were female.

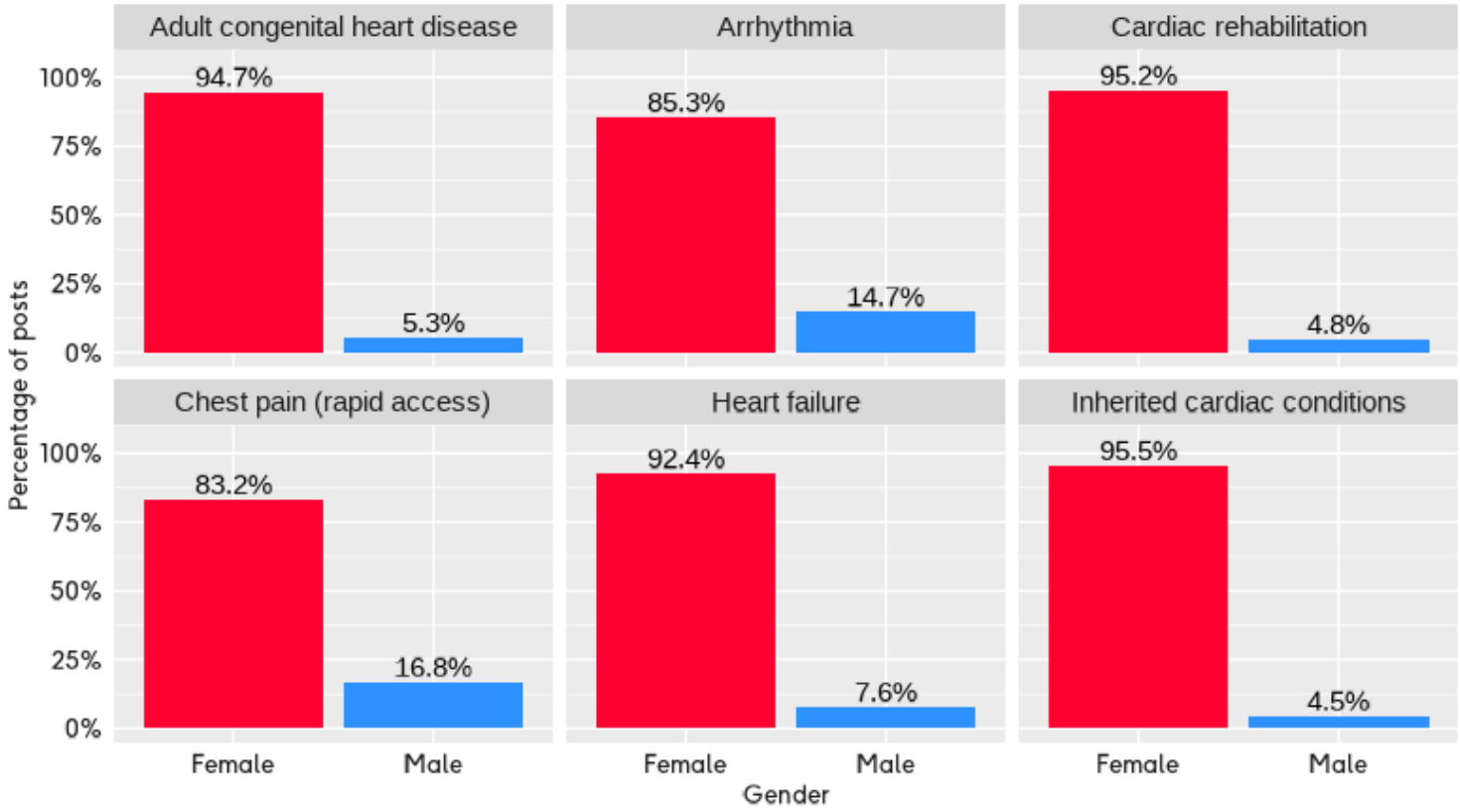
Cardiac nurses by specialty area and gender

While all the nursing subspecialty areas covered in our census had significant majorities of female staff (all over 83%), there is variation by specialty area.

Key points:

- There was a greater proportion of male nurses amongst chest pain (rapid access) (16.8%) and arrhythmia (14.7%) cardiac specialist nurses.
- Male nurses were least common amongst inherited cardiac specialist nurses (4.5%), cardiac rehabilitation (4.8%) and adult congenital heart disease (5.3%) specialist nurses.
- Overall, 47.7% of all cardiac specialist nurses were prescribers (n=653), A greater proportion of male nurses were prescribers.

Gender of cardiac specialist nurses, by speciality area



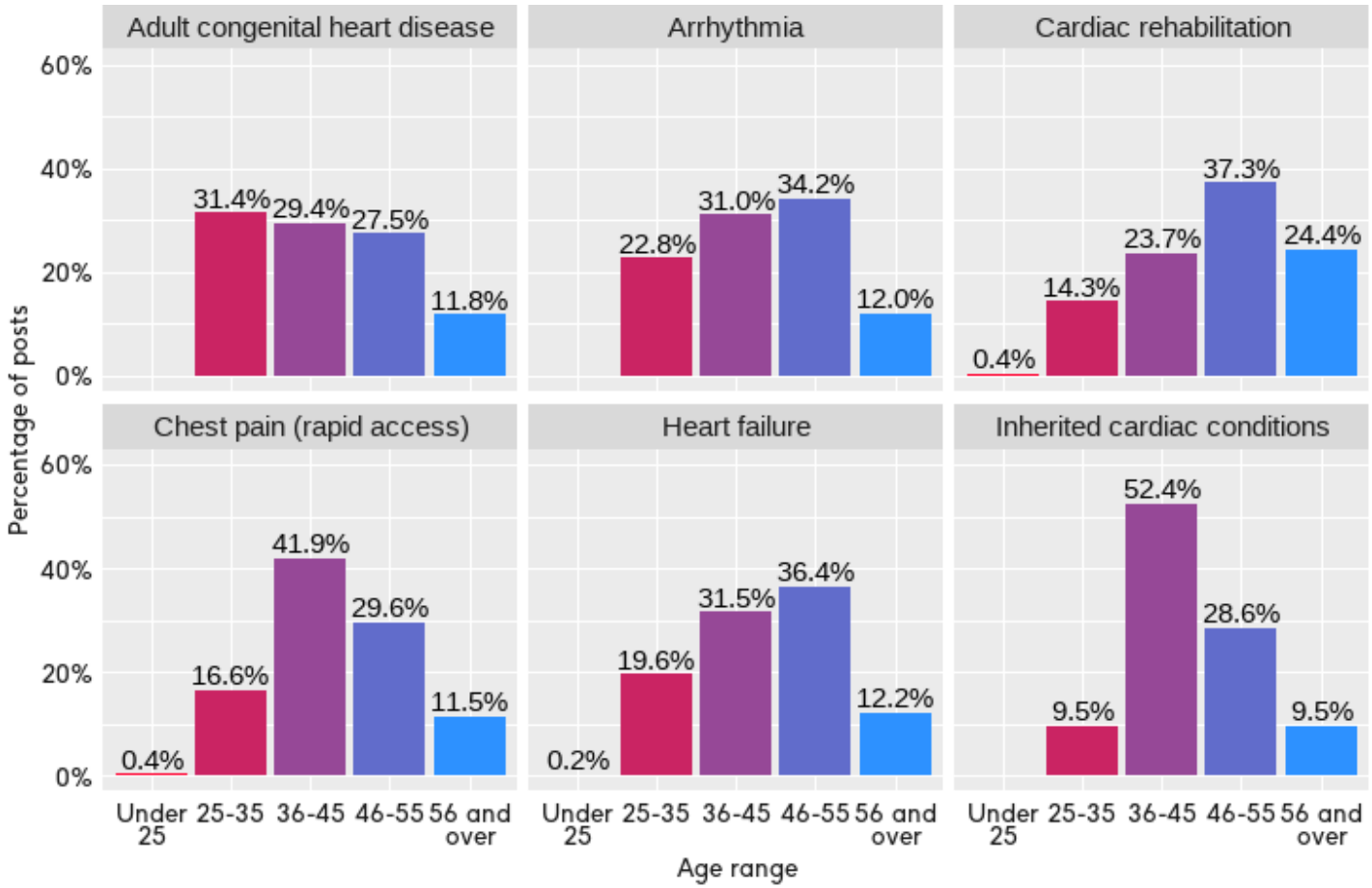
Data displayed for all posts filled by permanent/fixed-term staff where gender data was provide (n=1,394). By specialty area, the total number of posts included were: adult congenital heart disease (n=75), arrhythmia (n=184), cardiac rehab (n=355), chest pain (rapid access) (n=285), heart failure (n=473), and inherited cardiac conditions (n=22).

Cardiac specialist nurse area by age

Key findings:

- Almost a quarter (24.4%) of cardiac rehabilitation specialist nurses were aged 56 or over.
- Adult congenital heart disease had the youngest age profile. Almost a third (31.4%) of ACHD nurses were aged 25-35.

Age range of cardiac specialist nurses, by specialty area



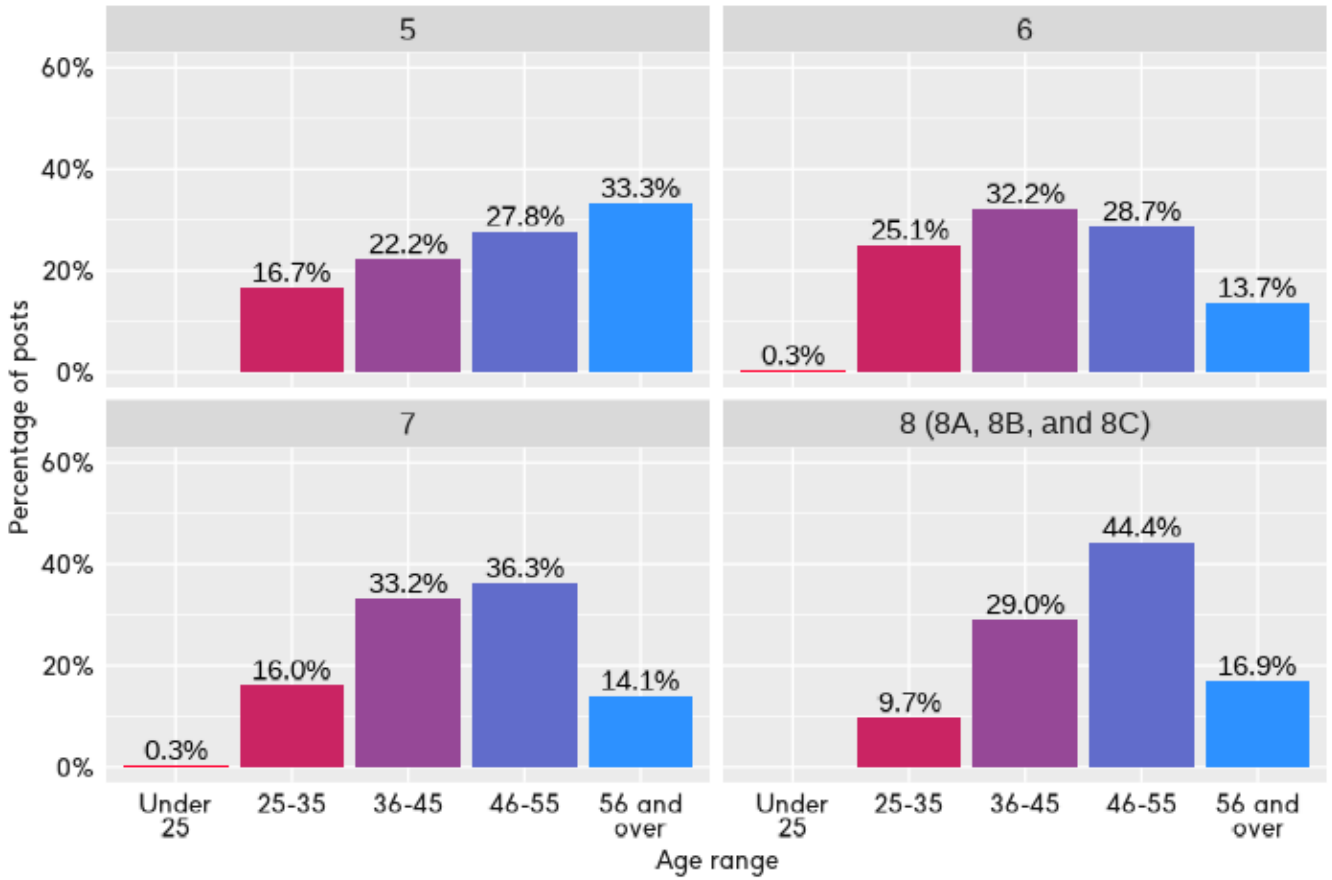
Data shown for all filled permanent/fixed-term posts reported in the census where age data was provided correctly (n=1,171). By specialty area, the total number of these posts was: adult congenital heart disease (n=51), arrhythmia (n=158), cardiac rehab (n=279), chest pain (rapid access) (n=253), heart failure (n=409), inherited cardiac conditions (n=21).

Cardiac specialist nurses by age and pay band

Key findings:

- For cardiac specialist nurses below band 8, there was no significant association between age and pay band.
- Band 6 is the pay band with the highest percentage of younger staff, 25.4% of staff in this band aged 35 or under.

Age of cardiac specialist nurses, by pay band



Data displayed for all permanent/fixed-term cardiac nurse specialists reported in the census where age and pay band information was provided correctly (n=1,171). By pay band, the total number of posts with valid age data was: 5 (n=36), 6 (n=394), 7 (n=617), and the combined band 8 (n=124). The data for band 8A, 8B, and 8C, has been combined due to small sample size: 8A (n=106), 8B (n=16), 8C (n=2).

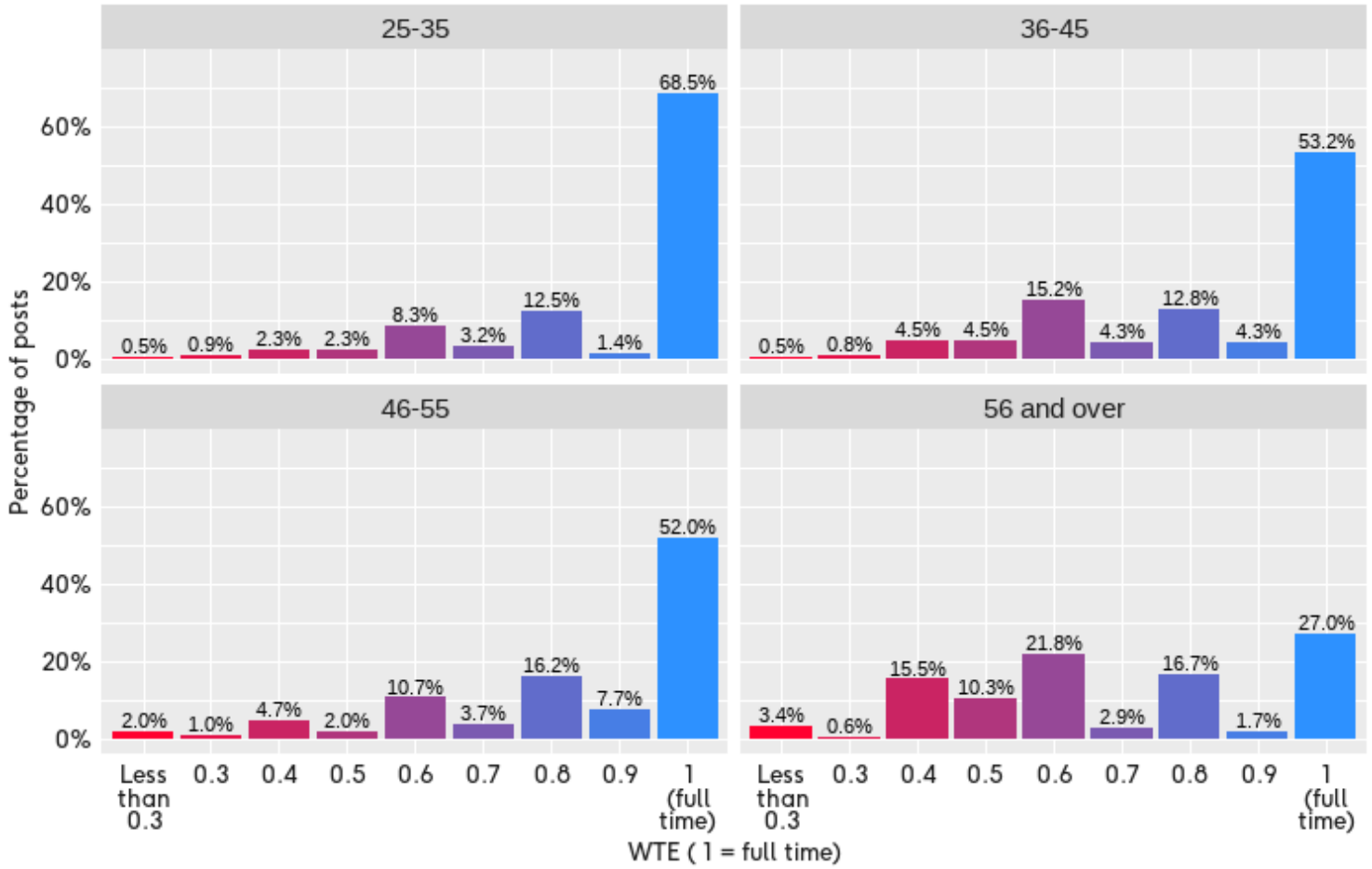
Cardiac specialist nurses working pattern by age and gender

Key points:

- There is a clear association between age and the contracted whole time equivalent* of cardiac specialist nurses.
- A smaller percentage of nurses work full time with each increased age bracket.
- Nurses aged 25-35 are most likely to work full time (68.5%). Nurses aged 56 and over are least likely to work full time (27.0%).
- Half of female nurses (49.8%) work full-time, compared to 80.5% of male nurses.

**Whole time equivalent (WTE) is calculated by dividing the number of required hours for a role by the contracted hours normally worked by a full-time employee.*

Contracted whole time equivalent (WTE) of cardiac specialist nurses, by age range



Data displayed for filled permanent/fixed-term posts reported in the census, where age and pay band data were provided correctly (n=1,171). By age band, the total number of posts that met these criteria were: under-25s (n=3), 25-35 (n=216), 36-45 (n=376), 46-55 (n=402), 56 and over (n=174). Under-25s excluded from above graph due to small sample size (n=3).

Conclusions

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Recommendations 47

Future work and next steps 48

Reflections on findings

To our knowledge, this is the most comprehensive publicly available picture of the specialist medical and nursing cardiac workforce in England to date.

While this is only a snapshot of part of the specialist cardiovascular workforce, we believe that the information captured here underscores the value of carrying out a census. Accessible and detailed data are required to understand future trends and vulnerable areas within workforce planning. These include areas highlighted in this census: age demographics that indicate potential retirement hot spots in specific subspecialties, gender disparities by grade and subspeciality, and demographic differences in working patterns. We also need to see work done to fully assess the burden of cardiovascular disease in the population, and for this to be matched against current workforce supply.

All of this will help to support development of measures to train and retain a robust and supported pipeline of clinicians fit for the future. This is why we would like to see this type of specialty- and subspecialty-level data across the breadth of the cardiovascular workforce underpinning the next phases of the NHS Long Term Workforce Plan.

Though this census has filled some important gaps, this work has only just scratched the surface of what we would like to understand about the clinical cardiovascular workforce, and there is plenty more to do.

Value of census approach

In our 2022 evidence review, we identified some key gaps in the information publicly available about the number and type of hospital doctors working in cardiology in England.

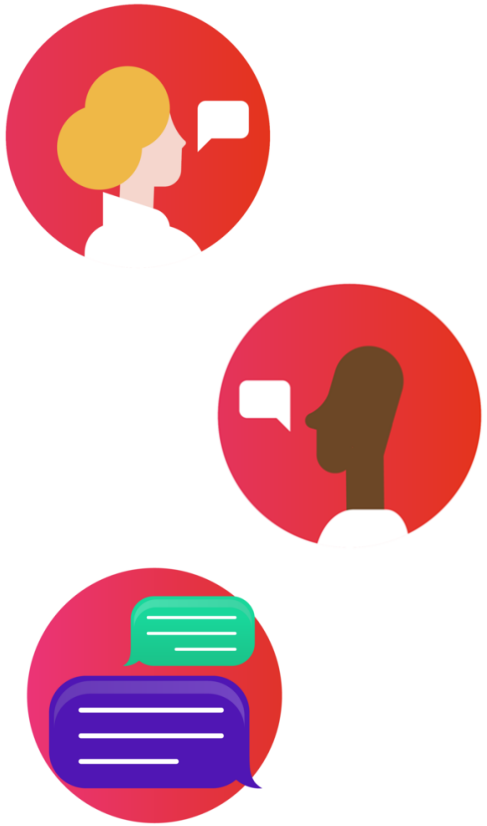
The evidence review is based on NHS speciality data which Trusts are incentivised to provide, and so is considered robust. Surveys and census data from professional societies add to this, including filling some gaps around demographic characteristics.

However, gaps in workforce information remain a concern. For example, sector stakeholders emphasised that there is very little available data anywhere about the number and type of hospital nurses providing cardiac care. Our census is a first step towards plugging this gap and providing novel data about a crucial part of the workforce.

NHS workforce planning is underway through the NHS Long Term Workforce Plan, which looks at patient and workforce projections in the context of an ageing population and regional variation in care. However, without a granular understanding of the NHS workforce (including demographic information), robust workforce planning for current and future demand is very challenging.

This is particularly crucial for cardiac services, which are projected to see an increase in demand with an ageing and increasingly medically complex population. For example, a projected one million more people are likely to be diagnosed with heart failure in England by 2040, which would result in significant health service use and increase in mortality.[18]

The following pages look at key challenges facing the workforce in detail.



Workforce supply

A fundamental concern that BHF has been raising awareness of is the shortage of cardiology healthcare professionals.

Our census results indicate that cardiologist and cardiac specialist nurse vacancies are low in comparison to published data on the national picture, which indicated a 8.9% vacancy rate (FTE vacancy rate %) across all posts in England in the quarter corresponding to the census date.[19] This compares to 2.4% of consultant cardiology posts that were vacant on the day of our census, and an additional 3.9% filled by locums.

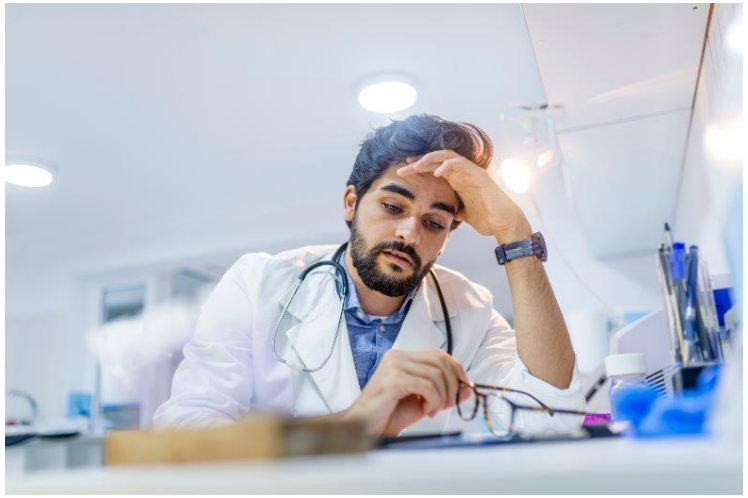
Similarly, cardiac specialist nurse vacancy rates were low in our census – with 2.3% of posts vacant on census day and 0.1% of posts filled by agency or bank staff. The latter is unsurprising, given that specialist nurse roles can be deployed variably and often depend on funding for training and posts, and that bank staff are often not appropriate to fill specialty posts. Stakeholders also highlighted that cardiology has been, to date, a relatively popular specialty, but one that is restricted by the number of available posts.

It is important to note that vacancy rates themselves are not a reliable indicator of shortages in the workforce, which are better expressed as insufficient staffing levels to meet overall patient need.

Vacancies do not account for demand that cannot be met by Trusts' current substantive staff levels and may be influenced by financial constraints that Trusts face around recruitment.

Previous reports have indicated shortages of cardiologists, both in terms of unequal cardiologist provision between regions in England[20] and, at a UK level, relative to other European countries.[21] However, further work is needed to understand the numbers of cardiologists needed to provide an acceptable level of care to an ageing and growing population.

True shortages are hard to estimate, but by better understanding baseline and future staff levels and defining need, it is possible to calculate the supply gap. The census is one step towards achieving this by providing a comprehensive view of the number of posts in the surveyed part of the workforce, and more knowledge of the cardiology landscape.



Age trends

Our census provides insight into the workforce age profile within cardiology subspecialities for both cardiologists and specialist nurses.

Data on age profiles can help us to recognise subspecialties that are vulnerable to retirement trends in the next 5-10 years.

While we do not have age breakdowns beyond 56 and over, research has found an average consultant retirement age of 62 years.[22] NHS workforce data also shows that doctors are retiring much earlier compared with average trends across the UK economy. Data from 2022 shows an average retirement age of 61.9 years for male doctors and 61 years for female doctors reflecting that doctors are currently retiring earlier compared with the UK economy average retirement age, which currently stands at 65.4 years for men and 64.3 years for women.[23]

Other research has shown that early retirement is on the increase for doctors –the number of GPs and hospital doctors in England and Wales opting for voluntary early retirement has increased by an average of 9.3% year on year, rising from 376 doctors in 2008 to 1424 in 2023.[24] Research from the RCP has also shown a third of doctors who are not yet retired say they want to retire early, but almost 60% would delay retirement if they could work flexibly or reduce their hours.[25]

Our data show that 26% of consultants in adult congenital heart disease and 23% of those in interventional cardiology are aged 56 or over. Sector stakeholders pointed out that primary percutaneous coronary intervention became a popular subspeciality in the early 2000s, resulting in many consultants now aged 50 or over, who may wish to reduce hours or retire from what is considered a demanding on-call rota.

The age profile of cardiac specialist nurses varied significantly according to subspecialty area. Cardiac rehabilitation had the oldest age profile, with almost a quarter (24.4%) of specialist nurses aged 56 or over. When looking at how age may affect working patterns, nurses aged 56 and over were least likely to work full time (27.0%, compared to 53.2% of all nurses).

While these trends are likely not unique to cardiology, our data highlight the utility of and need for routine collection of demographic data at a subspecialty level. Such insight can help illuminate areas where, depending on demand, measures to train and attract more people will be needed to ensure a sustainable pipeline of talent. Consideration also needs to be given to the reduction in training and supervision that is inherent in loss of senior staff, for which retention is equally important.

Gender differences

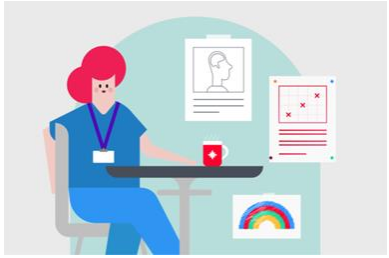
Less than 20% of the consultant cardiologists in our census were female.

While the proportion of female cardiology consultants is slowly growing, it remains lower than most other medical specialties in the UK.[26] RCP data shows that 41% of all consultants in England in 2022 were female, compared to just 18% of cardiology consultants.[27] The UK also has lower numbers of female cardiologists compared to most of Europe – under-representation of female cardiologists is greatest in the UK, Republic of Kosovo, Greece, and Ireland where they comprise <15% of cardiologists.[28]

In our census, we saw slightly higher proportions of female SAS doctors (36.3%) and higher specialty trainees (29.2%) than consultants. The proportions of women training in cardiology have been growing over time[29], though slowly and larger changes to the overall consultant composition will take many years to come into effect. Overall, the proportion of women cardiologists has not improved much over the last two decades.[30]

Gender differences also emerge in terms of cardiology subspecialty. The most commonly reported subspecialty amongst consultant cardiologists was interventional cardiology, at 35.2% of all filled posts. However, this subspecialty had one of the lowest reported levels of female consultants, at 8.2%, as did academic cardiology (6.7%), which we discuss later.

The barriers facing women in cardiology have been reported over a number of years, and the British Cardiovascular Society has committed to increasing the numbers of women training in cardiology and supporting those already working in cardiology.



8.2% of interventional cardiology consultants were female

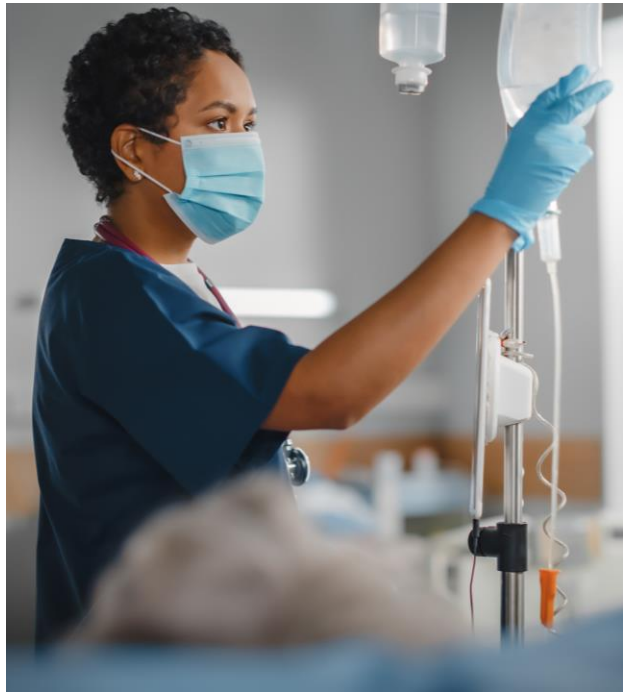
Challenges that have been reported include the paucity of female role models in senior leadership, the lack of perceived flexibility and long working hours that may be incompatible with caring responsibilities and specific safety concerns around radiology. Research has found that bullying and inappropriate language are commonly experienced by cardiology trainees and that these disproportionately affect female trainees.[31] Non-cardiology trainee respondents to a survey reported witnessing and experiencing bullying and sexism by cardiologists and cardiology trainees as a reason not to choose a career in cardiology.[32] Sexual harassment has also been previously reported by a third of female consultant cardiologists.[33]

The data we report here allow analysis of working patterns based around programmed activities (PAs) by gender. Half (50.1%) of male consultants were reportedly contracted for 12 or more PAs a week, compared to less than a third (27.8%) of female consultants. No female consultants were reported as contracted to do 15 or more PAs weekly, compared to around 2% of male consultants.

Our data may suggest different expectations either of or from women consultants in terms of taking on longer working hours, or different access to remuneration for additional hours worked, though more work is needed to understand the reasons for both the high proportion of very long working patterns in general for cardiologists, the gender differences we report here, and how they intersect with the lower representation of women in the consultant cardiology workforce.

Gender differences

Gender differences emerged for speciality area working patterns and pay bands for specialist nurses.



While all nursing subspecialty areas in our census had significant majorities of female staff, we do see variation in the proportion of male staff. Chest pain (rapid access) and arrhythmia were the subspecialities with the highest proportion of male specialist nurse (16.7% and 14.7% respectively). Notably, these mirror subspecialist areas that have significantly higher proportions of male consultant cardiologists, such as interventional cardiology.

We also see differences for working patterns and pay bands for male specialist nurses. Half of female nurses (49.8%) work full-time, compared to 80.5% of male nurses. A higher percentage of male specialist nurses (13.6%) were also in a band 8 post than female nurses (8.9%) – encompassing salaries from £50,952 to £96,376 across the band.

Half of female nurses work full-time, compared to 80.5% of male nurses

Though the number of male nursing staff reported in our census was low, these findings indicate that, while male nurses are a minority overall in cardiac nursing, they are more likely to work in some subspecialties than others, and more likely to work full-time and to be in higher pay bands. Exploring these differences will be a focus area in our follow-up research, to enable better understanding of potential inequalities within the nursing workforce, and what can be done to address these.

Clinical research

Anecdotally, we know that the time dedicated to research in cardiology job plans doesn't always end up being spent on research, due to other pressures in the role.

Worryingly, just 2.9% of consultants listed academic cardiology as a subspeciality in our census, and this was also one of the areas with the greatest number of older consultants (aged 56 and over). This finding aligns with wider reports from the Medical Schools Council, highlighting the need for a robust academic pipeline.[34]

Evidence shows that a research-active NHS delivers huge value to both patients and staff: patients have improved outcomes, lower mortality rates and increased confidence in their care. And likewise, engaging in research also improves job satisfaction amongst health workers, boosts staff morale and can reduce burnout.[35] The RCP has found 67% of doctors said having dedicated time for research would make them more likely to apply for a role.[36]

However, NHS staff report having insufficient time, funding and skills support to undertake research; inadequate organisational support; and limited opportunities to engage with research. Staff even report having to take annual leave to conduct research. Clinical academics in training also report barriers to the development of their dual careers, including challenges to career stability and flexibility in clinical training.

Our data show that 84% of consultant cardiologists had no weekly PAs dedicated to clinical research in their job plans. Of those who did have PAs, the majority had between just 2 and 8 hours a week dedicated in their job plan to research.

The recent Times Health Commission – an expert-led, evidence-based look at the needs of the NHS - recommended that NHS incentivises research by giving 20% of hospital consultants and other senior clinicians 20% protected time for research.[37] While the strengthened NHS research mandate within the Health and Care Act 2022[38] is positive, measures to make this a reality must start with giving clinicians the training, support and time to conduct research for the benefit of patients.

The proportion of female academics reported in our census (6.7% of consultants) is a concern, and one BHF has previously noted in our review of research funding diversity data. This review found that the proportion of female researchers applying for clinical study and programme awards (17%) was significantly lower than the proportion of female researchers among UK biosciences academic staff (47%).[39]

Diversity increases the likelihood of creativity and scientific innovation in many aspects of research. Diverse teams also help to deliver more inclusive and diverse research, with potential benefits for patients. For example, a review of international heart failure trials found that trials with a female first or senior author have better recruitment rates of women at 39% compared to 26% for those with male authors.[40] Gender-diverse workforces have been shown to benefit from improved retention, job satisfaction and productivity.[41]

Better understanding of the specific issues limiting research participation in the cardiovascular workforce will be needed to ensure that the NHS has access to the full breadth of talent it needs in research- active teams.

Better data for the future

The insights from this census demonstrate the value of collecting, collating, and analysing information on the cardiac workforce in England, particularly areas where much less information currently exists, such as cardiologist and cardiac nurse subspeciality and demographic information (especially data on how demographics interact with factors like working patterns and clinical subspecialties).

As we have outlined earlier in this report, the demand for cardiac care continues to rise. By understanding what the cardiac workforce looks like, better systems planning can be undertaken to ensure we have well trained and resourced healthcare teams.

Without a centralised method for collecting and consolidating information about the cardiac workforce, a census or survey is currently the only way to obtain this type of data.

For this project, this meant there was a substantial amount of information for Trusts to gather, sometimes over multiple sites, and often not held in a single database. This made it challenging for some Trusts to engage, impacting our final response rates. It also likely contributed to the lower completion rate for certain questions about cardiologist and nursing posts (e.g. gender and age) for Trusts who did participate in the census. Please see the Appendix for more detail on this.

Despite only investigating a subsection of the workforce responsible for managing the health and care of cardiovascular patients, the time and effort required to collect the data in this way was substantial – both for the Trusts taking part and for BHF.

Exploring the barriers facing women, and those experienced by clinicians from ethnic minority backgrounds, with disabilities and other protected characteristics (which we were unable to explore in this work), is critical to ensuring that policies support an inclusive workforce, with access to diverse talents.

It is important that this type of data is collected robustly and routinely by Trusts, collated at a national level and made publicly accessible. Charities and workforce bodies do have a role in collecting information on the workforces they represent, and in providing scrutiny on the contents of the NHS Long Term Workforce Plan. However, we are not best placed to collect and aggregate data on this scale.

Accessible, detailed information on both supply and demand is vital for workforce planning, and can help to illuminate shortages, potential retirement hotspots, inform the funding allocated for the Workforce Plan, and help us to design measures to train and retain an appropriate pipeline of clinicians.

Our recommendations

The Government should work with NHS England to collect data robustly and routinely on the cardiac workforce.	Sustainable, long-term funding must accompany the implementation of the NHS Long Term Workforce Plan.	The NHS must outline clear measures to address inequalities facing the cardiac workforce.	The NHS must develop measures that enable ICBs to meet their legal duties to facilitate health research and use of evidence, as outlined in the Health and Care Act.
This should be mandated by NHSE and held centrally. It should include key information such as subspeciality, position, clinical research and acacdemic activity and demographic information such as gender, age, ethnicity, and nationality. Data should be made publicly available to allow Trusts to benchmark their workforce regionally and nationally and to inform the next iteration of the NHS Long Term Workforce Plan.	Government must guarantee that the requisite postgraduate training places exist for the new cohort of additional trainees committed to in the plan. The 2023 Plan committed £2.4 billion of funding for expansion of medical training, running to 2028/29. However, this funding commitment does not consider the significant cost implications of an increase in NHS staff (i.e. wages, medical infrastructure, IT, medicines etc.) There will be significant cost pressures for future governments to ensure the plan is implemented fully. We need to see sustainable, long-term funding beyond this, alongside commitment to a structured workforce plan to train, retain and develop the careers of staff across the entire cardiovascular workforce including cardiac physiologists, pharmacists, physiotherapists and psychologists.	Key areas that our data indicate are of concern in cardiology include low staff numbers within specific specialties, demographic inequalities within the workforce and potential retirement hot spots. The NHS must tackle these issues as part of the NHS Long Term Workforce Plan and all workforce planning activity. This should include: • Outlining best practice examples of NHS organisational culture reviews and other successful approaches to tackling workforce inequalities and improving staff recruitment and retention. • Demonstrating an understanding of the drivers of key disparities within the cardiac workforce – such as under-representation of women – and outline measures to tackle these.	This should include a focus on supporting clinicians to do research in their programmed activities. For example, through access to research skills training, protected research time for research-engaged clinicians, and opportunities for joint appointments between NHS and employers in other sectors.

Future work and next steps

Our cardiac workforce census has provided us with good quantitative insights into what the cardiac workforce looks like in England. However, we want to interrogate our findings by adding relevant context to the figures.

We will follow up this work with a qualitative 'deep dive' with the cardiac workforce to better understand their experiences, the challenges that they face and the impact of these on patient care.

We will use this opportunity to explore areas of interest that emerged from the census including training opportunities, skill mix, gender differences, and factors affecting recruitment and retention. We are also particularly interested in the experience of clinical academics in cardiology, and how we can ensure that they are supported to undertake and participate in research.

Taken together, we hope that this programme of work will further support our goal of addressing data gaps and putting forward a vision for the future of the cardiovascular healthcare and research workforce.

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Glossary

Higher specialist trainees (HSTs)	Following medical school, foundation training and core training, the final part of training in the progression from trainee to consultant is specialty training, or Higher Specialty Training (HST). These are working doctors who have finished general medicine training.
Honorary consultants	Formally employed by a higher education institution, or other organisation, in a research and/or teaching capacity, but also provide services at a Trust. This means their data might not be held with the Trust, or it may be more informally recorded. If honorary consultants did not have a fixed job plan, we asked them to estimate the time spent there and convert that to PAs.
Programmed activities (PAs) and Supporting professional activities (SPAs)	A programmed activity is a four-hour unit of time during which contractual duties (like direct clinical care or supporting professional activities) are done. They form part of a job plan which sets out how many PAs will be worked and on what type of duties. If a postholder had a half PA they were asked to round up to the nearest whole number. SPAs underpin clinical care and contribute to ongoing professional development as a clinician. This includes activities like: teaching and training, medical education, continuing professional development, clinical governance, appraisal and revalidation. The amount of time in an individual's job plan allocated to SPAs will partly depend on their grade.
Specialty and specialist (SAS) doctor	Staff grade, associate specialist, or speciality doctors. Although unspecified in our guidance, Trusts likely included locally employed doctors at registrar level.
Vacant posts	We consider a vacant post to be a post that is unfilled or being filled by an agency, locum, or bank member of staff. For vacant posts, we asked respondents to estimate the number of PAs that they expected the vacant post to do.

Census questions and response options - cardiologists

Role	Question	Answer options	
Consultants, SAS doctors, HSTs, Specialist nurses	Is post vacant?	• Filled by permanent or fixed-term staff member • Filled by agency/locum/bank staff • Vacant	
	How long has this post been filled by agency/locum staff or vacant for? (if relevant)	• Less than 1 month • 1-2 months • 3-4 months • 5-6 months	• 7-8 months • 9-10 months • 11-12 months • Over 1 year
Consultants, Honorary consultants, SAS doctors	Subspeciality or area of practice	• Academic cardiology, • Adult congenital heart disease • Cardiac imaging • Cardio-oncology • Electro-physiology and/or device therapy • Heart failure management • Inherited cardiac conditions • Interventional cardiology (coronary)	• Paediatric cardiology and congenital heart disease • Structural heart intervention • Valve disease • Not applicable – no specialism outside general cardiology • Other
	PAs of the post (weekly)	• Respondents could select a whole number between 1 and 15 or “More than 15”	
	PAs of the post (weekly) dedicated to clinical research	• Respondents could select a whole or half number between 0 and 12	
Higher specialist trainees (HSTs)	Working patterns	• Full time • Less than full time • Not sure	

Census questions and response options – cardiac specialist nurses

Role	Question	Answer options
Specialist nurses	Job title	• Clinical nurse specialist • Specialist / Advanced nurse practitioner • Nurse consultant • Associate nurse • Complex case manager • Lead nurse • Matron (community or modern) • Support nurse • Community nurse • Other
	Banding of the post	• 5 • 6 • 7 • 8A • 8B • 8C • 8D
	Is the postholder a prescriber?	• Yes • No • Don't know
	Contracted WTE of the post	• Respondents could select any tenth between 0.3 and 0.9, "Less than 0.3" or "1 (full time)"

Cardiologist response rate

Response rate (%) of full-time/fixed-term staff with valid data

Question	Consultants	SAS Doctors	Higher Specialty Trainees	Honorary consultants
Gender	98.5%	94.6%	93.7%	82.8%
Age	64%	36.2%	50.6%	48.3%
Weekly PAs	97.1%			
Research PAs	85.7%			
Subspecialty	100%			
Gender and PAs	96.7%			
Gender, age, and PAs	63.2%			
Gender and subspecialty	98.5%			
Age and subspecialty	64%			

Nurse response rate

Response rate (%) of full-term/fixed term nurses with valid data

Question	Percentage with valid data (%)
Gender	98.6
Age	82.8
Pay band	99.6
Band and area (this should be identical to above)	99.6
WTE	99.6
Prescriber	98.1
Prescriber + specialty (this should be same as above)	98.1
Gender + specialty area	98.6
Prescriber + gender	96.7
WTE and gender	98.5
Age and specialty (should be same as age)	82.8
Age and pay band	82.8
Age and WTE	82.8
Age and gender	82.6

Response rate (%) of all nursing posts with valid data

Question	Percentage with valid data (%)
Pay band	99.7
Area	100
Pay band and area	99.7

Response rate by region

Response rate (n and %) of trusts invited to participate in census

		Doctors tool		Nurses tool	
NHS Region	Total number of trusts in region invited to participate	Number of trusts who submitted response	Percent of trusts who submitted response	Number of trusts who submitted response	Percent of trusts who submitted response
East of England	14	8	57.1%	9	64.3%
London	19	10	52.6%	11	57.9%
Midlands	21	11	52.4%	10	47.6%
North East and Yorkshire	22	11	50.0%	8	36.4%
North West	20	10	50.0%	12	60.0%
South East	17	11	64.7%	11	64.7%
South West	13	11	84.6%	11	84.6%

Note: the above table excludes the one Trust who submitted a partial response for both the doctors and nurses tool.