

Medical Workforce Census Report 2020





Royal College of Anaesthetists

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The Medical Workforce Census Report would not have been possible without clinical directors and College tutors freely giving their valuable time to complete the survey. They are to be congratulated for helping to provide an invaluable snapshot of the anaesthesia workforce in the UK.

We would also like to extend our thanks to the regional advisers anaesthesia, heads of schools, training programme directors and the administrative staff based at the trusts and boards who helped gather the data.

Foreword



We will all remember 2020 as a very difficult year. The COVID-19 pandemic dramatically changed our personal and professional lives. Almost every doctor experienced new pressures and challenges working in an environment that posed a very real risk to their own health and caring for patients with a new and unfamiliar illness for which there were limited treatment options. The rapid influx of critically ill patients with COVID-19 threatened to overwhelm critical care units, requiring conversion of operating theatres and post-anaesthesia care units into surge capacity critical care unit beds. Anaesthetists were redeployed to provide round-the-clock care looking after critically ill patients and providing support for intensive care colleagues. Beyond the critical care units, anaesthetists trained and guided ward doctors in the management of acutely ill patients. Some returned from retirement and others volunteered to cover newly set up Nightingale hospitals. As the initial wave settled, departments of anaesthesia faced new challenges providing additional anaesthetists for elective sessions in 'clean' independent sector hospitals as well as in their own base hospitals. During this busy time, some anaesthetists were shielding, others were sick and some were isolating due to illness in household members.

These pressures are continuing. At the time of writing, numbers of COVID-19 positive tests are rising again across Europe and the profession is bracing itself for another surge. The skills, knowledge and dedication evident in the specialty of anaesthesia have never been more necessary, and the impact of workforce shortages have never been more acutely felt by those on the frontline. The additional pressure of covering unfilled posts and absent colleagues leads to stress and burnout. Patient care suffers and colleagues leave the profession.

The 2020 census data collection was completed just before the pandemic struck. A repeat exercise now would probably show a worse position. Whether there will be an effective vaccine is unknown and it is likely that we will be working in the shadow of COVID-19 for a prolonged period. The specialty of anaesthesia will remain at the centre of our response to this virus, so we need to invest in the workforce, keeping these highly skilled doctors fit, healthy and ready to deal with further surges. Ensuring that there are enough anaesthetists is a key part of that strategy and to do that we need to know where we are now.

The 2020 census is a rich source of workforce data, highlighting where workforce pressures across the UK already exist. I would like to thank the clinical directors, lead clinicians and College tutors who recognised the importance of this exercise and used their precious time to complete the survey. The high response rate of 97% from trusts across the UK was a significant testament to the willingness and professionalism of the respondents and the recognition of the importance attached to this vital aspect of College activity.

I would like to thank Hamish McLure and Phil Antill for collating and analysing the information, and I would particularly like to thank Afsana Choudhury for her tireless work in coordinating the data collection and for her communications work which has been crucial to the success of this census report.

It gives me great pleasure to introduce the census report. This is a report which highlights the current state of UK anaesthesia workforce in 2020.

Professor Ravi Mahajan
RCoA President

Summary of main findings



Consultant workforce

Results showed that the consultant workforce in the UK had reached 7,959, growing at an average 2.1% per year since 2007.

Specialty and associate specialist doctors (SAS) and trust doctors

SAS and trust doctor numbers are unchanged compared with the 2015 census, despite an increase in service demand, which is likely to continue to grow, and an increase in workforce gaps.



Gender balance

Female consultants make up 38% of the workforce in 2020, compared with 28% in 2007. Similarly, the SAS doctor workforce is now 39% female compared with 35% in 2010.

Age

More consultants are now working beyond the age of 60 years, up from 5% in 2015 to 7% in 2020. The 50 plus age group is now 39% of the workforce, compared with 31% in 2007.



Vacancies

Just over 90% of departments had at least one consultant vacancy. There were 680 vacant consultant posts and 243 vacant SAS doctor posts in the UK.

The funded workforce gap in the consultant workforce continues to rise from 4.4% in 2015, 5.4% in 2017, 6.9% in 2018 to 8% in 2020.

Although the overall funded gap was 8%, there was variation between the devolved nations: 7.7% in England, 4.8% in Northern Ireland, 7.7% in Scotland and 11.8% in Wales.

The real gap rose to 11.8% for consultants and 18.4% for SAS doctors (clinical directors reported how many additional posts [aspirational gap] were required to meet demand).

Anaesthesia associates

There were 173 anaesthesia associates recorded as part of the census. The University of Birmingham reported in 2020 that 205 have qualified.



Anaesthetists in training

There were 4,311 trainees of various grades (core training years 1-3, acute care common stem anaesthesia, specialty training 3-7, clinical research fellows, Post Certificate of Completion of Training fellows) who should reach Certificate of Completion of Training (CCT) over the next five to eight years.



Locums

An additional 349 anaesthetists were on various forms of long-term leave. There were 380 consultant locums and 100 SAS doctor locums.

Senior staff

34% of departments had a policy for senior consultants to come off the on call rota compared with only 7% having a policy for senior SAS doctors.



Pension tax changes

1,133 consultants (14% of all consultants – range 4% in London to 19.4% in Scotland) reduced their programmed activities as a result of the pension tax changes.



Advertised posts

Of 198 departments that had advertised a consultant post, 103 (52%) had been unable to appoint. Intensive care medicine is disproportionately represented in the posts where recruitment failed.

Of the 172 departments that had advertised an SAS doctor post, 67 (39%) had been unable to appoint.

Background

In a time of drastic change it is the learners who inherit the future.

Eric Hoffer, Reflections on the Human Condition (1973)

Anaesthesia has workforce shortages which may be traced back to the economic crisis of 2007/08. Along with much of the global economy at the time, the NHS had entered an age of austerity and was experiencing significant financial pressures. In order to fund frontline services, in 2009 the Chief Executive of the NHS, Sir David Nicholson, challenged the NHS to find £20 billion of efficiency savings by 2015. Staffing pay represents half of the budget for many parts of the NHS, so workforce numbers and costs were an obvious area to look for savings. The following year in 2010, the Department of Health set up the Centre for Workforce Intelligence (CfWI) to review and plan workforce numbers across the NHS in England.

In 2011, the CfWI published *Shape of the Medical Workforce: Informing Medical Training Numbers* which made recommendations about the numbers of trainees required to generate sufficient CCT-holders for the various medical specialties.¹ The process that informed their decisions involved working with employers, medical specialties and their lead deans to review available evidence, understand professional views and policy drivers, and then feed that information into an agreed model of participation rates, attrition rates and retirements. The CfWI recommendations were to be implemented by 2014, with an expectation that they would have had an impact on the numbers of CCT-holders in 2020. The authors recommended an expansion of general practitioner (GP) training posts at the expense of hospital-based specialties, which included anaesthesia. However, they acknowledged that anaesthesia and intensive care medicine were specialties which required 'a more focussed piece of work'.

In 2015, four years later, the more focussed piece of work was published. Unfortunately, by this time some postgraduate medical deans had already started to reduce the numbers of places on anaesthetic training programmes. The CfWI in-depth review reported that there was an unmet need of 15% for anaesthesia and 25% for intensive care medicine.² Complex modelling was used to predict that both specialties were likely to grow at 4.7% per year and that, without action, demand would outstrip supply. There are concerns that these numbers may under-represent demands as, since that time, anaesthesia practice has moved from being largely theatre based and has expanded into other areas as part of the perioperative care programme. The CfWI functions have since moved into Health Education England.

The College monitors workforce numbers closely, performing census surveys in 2007, 2010 and 2015, and more focussed recruitment surveys in 2017 and 2018.^{3,4} These surveys include enquiry about gaps in departmental workforce across the UK. The gap may be expressed as the number of funded but unfilled posts as a percentage of the total funded establishment (i.e. filled and unfilled posts). The gap had risen in previous census surveys from 4.4% in 2015, 5.4% in 2017 and then 6.9% in 2018. The increasing workforce gap is unsurprising if we look at the pipeline supply of anaesthetists gaining their CCT each year. There has been a steady decline in the number of newly qualified anaesthesia specialists from 569 in 2013 to 373 in 2019, a 34% reduction.⁵ Alongside that reduction in supply, demand for senior anaesthetists has increased as the elderly sick population grows, new complex surgical procedures require more experienced senior anaesthetists, additional roles in perioperative medicine are taken on by anaesthetists, anaesthetists in training work more restricted hours and the amount of weekend and evening work has increased.

Anaesthesia is not alone in facing workforce challenges. In 2019, the Royal College of Paediatrics and Child Health published results of their workforce modelling, estimating that there was a gap of 856 paediatric consultants across the UK.⁶ A recent census by the Royal College of Psychiatrists showed a gap of 708 psychiatry consultants (9.3%).⁷ These shortages in secondary care are reflected in primary care. General practice has well-publicised shortages and in December 2019 NHS Digital recorded that the number of full-time equivalent GPs had dropped by 1% in the last year as they leave the profession or reduce their working hours.⁸ Workforce shortages are widespread. The solution will lie in planning and investment. Shifting training numbers from one specialty to another will only expose gaps in other areas.

Over recent years, media interest has gathered momentum and pushed the issue of health worker shortages up the political agenda. In response, in January 2019, the UK government published the NHS Long Term Plan which recognised that *'over the past decade, workforce growth had not kept up with need'*.⁹ This plan has many laudable aims around improving the working lives of staff and increasing numbers of medical students, nurses, midwives and GPs, but little mention of addressing the shortages of hospital specialists. Later in June 2019, NHS England published the Interim NHS People Plan which described the need to increase numbers of GPs and psychiatrists, but again, other hospital specialties were not mentioned.¹⁰

It is in this context that anaesthesia must have data to demonstrate our changing workforce position and enable us to lobby national policy makers. Anaesthesia is the single largest hospital specialty. Anaesthetists provide services for a wide range of surgical services including, pre-assessment, anaesthesia and analgesia on the labour ward, long-term vascular access, acute and chronic pain management, participation in multi-disciplinary teams and perioperative care. Provide a major contribution to intensive care services as well as research, training and supervision of medical students, anaesthetists in training, anaesthesia associates and paramedics. Unlike many other specialties there is no potential for cross-cover from doctors in other specialties, as the ability to deliver a safe anaesthetic, for even the most straightforward of cases, is simply not part of the wider skill set of doctors outside our specialty. If we have insufficient numbers of anaesthetists, the impact on our patients will be profound, affecting both their quality of life and how long they live.

Method

In May 2019, the College Workforce Strategy Committee set up a census working group to devise and administer a census to be sent out to all clinical directors in the UK, via a list held by the College. The questions were derived from the 2015 census and were expanded or updated as necessary. As preparation for the census, in November 2019, the working group conducted a pilot census to ensure the questions were clear. The pilot was distributed to 10 clinical directors.

The census was in two parts. Part 1 related to consultants, SAS doctors, anaesthesia associates and locums, and was directed to the clinical director. Part 2 related to the training grades and was sent to College tutors.

In some organisations, there are several individuals with clinical management roles which may lead to confusion if they were all to complete part but not all of the census. In the autumn before the census, respondents were contacted to confirm which single individual from that organisation would be most appropriate to collect all their data and complete the census for that organisation.

The online questionnaire went live between 6 January to 6 February, with further email and telephone reminders to complete the census, and it was closed on 6 March 2020.

Collecting data for the census was a significant undertaking, requiring co-ordination between clinical directors, clinical leads, College tutors, regional advisers anaesthesia, head of schools and often departmental administrators.

The analysis of the census returns was interrupted by the COVID-19 pandemic. As the initial surge of the pandemic settled, we contacted hospitals who had not responded and those that responded to only Part 1 or 2 of the census, to get as complete a dataset as possible. Not all respondents answered every question. Some data were easier to source than others and interpretation of results must allow for that.

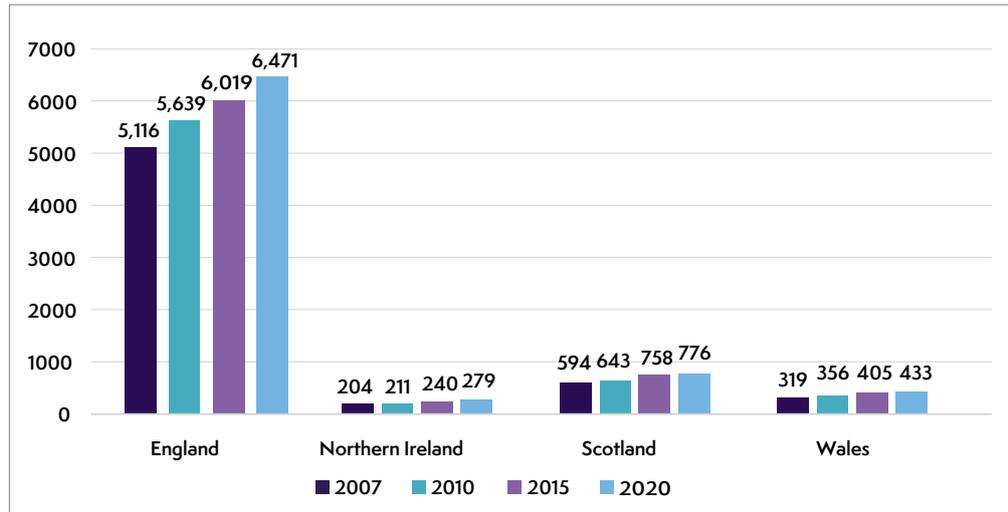
Consultant workforce



Number of consultants

The census showed that in 2020 there were 7,959 consultant anaesthetists in England, Northern Ireland, Scotland and Wales (Figure 1). This is an increase in all nations since 2007.

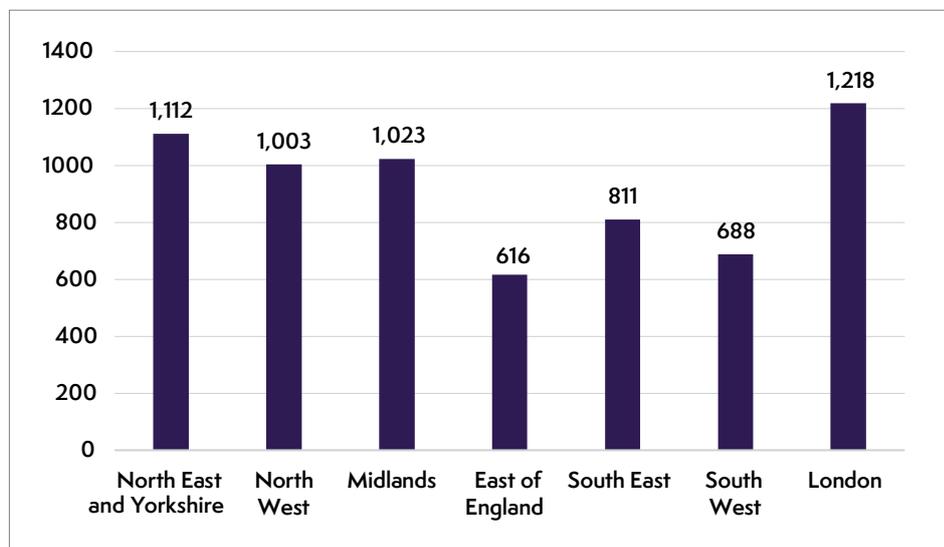
Figure 1: Total number of consultants



The UK consultant growth rate from 2007 to 2020 is an average of 2.1% increase per annum (p.a.). This is slightly less than the 2.3% p.a. growth rate from 2007 to 2015 noted in the last census. However, it must be remembered that we had responses from 97% of the UK not the 100% recorded in 2015. In addition, the growth rate is dependent on many factors and may be limited by the supply of anaesthetists rather than demand.

The number of consultants in regions varied across England (Figure 2).

Figure 2: Regional variation in consultant numbers in England



Consultant workforce growth

Between 2007 and 2020, the rate of growth in consultant numbers has varied across the devolved nations, with Scotland, Northern Ireland and Wales increasing at a higher rate of 2.4%, 2.8% and 2.7% p.a. respectively, whereas England has grown at 2.0% (Table 1).

Table 1 Growth rates from 2007 to 2020

	2007	2020	% change
England	5,116	6,471	2.0
Northern Ireland	204	279	2.8
Scotland	594	776	2.4
Wales	319	433	2.7
Totals	6,233	7,959	2.1

Population data available from the Office of National Statistics can be used to compare numbers of consultants per population size in each of the UK nations.¹¹ Northern Ireland has the highest number of consultants per 100,000 population (Table 2). This is surprising as the participation rate in Northern Ireland (number of PAs that each consultant is contracted to work) is also high.

Table 2: Population data and number of consultants

	Population in 2019	Number of consultants	Number of anaesthetists per 100,000 population
England	56,286,961	6,471	11.5
Northern Ireland	1,893,667	279	14.7
Scotland	5,463,300	776	14.2
Wales	3,152,879	433	13.7

If we include SAS and trust doctors, then we can see that Wales has a higher number of non-trainee anaesthetists per 100,000 population (Table 3). This is consistent with the lower participation rates seen in Wales which would necessitate higher numbers of anaesthetists.

Table 3: Population data and combined number of consultants, SAS and trust doctors

	Population in 2019	Combined number of consultants, SAS and Trust doctors	Number of anaesthetists per 100,000 population
England	56,286,961	8,252	14.7
Northern Ireland	1,893,667	327	17.3
Scotland	5,463,300	875	16.0
Wales	3,152,879	603	19.1

Gender

Since 2007 there has been an increase in the proportion of females in the anaesthesia workforce. This change has been more marked in anaesthesia compared with the group of registered medical practitioners as a whole. The General Medical Council (GMC) online Data Explorer shows that the percentage of female doctors has increased from 43% to 46% from 2012 to 2019.¹² In a similar time

period, the proportion of female anaesthetists has increased in England from 28% in 2007 to 38% in 2020 (Table 4). Over the past five years the proportion of female anaesthetists has increased across all four devolved nations.

Table 4: Gender distribution of consultant anaesthetists

	England		Northern Ireland		Scotland		Wales	
	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)	Male (%)	Female (%)
2007	70	28	77	22	69	30	71	29
2010	70	30	73	27	67	33	69	31
2015	68	32	69	31	66	34	66	34
2020	62	38	62	38	61	39	65	35

Participation rates

The consultant contract is time based. A consultant’s working week is divided into programmed activities (PAs), which include direct clinical care (DCC), supporting professional activities (SPA), additional NHS duties and external duties. These PAs may be three to four hours in length depending on the time of day and day of the week. A standard contract is 10 PAs per week. Some consultants work less than full time and have fewer than 10 PAs in their job plan, whereas others may work up to 12 PAs per week. The number of PAs in consultant’s job plans is called the participation rate.

The census showed that 62% of consultants are working more than 10 PAs, which is less than the figure of 74% noted in the 2015 census (Table 5). The proportion of consultants working more than 10 PAs varies across the UK. In Northern Ireland, the proportion of consultants working more than 10 PAs is high (87%).

Table 5: Gender distribution and participation rates of consultants

Programmed activities	Male	Female	Numbers	%
7 or less	240	140	380	5
8	97	178	275	4
9	116	214	330	4
10	1120	897	2017	26
10+	3275	1565	4840	62
Totals	4,848	2,994	7,842	100

Note: Scottish data on participation rates was incomplete and is based on 659 consultants so the total number of consultants appears to be less.

Census data showed that fewer hospitals in Northern Ireland offer additional clinical activity. The lack of additional clinical activity may be a result of the high participation rates meaning that consultants cover the required work. Conversely, in Wales there are proportionately more hospitals offering additional clinical activity. These sessions are paid at higher rates than if they were done within job planned time, which incentivises consultants to restrict their contracted PAs to 10, and to perform additional clinical work at the enhanced extra contractual rates. As a result, only 39% of consultants are contracted to work more than 10 PAs in Wales.

This difference in approach to additional clinical activity may also explain the difference in workforce gap. In Wales, where fewer consultants work more than 10 PAs, the workforce gap is 11.8%, whereas in Northern Ireland, where the majority of consultants work more than 10 PAs, the workforce gap is 4.8%. Participation rates also vary across England (Table 6). In the East of England, 76% of consultants are contracted for more than 10 PAs compared with 51% in London. This may be a reflection of increased opportunities to generate additional income outside of the NHS in London compared with other regions.

Table 6: Consultant participation rates by regions in England and Northern Ireland, Scotland and Wales (% of consultants)

	7 or less	8	9	10	10+
North East and Yorkshire	3	4	5	20	67
North West	5	2	3	24	67
Midlands	4	4	5	24	64
East of England	3	2	5	13	76
South East	6	4	4	23	63
South West	8	4	5	28	55
London	7	4	5	33	51
Northern Ireland	1	2	1	9	87
Scotland	4	3	4	31	57
Wales	4	5	1	51	39

Age distribution

As has been seen with previous censuses, the largest cohort of consultants is aged 40-49 years (Figure 3). In the 2015 census, only 5% of consultants worked beyond 60 years of age. However, the 2020 census shows that this figure has increased and around 7% of consultants are now working beyond 60 years of age. The reason for this change is unclear. It was expected that the pension tax changes would encourage consultants to retire early, but our results do not support that. The data from the UK nations shows a slightly younger workforce in Northern Ireland and a slightly older workforce in Wales (Figure 4).

Figure 3: Age distribution of consultants

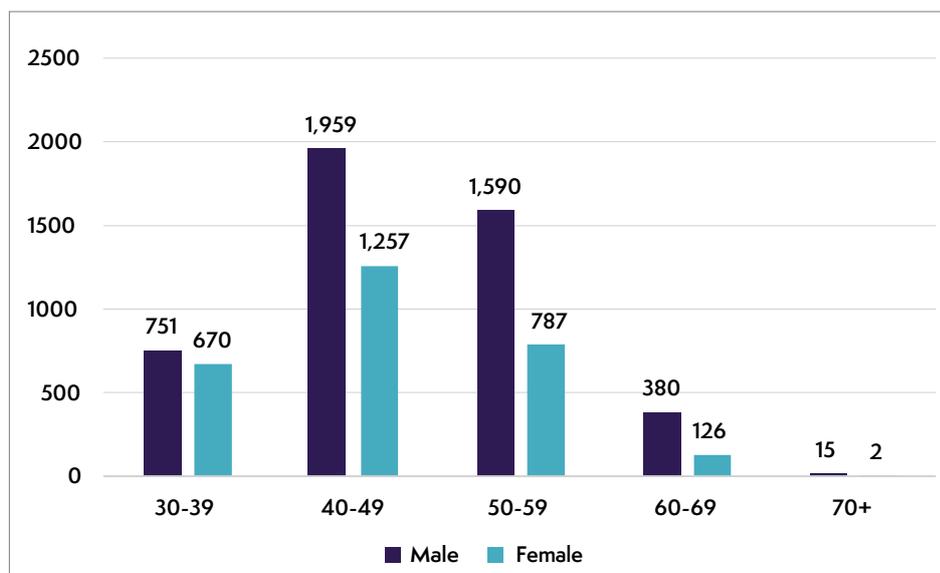
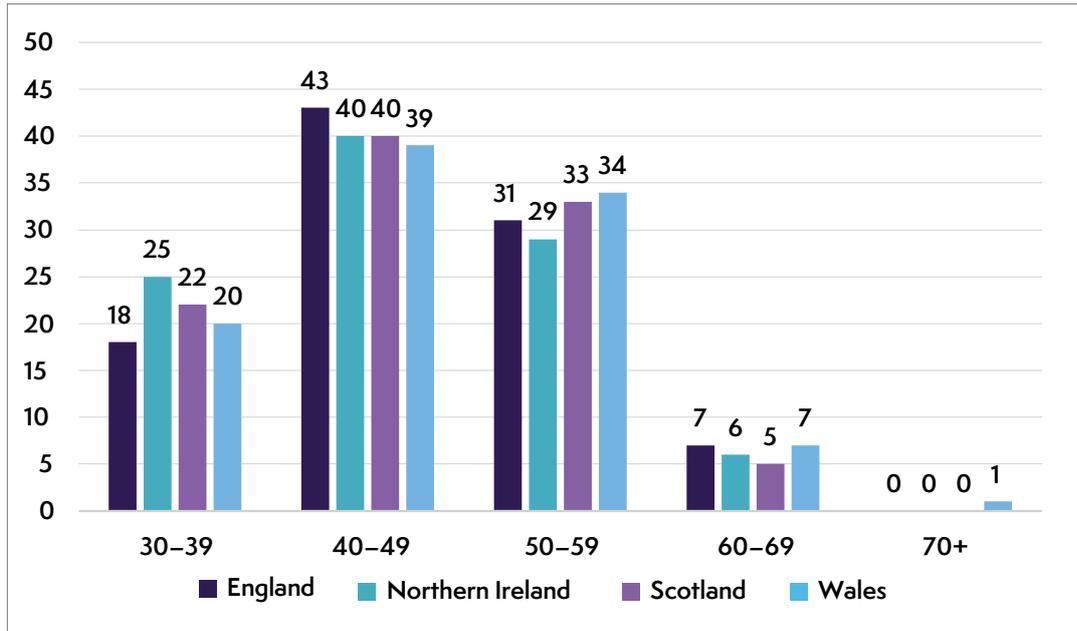


Figure 4: Workforce age distribution (%) by UK



The anaesthesia workforce is getting older. If we compare the proportion of consultants in each of the cohorts, across the censuses from 2007 to 2020, we can see that although there is an increase in numbers of consultants in the 30-49 years age range, the proportion of the total is falling, whereas there is an increase in the 50+ years age group (Figure 5). In 2007, the 50+ years age group made up 31% of the consultant workforce, whereas in 2020 it makes up 39% of the workforce (Figure 6).

Figure 5: The difference: 2007, 2010, 2015, 2020 consultant ages

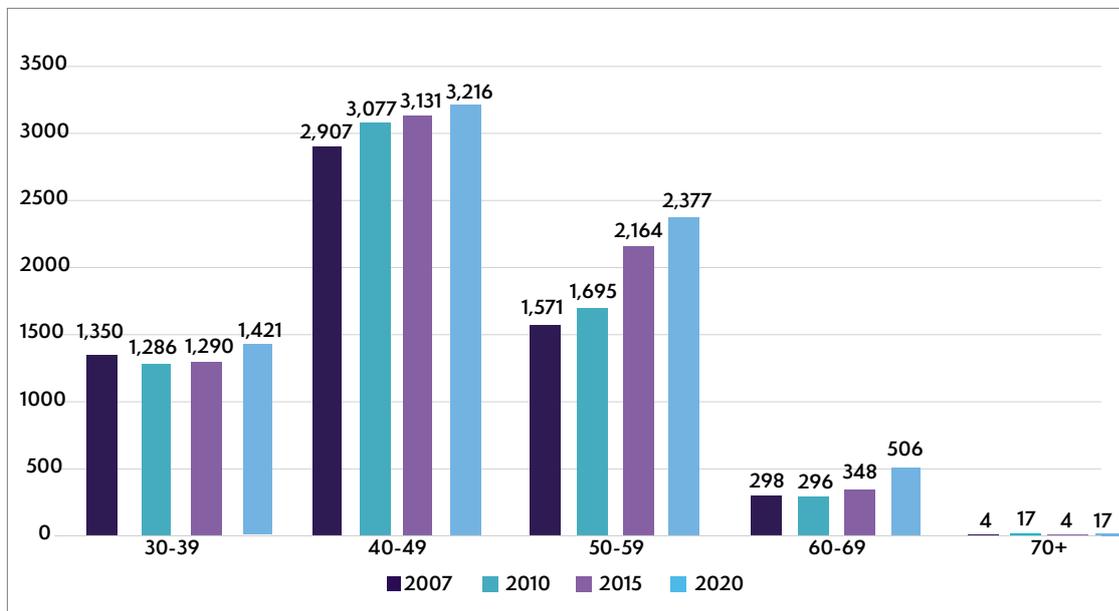
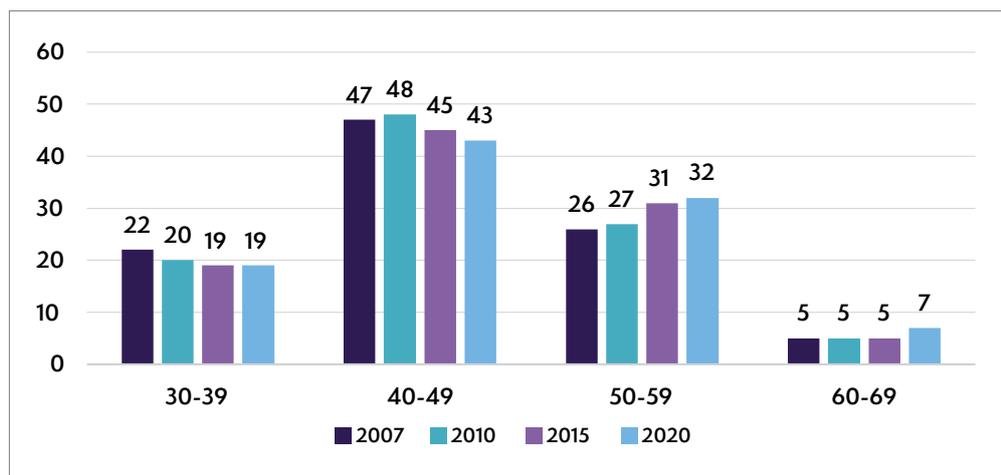


Figure 6: Age distribution (%) with each census



Number of consultants with programmed activities in specialty areas

The census asked clinical directors about numbers of colleagues with specific specialty areas in their job plans (Table 7). Similar to the 2015 census, general interests were the largest group followed by intensive care, trauma and obstetrics. Respondents also noted new specialty areas with consultants engaged in perioperative medicine and pre-hospital care.

Table 7: Number of consultants with PAs in specialty areas

Specialty	Number	%
Cardiac	423	3.0
Chronic pain	568	4.0
General	3382	23.6
Paediatrics	1224	8.5
Paediatric ICU	92	0.6
Adult ICU	1770	12.3
Neurosurgical ICU	209	1.5
Neuroanaesthesia	391	2.7
Obstetrics	1507	10.5
Perioperative medicine	338	2.4
Pre-hospital care	99	0.7
Pre-operative assessment	1386	9.7
Radiology	557	3.9
Trauma	1910	13.3
Vascular	268	1.9
Other	210	1.5
Total	14,334	100

Specialty and associate specialist doctors (SAS) and trust doctor workforce

SAS doctors make a significant contribution to the running of departments of anaesthesia and delivery of services. They are a diverse group with a variety of names in recent past, including specialty doctors, staff grades and associate specialists. They may also be known as hospital practitioners, clinical assistants, senior clinical medical officers or clinical medical officers. Their contract of employment varies, with some working on nationally-negotiated terms and conditions, whereas others are on locally agreed non-standard contracts.

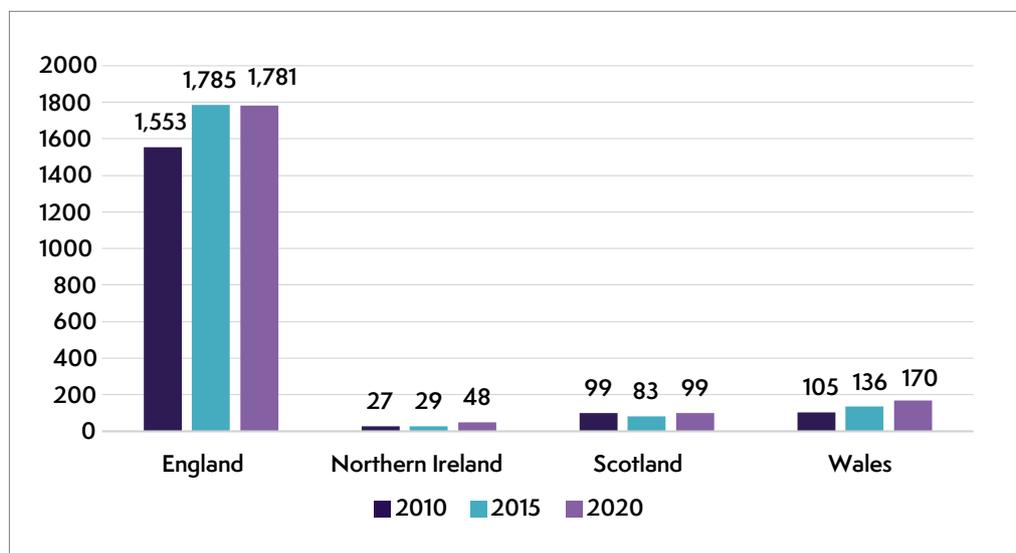
SAS doctors have a minimum of two years of training in anaesthesia, but often far more and many are senior, skilled and experienced colleagues. Their workload depends on their individual levels of competence, varying from simple cases under the direct supervision of a consultant to independent practice providing anaesthesia for complex surgical cases. Their roles are typically service based, but they also provide teaching and appraisals, act as sub-specialty leads as well as hold other departmental and trust-wide roles.

Trust doctors are usually employed on different contracts to SAS doctors. They typically work at the level of a junior trainee (foundation year 1-specialty training year 3) and participate in trainee on call rotas, but they are not regulated by the deanery. Many are from overseas and use these jobs to get a foothold in the NHS, taking up a training post later in their career. Some are between training grades for various reasons including delayed progression due to examination or portfolio requirements, failure to secure appointment to their desired training scheme, other academic, educational or research interests, or personal circumstantial factors.

Number of SAS and trust doctors

The data from the 2020 census showed that the total number of SAS and trust doctors had changed little in five years (Figure 7). In 2015, the SAS and trust doctor made up 21.6% of the anaesthesia workforce. In 2020, that figure is relatively unchanged at 21.1%, despite an increase in service demand, which is likely to continue to grow, and an increase in workforce gaps. Some 72% of SAS doctors were contracted to work more than 10 PAs, compared to 62% of consultants.

Figure 7: Number of SAS and trust doctors



Population data from the Office of National Statistics can be used to compare numbers of consultants, SAS and trust doctors with population size in each of the UK nations (Tables 8 and 9).

Table 8: Numbers of consultants, SAS and trust doctors, 2010, 2015 and 2020

	2010		2015		2020	
	Consultants	SAS and TD (%)	Consultants	SAS and TD (%)	Consultants	SAS and TD (%)
England	5,639	1,553 (22)	6,019	1,785 (23)	6,471	1,781 (22)
Northern Ireland	211	27 (11)	240	29 (11)	279	48 (15)
Scotland	643	99 (13)	758	83 (10)	776	99(13)
Wales	356	105 (23)	405	136 (25)	433	170 (28)
	6,849	1,784 (21)	7,422	2,033 (22)	7,959	2,098 (21)

Table 9: Number of SAS doctors only in departments (excluding departments without SAS doctors)

Mean number of SAS doctors in departments (range)	
England	10 (1–41)
Northern Ireland	6 (3–14)
Scotland	5 (1–11)
Wales	13 (5–23)

Gender

The gender distribution of SAS doctors has followed a similar pattern of change to that of consultants with an increase in the proportion of women compared with men (Tables 10 and 11).

Table 10: Gender distribution of SAS and trust doctors by percentage (%)

	England		Northern Ireland		Scotland		Wales	
	Male	Female	Male	Female	Male	Female	Male	Female
2010	65	35	85	15	46	54	69	31
2015	62	38	52	48	53	47	67	33
2020	59	41	52	48	55	45	65	35

Table 11: Gender distribution of SAS doctors only by PAs

	Male	Female	Totals	% of total
7 or less	31	50	81	5
8	15	44	59	4
9	10	32	42	3
10	144	119	263	17
10+	765	369	1134	72
Totals	965 (61%)	614 (39%)	1,579	

Number of SAS doctors with programmed activities in specialty areas

The census asked about specialty areas in SAS job plans (Table 12). As was noted in the 2015 census, SAS doctors have a high proportion of general duties followed by obstetrics, intensive care and trauma, presumably reflecting their acute workload.

Table 12: Number of SAS doctors with PAs in specialty areas

Specialty	Number	%
Cardiac	26	1
Chronic pain	45	2
General	1,098	40
Paediatrics	62	2
Paediatric ICU	0	0
Adult ICU	412	15
Neurosurgical ICU	26	1
Neuroanaesthesia	16	1
Obstetrics	544	20
Perioperative medicine	6	0.2
Pre-hospital care	3	0.1
Pre-operative assessment	40	1
Radiology	21	1
Trauma	368	14
Vascular	16	1
Other	50	2
Total	2,733	

Workforce gaps



Gaps due to leave

Workforce gaps may be temporary, such as when a colleague takes sick, parental or carers leave, a sabbatical or a career break, or if they're excluded. To quantify this issue, we asked clinical directors about the prevalence and reasons for consultant and SAS doctors' long-term leave (Table 13).

Table 13: Reasons for long term leave for consultants and SAS doctors

Reason for leave	Number of responses
Maternity leave	122
Paternity Leave	7
Long term sick leave	125
Sabbatical/career break	82
Other	13

The doctors in the 'other' category included those who had been seconded to non-clinical projects within the trust or were formally excluded awaiting mediation, investigation or a GMC hearing.

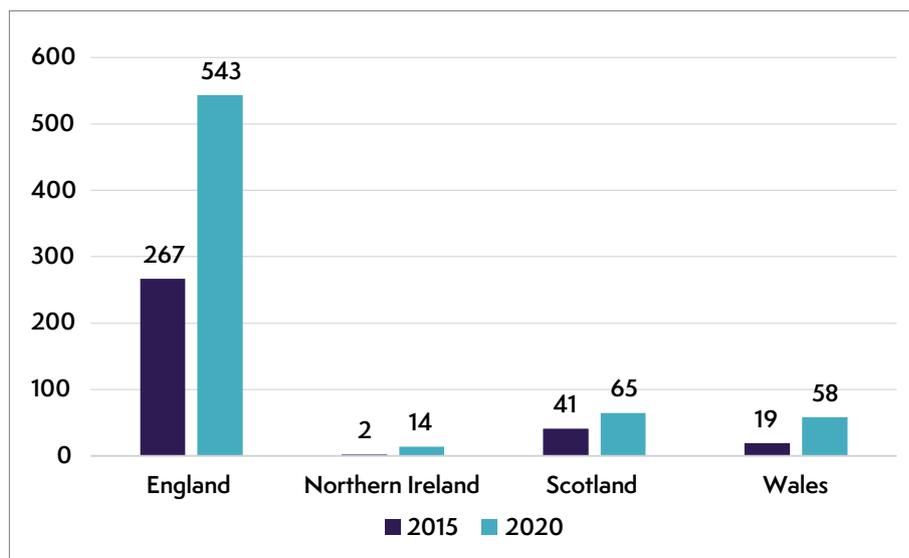
The total of 349 doctors' represents 3.7% of the combined consultant and SAS doctor workforce. These temporary gaps can have a significant impact on the department as a locum might not be available or appropriate, and there will be an expectation that their uncovered work will be done by their remaining colleagues.

Unfilled posts

Other long-term unfilled sessions and posts may have no colleague's name badged against them. These gaps may occur when a colleague reduces their clinical workload, retires, moves to another hospital, moves into a management or educational role, leaves medicine altogether or, rarely, dies in service. The census shows that 90% of departments of anaesthesia in the UK have at least one unfilled consultant, SAS doctor or anaesthesia associate post.

An understanding of the size and nature of the gap is important for workforce planning. The gap can be assessed by simply asking about the number of unfilled posts. However, in isolation, this number can be misleading. To illustrate, colleagues working in a department of 150 anaesthetists will notice relatively little impact if there are 5 unfilled posts. However, colleagues working in a department of 10 anaesthetists will be under significant pressure if 5 of them are unfilled. For this reason, the workforce gap is often quoted as a percentage of the total number of funded posts in the department. Across the UK, there were 680 funded but unfilled consultant posts (Figure 8 and Table 14).

Figure 8: Comparison of number of unfilled consultant posts in 2015 and 2020



% funded gap = number of funded unfilled posts / total number of funded posts (filled and unfilled).

Table 14: Number of funded but unfilled consultant posts

	Number of funded but unfilled posts	Number of filled posts	Funded gap (%)
North East and Yorkshire	77	1,112	6.5
North West	93	1,003	8.5
Midlands	94	1,023	8.4
East of England	57	616	8.5
South East	69	811	7.8
South West	62	688	8.3
London	91	1,218	7.0
England	543	6,741	7.7
Northern Ireland	14	279	4.8
Scotland	65	776	7.7
Wales	58	433	11.8

"This is a remote and rural hospital requiring a broad variety of skills: critical care for all ages and anaesthetic skills for all emergency surgery and a wide variety of elective surgery. It is a 1 in 4 rota. There are no applicants to vacant posts. We have 3 long term locums. As the single substantive anaesthetist I have reduced my PAs for pension reasons. The situation appears hopeless."

Clinical Director

Across the UK, there were 243 funded but unfilled SAS doctor posts (Figure 9 and Table 15).

Figure 9: Comparison of number of unfilled SAS doctor posts in 2015 and 2020

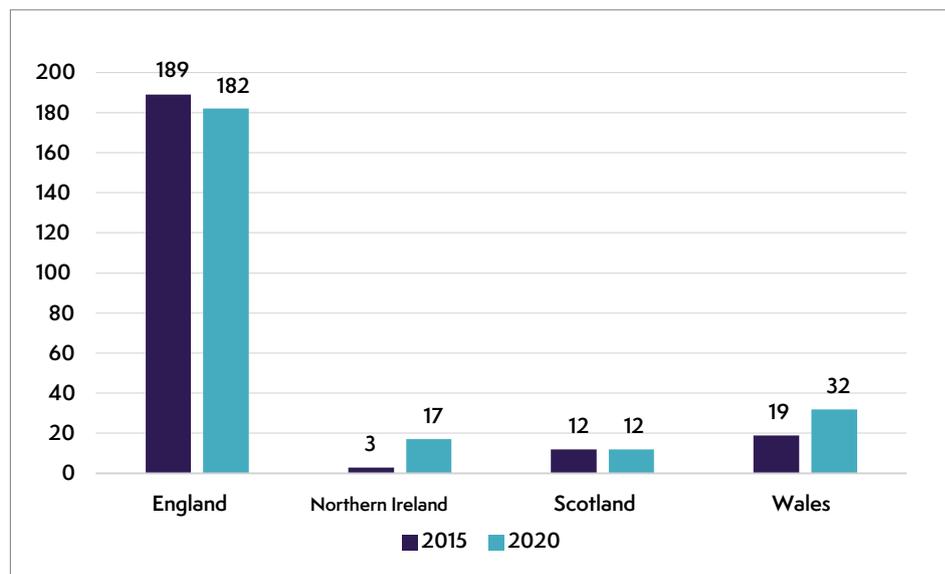


Table 15: Number of funded but unfilled SAS doctor posts

	Number of funded but unfilled posts	Number of filled posts	Funded gap (%)
North East and Yorkshire	26	184	12.4
North West	38	222	14.6
Midlands	24	242	9.0
East of England	33	140	19.1
South East	13	206	5.9
South West	21	170	11.0
London	27	149	15.3
England	182	1313	12.2
Northern Ireland	17	45	27.4
Scotland	12	88	12.0
Wales	32	133	19.4

The number of unfilled jobs varies from year to year. We asked whether clinical managers thought that the number of consultant vacancies had changed over the past year (Figure 10). The majority of clinical directors felt that the number of consultant vacancies had increased in the last year, which is supported by the increasing workforce gap since 2007 (Figure 11).

Figure 10: Has the number of consultant vacancies changed over the last year?

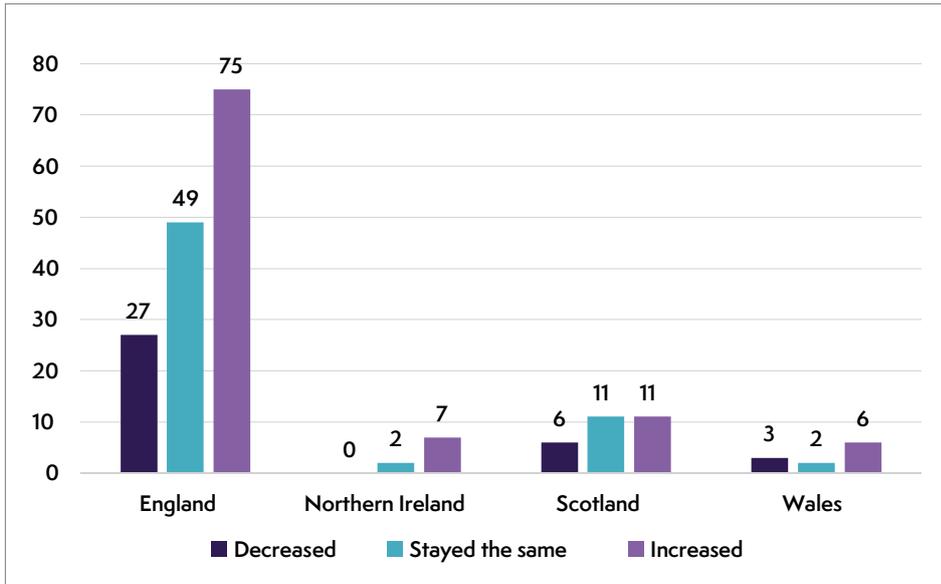
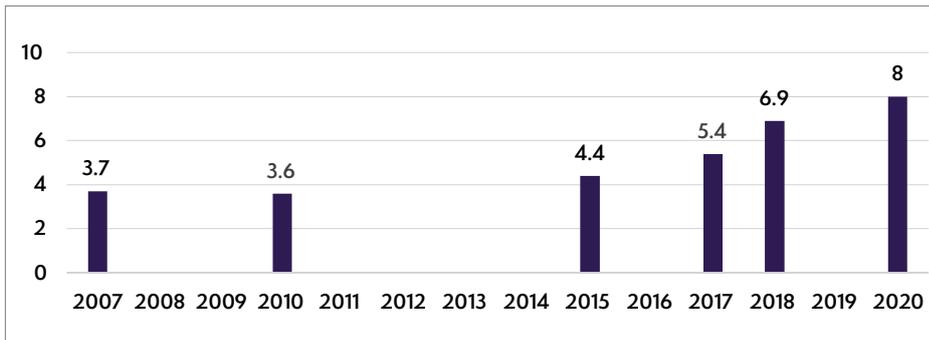


Figure 11: Trend in consultant workforce gap (%)



Data taken from RCoA surveys 2007, 2010, 2015, 2017, 2018 and 2020

"Current difficulty in convincing managers that there is a deficiency in the workforce as too good at finding cover at short notice."

Clinical Director

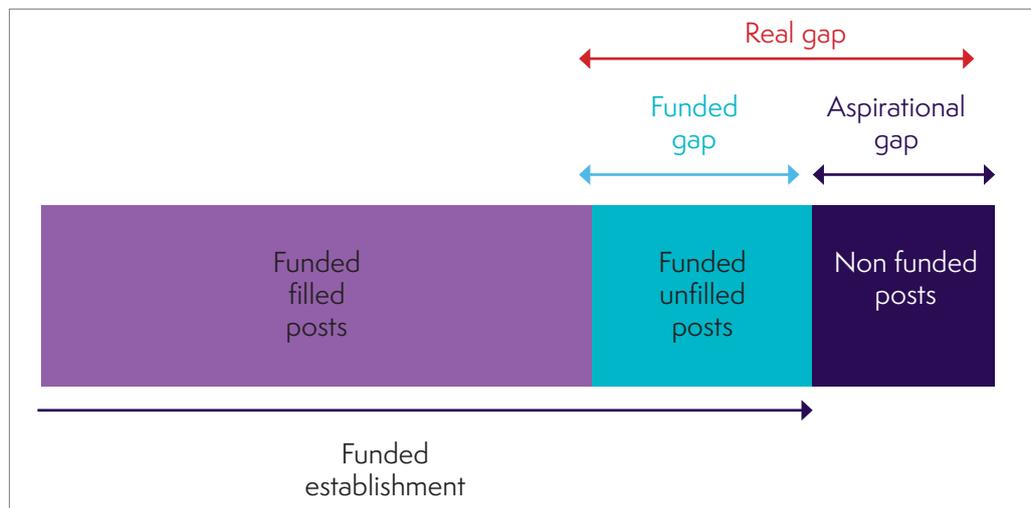
"Recruitment activity and dealing with shortfall in workforce resource has become dominant theme of my role as clinical director, at the expense of other activity."

Clinical Director

Aspirational gap

The funded gap statistic is useful, but tells only part of the story. Clinical directors often report that there is an additional demand on the department, but for which there is no identified funding (e.g. covering annual leave). Ideally, they would employ an additional member of staff, but their organisation has not agreed a new job (even though they may already be paying for enhanced rate extra contractual sessions or expensive locums to do the work). This additional gap is called the ‘aspirational’ gap (Figure 12).

Figure 12: The different types of gaps



In the census, we asked clinical directors about the aspirational gap. In response, 53% of clinical directors said their consultant workforce had an aspirational gap, requiring a further 374 additional colleagues to cover the entire service. Once the aspirational gap is taken into account, the ‘real’ workforce gap across the UK for consultants is 11.8% and for SAS doctors is 18.4% (Tables 16 and 17).

Table 16: Number of unfilled consultant posts, aspirational gap and real gap

	Number	Funded gap	Aspirational gap	Total	Funded and aspirational gap	Real gap (%)
England	6,471	543	283	7,297	826	11.3
Northern Ireland	279	14	17	310	31	10
Scotland	776	65	38	879	103	11.7
Wales	433	58	36	527	94	17.8
Totals	7,959	680	374	9,013	1,054	11.8

Table 17: Number of unfilled SAS posts, aspirational gap and real gap

	Number	Funded gap	Aspirational gap	Total	Funded and aspirational gap	Real gap (%)
England	1,313	182	67	1,562	249	15.9
Northern Ireland	45	17	16	78	33	42.3
Scotland	88	12	8	108	20	18.5
Wales	133	32	22	187	54	28.9
Totals	1,579	243	113	1,935	356	18.4

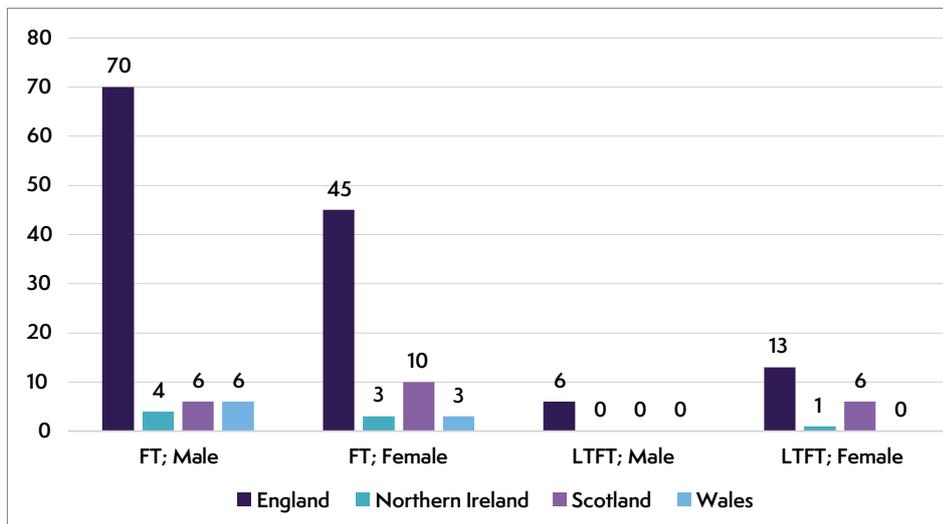
Anaesthesia associate workforce

The 2015 census was the first to consider non-medically qualified anaesthesia practitioners. The role was introduced in the UK in 2004 and they were known as Physicians Assistants in Anaesthesia PA(A)s. The 2015 census reported that there were 323 PA(A)s across the UK. However, data from the Association of Physicians’ Assistants in Anaesthesia and the University of Birmingham, showed that there were 165 trained PA(A)s. The overestimate was probably a result of a lack of familiarity with the role and title, and clinical directors may have included advanced critical care practitioners and nurse practitioners.

In 2019, PA(A)s formally changed their title to anaesthesia associates (AAs), recognising their role within the anaesthesia team and also within medical associate professions. In the same year, statutory regulation for AAs was approved and will be the responsibility of the GMC to regulate from 2021.

The 2020 census showed that there were 173 anaesthesia associates in the UK (Figure 13). This is fewer than the 205 who have qualified through the University of Birmingham.¹³

Figure 13: Total number of Full Time (FT) and Less Than Full Time (LTFT) AA’s across the four nations



Anaesthetists in training and non-consultant, non-training roles

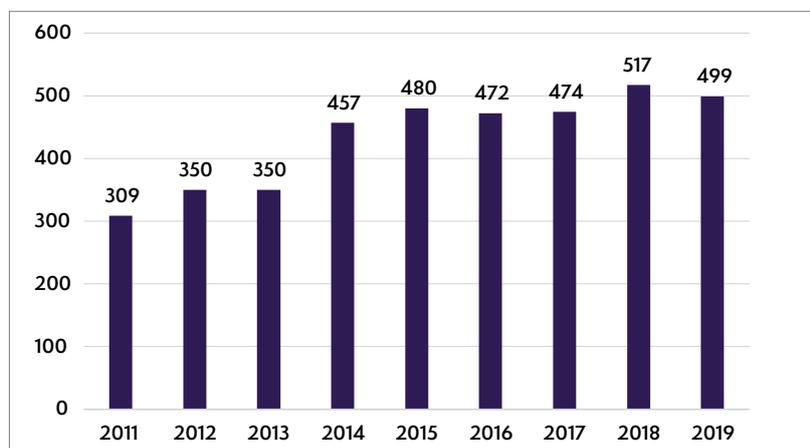
None of the previous census reports have captured detailed data on training grade doctors. These are a heterogeneous group including specialty trainee (ST), Acute Care Common Stem (ACCS) and Core Trainees (CT) doctors who are on a defined training programme with recognised educational content and assessments in a prescribed timeframe. There are also non-consultant and non training grades, which includes Medical Training Initiative (MTI) doctors, locums and clinical fellows whose roles have varying supervision, educational exposure and often open-ended contracts. The contribution that this latter group of doctors will make in the future is variable. Some may go onto become consultants or SAS doctors, whereas others may leave the UK and return home overseas. To understand the numbers who were likely to contribute to the permanent UK anaesthesia workforce, we asked clinical directors and College tutors about numbers of each role.

The majority (79%) of training grade doctors were in nationally recognised training posts (ACCS, CT, ST, locum appointment training [LAT]). However, a significant proportion (21%) were in non-consultant, non-training roles (Locum Appointment for Service [LAS], MTI, trust doctor, clinical/research fellow, post CCT fellow) where there is less oversight in terms of supervision and educational content.

In 2015, there were 172 post-CCT fellows whereas the 2020 census recorded 81 post-CCT fellows. This may suggest a lower requirement for additional experience to secure a consultant post because of the availability of unfilled consultant posts.

Obtaining accurate trainee data is difficult. The RCoA Training Department records in June 2020 showed that there were 4,804 anaesthetists in training (CT1-3, ACCS anaesthesia and ST 3-7), whereas data from the GMC trainee survey shows that number to be 4,462.¹⁴ Using broadly comparable grades, the census data show's 4,311 trainees. Some of this discrepancy may be because the College relies on the information given to them by trainees and if a trainee steps out of programme but does not tell the College, then there is no way to check. Similarly, the GMC survey has inaccuracies, as it relies on trainees to select the appropriate box when declaring their grade. If they inadvertently make a mistake, then the data will be wrong. The census figure is possibly an underestimate as we did not have data from every department in the UK. Despite these differences, the number of trainees who are likely to progress to consultant or SAS doctor roles is between 4,200 and 4,500. Numbers of ST3 appointed posts have changed relatively little over the years (Figure 14).

Figure 14: Annual ST3 recruitment numbers (Data from the Anaesthetics National Recruitment Office)



Note: There may be missing data for years 2011–2013 which can explain the lower numbers in those years.

Numbers of anaesthetists in training and non-consultant, non-training roles

Of those employed in training posts across the whole of the UK (Table 18), 14% currently work less than full time, with a higher proportion during the ST3-7 posts as compared with the other junior roles (Table 19).

Table 18: Numbers of anaesthetists in training and non-consultant, non-training roles by country

	England	Northern Ireland	Scotland	Wales
ACCS (anaesthesia only)	328	3	26	18
ACCS (non-anaesthesia)	272	12	27	12
CT1-3	737	39	99	97
ST3-7	2,064	97	257	144
LATs	9	0	12	1
MTI	130	0	4	12
Trust Doctor	468	3	11	37
Clinical/Research Fellow	274	8	14	25
Post CCT Fellow	76	0	5	0
Fixed Term LAS	32	3	2	2
Totals	4,390	165	457	348

Note: Although College tutors reported in the census, 9 LATs in England and 1 LAT in Wales. The grade is only recruited in Scotland.

Gender of anaesthetists in training and non-consultant, non-training roles

Overall, these grades of doctors are 47% female compared with 38% of female consultants, reflecting wider change in the medical community. Within the less than full time cohort, there is a greater proportion of females, presumably due to maternity leave and the continued tendency for more women to work less than full time to provide childcare. 27% of all female trainees and 7% of all male trainees are working on a less than full-time basis. This may have a significant impact on workforce planning and resident rota design.

Table 19: Gender and employment contract of anaesthetists in training and non-consultant, non-training roles

	Full time		Less than full time	
	Male	Female	Male	Female
ACCS (anaesthesia only)	220	126	9	20
ACCS (non-anaesthesia)	175	134	3	11
CT1-3	486	419	18	49
ST3-7	1,178	871	120	393
LATs	12	9	1	0
MTI	79	66	1	0
Trust Doctor	258	195	20	46
Clinical/Research Fellow	184	109	13	15
Post CCT Fellow	36	39	1	5
Fixed Term LAS	17	19	1	2
Totals	2,645	1,987	187	541

Relationship between trainee numbers and local workforce gap

Trainees often take up permanent posts in the region where they have trained. If this were the only factor guiding where they took up consultant posts, then areas that had a high trainee to consultant ratio should have fewer problems filling consultant vacancies and a smaller consultant gap (Table 20). However, the census found no relationship between trainee numbers and consultant gap. Indeed, Wales has the highest ratio of trainees to consultants, but also has the highest levels of consultant vacancies. This may reflect a longstanding workforce gap, but the census did not explore this further (Table 21).

Table 20: Anaesthetists in training by English region (includes ACCS anaesthesia, CT1-3, ST3-7, LATs Clinical/Research Fellow and post CCT Fellow)

	Consultants	Total training grades	Trainee/consultant ratio	Consultant gap %
NE and Y	1,112	596	0.54	6.5
NW	1,003	499	0.50	8.5
Midlands	1,023	512	0.50	8.4
East of England	616	253	0.41	8.5
SE	811	452	0.56	7.8
SW	688	491	0.71	8.3
London	1,218	693	0.57	7

Table 21: Ratio of consultants to trainees by country (includes ACCS anaesthesia, CT1-3, ST3-7, LATs Clinical/Research Fellow and post CCT Fellow)

	Consultants	Total training grades	Trainee/consultant ratio	Consultant gap %
England	6,471	3,488	0.54	7.7
Northern Ireland	279	147	0.53	4.8
Scotland	776	413	0.53	7.7
Wales	433	285	0.66	11.8

Anaesthetists in training gaps

The 2020 census reported 284 empty training posts compared with 424 in the 2015 census. Across the UK, 6% of training posts are unfilled, varying from 2% in Northern Ireland to 7% in England. Within England, the regions reporting the most unoccupied trainee posts are East of England (12%), Midlands (8%) and London (8%).

Despite the improvement in trainee gaps since 2015, 39% of respondents across the UK report an increase in trainee/SAS rota gaps over the last 12 months. Only 16% of respondents report a reduction in trainee/SAS rota gaps, while 41% report an unchanged frequency; 52% of hospitals in England reported an unchanged frequency of rota gaps but they also had both the largest increase in frequency (43%) and largest decrease in frequency (20%). In 2020, the number of posts that are unfilled because the incumbent was on parental leave, sick leave or an out of Programme is similar to the number in 2015 (12% vs 15%).

Additional trainee capacity

Trusts were asked if they had additional capacity and funding to accommodate more trainees. Respondents reported that they could accommodate additional trainees at the level of 20% for CT1, 31% for CT2, 48% for ST3/4, 45% for ST5/6, 43% for ST7 and in 43% of departments for intensive care medicine trainees. Respondents from institutions in England and Wales were more likely to have additional capacity for trainees than their counterparts in Scotland and Northern Ireland, and particularly for those at more senior levels for ST3 and above, as well as for intensive care medicine trainees. This suggests that there is capacity within the system to accommodate individuals with a more advanced skillset, possibly as a result of the failure to significantly expand SAS grade posts in line with rising demand.

On call gaps in trainee/SAS rotas

Compared with the 2015 census there is a small reduction in the number of occasions in which there is a gap on a trainee/SAS on call rota, suggesting that trainee numbers may be improving (Figures 15, 16 and 17).

"All trainees are either directly supervised or have a named supervisor on the rota. SAS doctors work under the provision that there is always a consultant available/on-call"

Clinical Director

Figure 15: How often does your department cover gaps in the trainee/SAS overnight and weekend rotas?

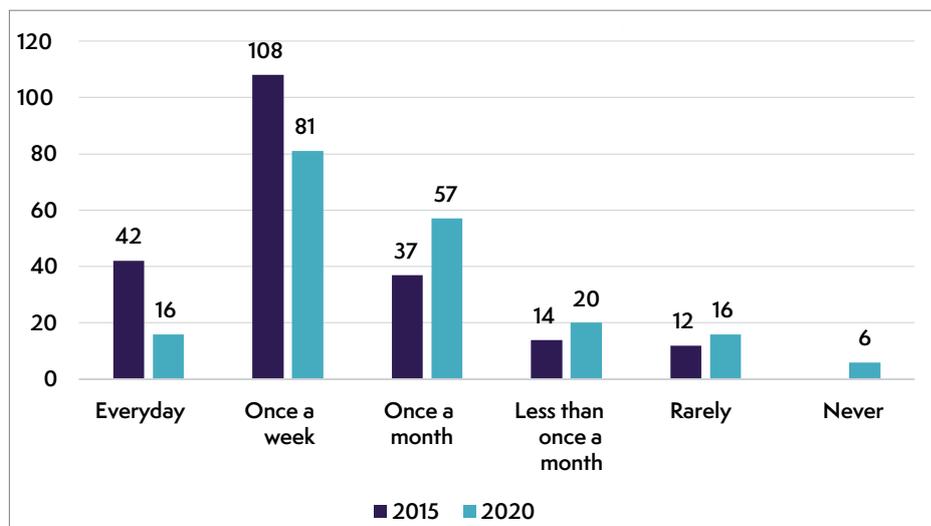


Figure 16: Gaps covered in the trainee/SAS overnight and weekend rotas by devolved nation

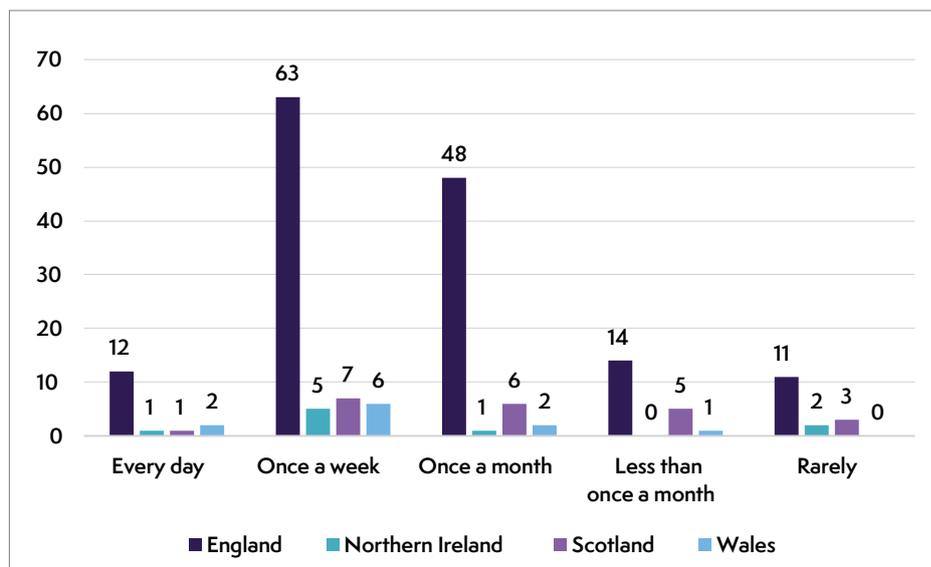
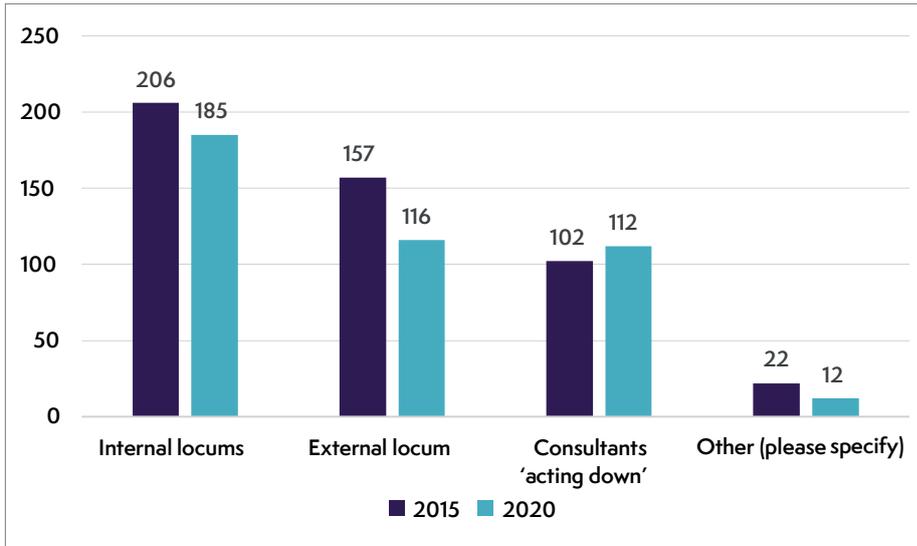


Figure 17: How does your department cover gaps in the trainee/SAS overnight and weekend rotas?



The 'Other' group included Anaesthesia associates and a mixture of all options.

The impression that there are fewer gaps in trainee/SAS rotas may be a consequence of increased numbers on trainees in the system, or increased numbers of locally employed doctors (Figure 18 and Table 22). In 2015 it was reported that 70% of departments cover SAS/trainee gaps more frequently than once a week, with 19% having to cover a gap every day. Also in 2015 the proportions having to fill gaps more frequently than once a week was 35% in Scotland, 89% in England, 92% in Wales, and 100% in Northern Ireland.

Figure 18: Trends in trainee/SAS rota gaps in the past 12 months

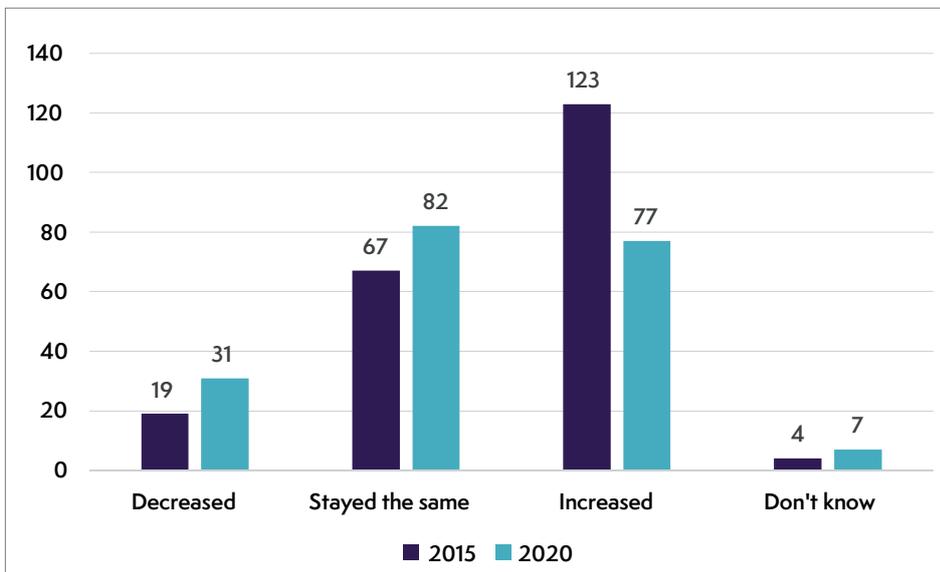


Table 22: Trends in trainee/SAS rota gaps in the past 12 months (%)

	2015 (%)	2020 (%)
Decreased	19 (9)	31 (16)
Stayed the same	67 (31)	82 (42)
Increased	123 (58)	77 (40)
Don't know	4 (2)	7 (2)

Table 23: How often is a first on call trainee/SAS doctor covering two rotas?

Time period	Number of Responses
Everyday	7
Once a week	9
Once a month	3
Less than once a month	3
Rarely	28
Never	145

In 2020, it was reported that the proportion of respondents having to cover SAS/trainee gaps more frequently than once a week has reduced from 70% in 2015 to below 50% in 2020, with only 8% of respondents having to fill SAS/trainee gaps everyday – down from 19% in 2015. Further in 2020, 7% of respondents report having to leave gaps in the trainee/SAS rotas without cover once a month or more, with 2% reporting that this happens a few nights a week, and 3% reporting that this happens once a week (Table 24). The majority of those leaving uncovered gaps are in England, with 88% of respondents in Scotland never leaving rotas without cover, 78% in Northern Ireland, and 64% in each of England and Wales, bringing the UK average to 68% of respondents never leaving rota gaps uncovered.

Table 24: How often are overnight gaps in the trainee/SAS rotas left without cover?

Time period	Number of Responses
Once a week	6
Few nights a week	3
Once a month	4
Less than once a month	8
Rarely	41
Never	132

Locums



The 2020 census shows that there are 380 consultant locums, 146 trainee locums and 100 SAS doctor locums (Figure 19). In comparison, in 2015 there were 310 consultant locums, 145 trainee locums and 84 'other' locums, showing our dependence on locums has increased by 16% in the past five years (Table 25).

Figure 19: Distribution of locums across the UK

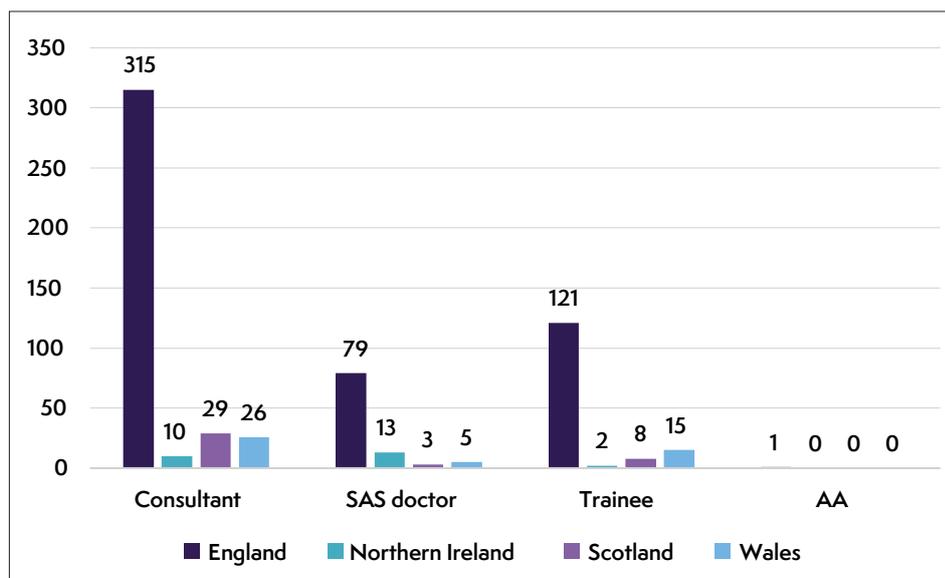


Table 25: Number of locums as a proportion of the consultant workforce, by country

	Consultant number	Locum number	Locum %	Funded gap (%)
England	6,471	315	4.9	7.7
Northern Ireland	279	10	3.6	4.8
Scotland	776	29	3.6	7.7
Wales	433	26	6.0	11.8
Total	7,959	380	4.8	

As a group, locums are variable in terms of experience, skill set and personal circumstances. This variability prevents us from predicting how much of a contribution they will make to future workforce capacity. However, it is likely that some will take up currently unfilled consultant and SAS doctor posts.

With respect to the UK nations, the use of locums is broadly proportional to the magnitude of the workforce gap, although this relationship is less obvious in the Health Education England regions and in Scotland (Tables 26 and 27).

Table 26: Regional variation in number of locums as a proportion of the consultant workforce

	Consultant number	Locum number	Locum %	Funded cons gap (%)
North East and York's	1,112	43	4	7
North West	1,003	39	4	9
Midlands	1,023	50	5	8
East of England	616	45	7	9
South East	811	48	6	8
South West	688	24	4	8
London	1,218	66	5	7

Table 27: Number of locums as a proportion of the SAS doctor workforce

	SAS doctor number	Locum number	Locum %
England	1,313	79	6
Northern Ireland	45	13	29
Scotland	88	3	3
Wales	133	5	4
Total	1,579	100	6

Job plan content

Starting number of supporting professional activity programmed activities

When introduced in 2003, the consultant contract stated that the typical consultant 10 PA job plan would include 7.5 PAs for direct clinical care and 2.5 PAs for supporting professional activities.¹⁵ Since then, pressure to contain costs and maximise use of the medical workforce has led to a reduction in the number of SPAs for new consultants with the presumption that these consultants will have fewer non-clinical duties at the start of their career. The census showed that only 10% of hospitals offered 2.5 or more SPAs to new consultants, and 64% offered 1.5 or less (Table 28). A starting job plan with 9 DCC PA and 1 SPA is relatively common in Scotland, whereas in Wales new consultants are offered more than 2.5 SPAs. It has been suggested that offering more SPAs to new consultants may encourage mobile candidates to apply to those hospitals. However, it is interesting to note that nearly all of the hospitals offering more than 2.5 SPAs were in Wales which has the highest workforce gap (11.8%) in the UK. Of course, that gap might worsen if they attempted to maximise the clinical workload of consultants by adopting the '9 plus 1' policy seen more often in Scotland.

Table 28: Starting SPAs offered to new consultants

	1 SPA	1.5 SPA	2 SPA	2.5 SPA	>2.5 SPA
England	4	104	33	11	1
Northern Ireland	0	6	2	1	0
Scotland	10	3	13	0	0
Wales	0	0	4	0	7

Three session days

Several difficult organisational topics were discussed by the national clinical director executive in the period preceding the census. This included how departments covered three session days, defined as starting at 8am and routinely finishing after 8pm. The census showed that 735 consultants (9% of all consultants) had three-session days in their job plan. In 102 hospitals, three session days were routinely covered by a single anaesthetist, whereas in 23 hospitals, more than one anaesthetist was timetabled to provide cover and in 6 hospitals the later part of the day was covered by the on call anaesthetic consultant.

Flexible sessions

A total of 4,244 (54%) consultants have flexible sessions in their job plan.

Evening sessions

Figure 20: Does your trust/board have weekday evening theatre sessions covered by consultant anaesthetists for emergency work (eg acutes or trauma)?

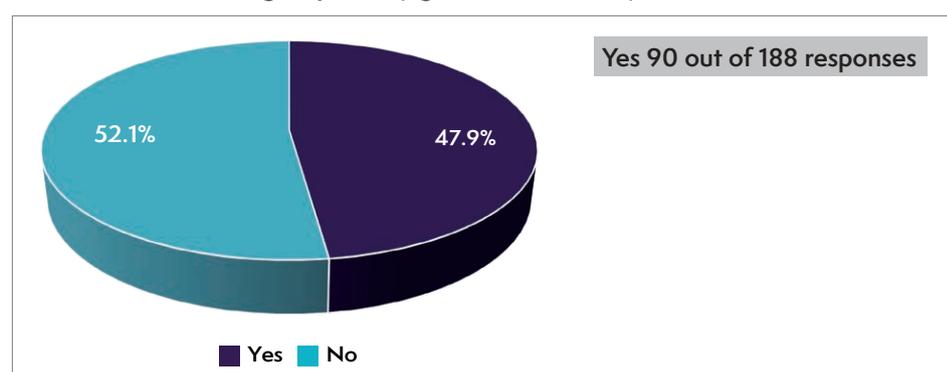


Figure 21: Does your trust/board have regular weekday evening sessions covered by consultant anaesthetists for elective work?

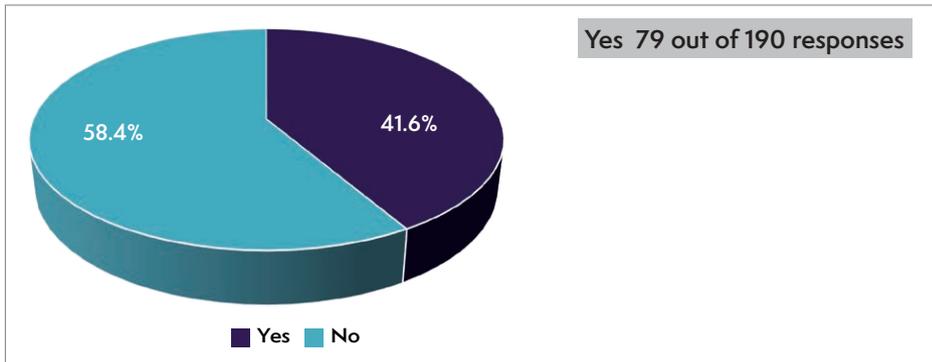


Figure 22: Number of weekday evening sessions for emergency work per week

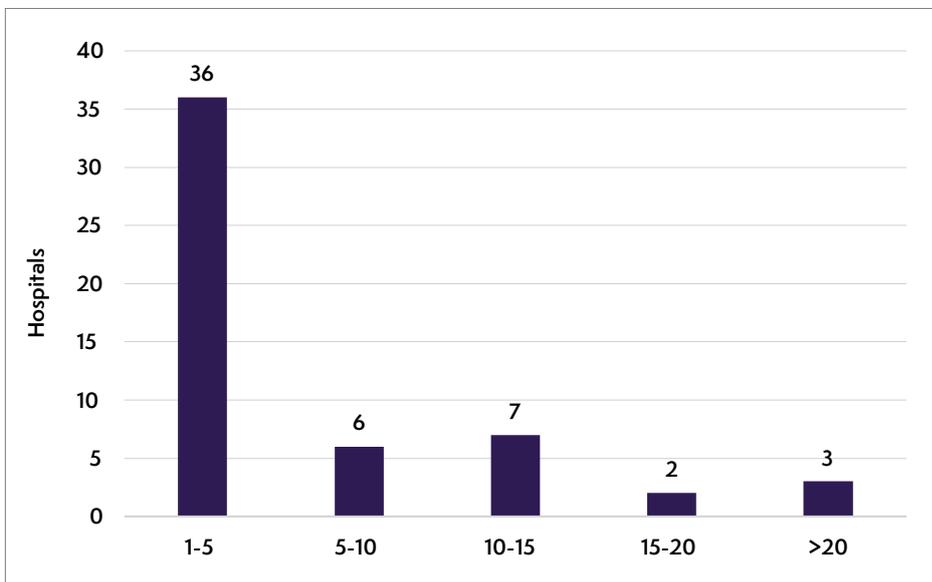


Figure 23: Number of weekday evening sessions for elective work per week

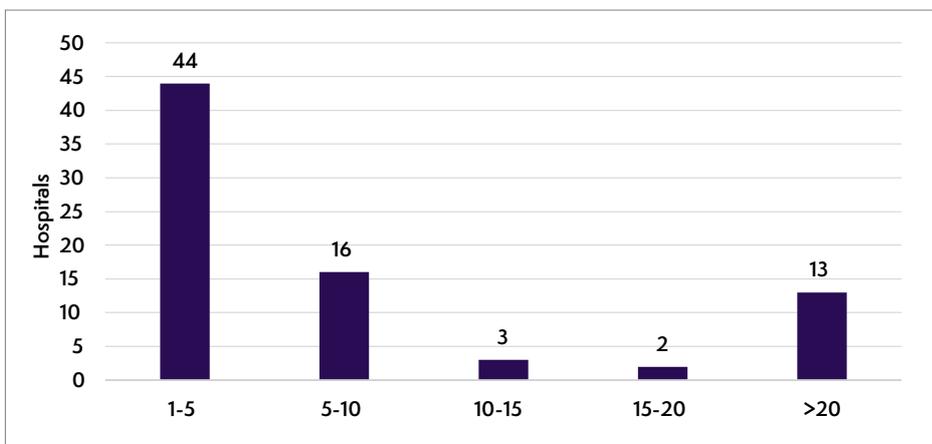


Figure 24: Are these over and above contracted hours?

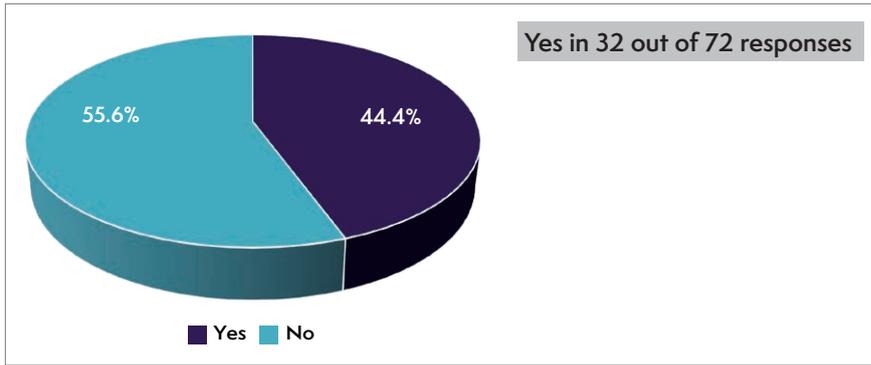
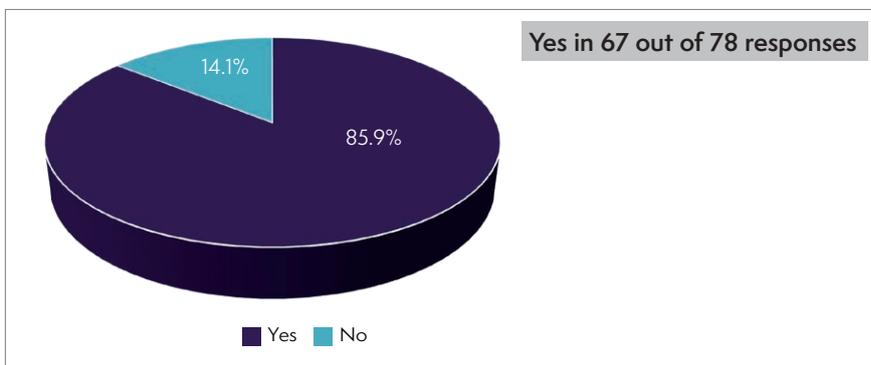


Figure 25: Are these within contracted hours?



Weekend sessions

Job planned weekend sessions are an increasingly common as hospitals struggle to fit all their elective demand into weekday sessions (Table 29). In addition, there is increasing pressure for acute sessions to be covered by senior doctors (Figures 26 and 27). As a result, scheduled weekend working is a regular part of anaesthetists working lives, often right up to retirement.

Table 29: Departments with consultants with scheduled weekend sessions in their job plan (not on-call sessions)

What % of doctors in the department have weekend working in their job plan	Consultants (%)	SAS doctors (%)
0-10%	0	0
10-20%	42 (24)	16 (10)
20-30%	22 (13)	8 (5)
>30%	64 (37)	57 (34)
N/A	45 (26)	86 (51)

Figure 26: Consultants with weekend working in their job plan

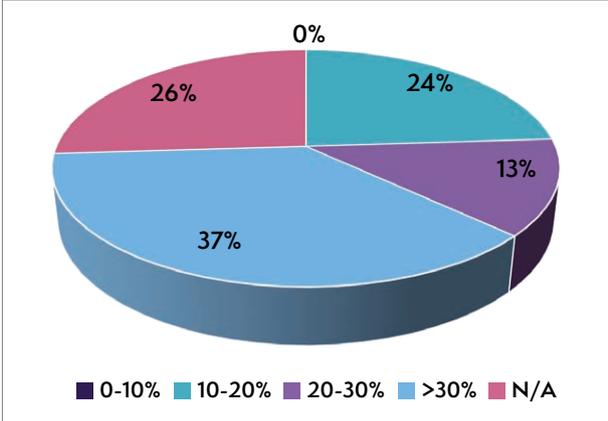


Figure 27: SAS doctors with weekend working in their job plan

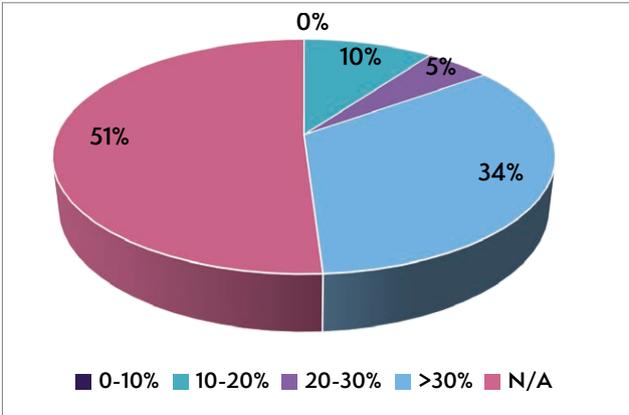


Figure 28: Does your trust/board have weekend theatre sessions covered by consultant anaesthetists for emergency work (e.g. acutes or trauma)

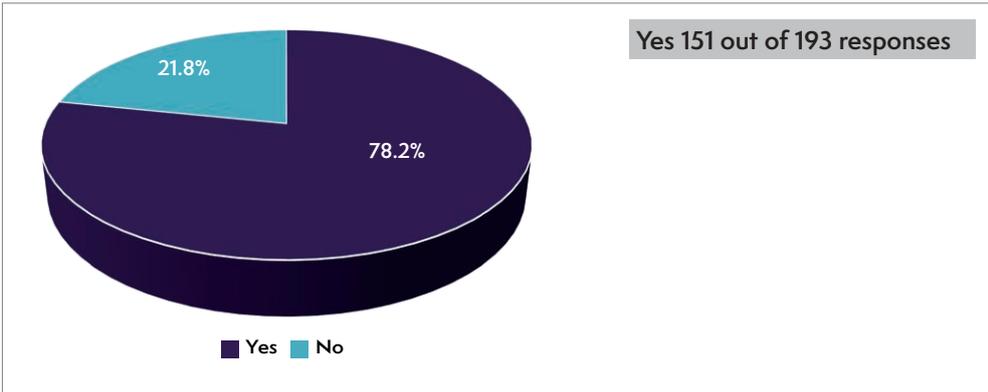


Figure 29: Does your trust/board have regular weekend theatre sessions covered by consultant anaesthetists for elective work?

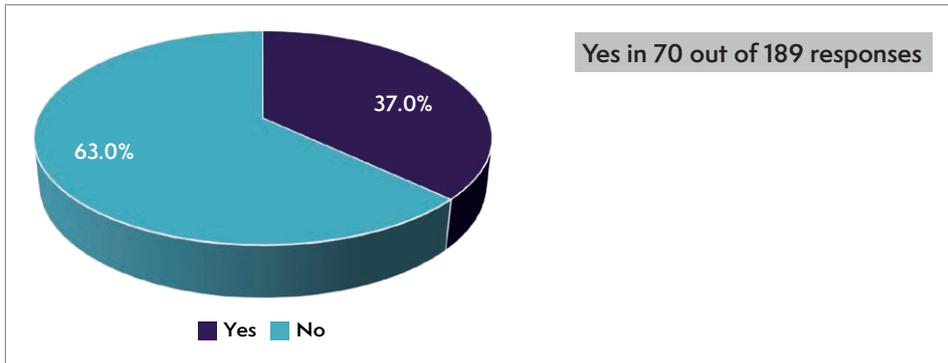


Figure 30: Number of weekend sessions for emergency work per week

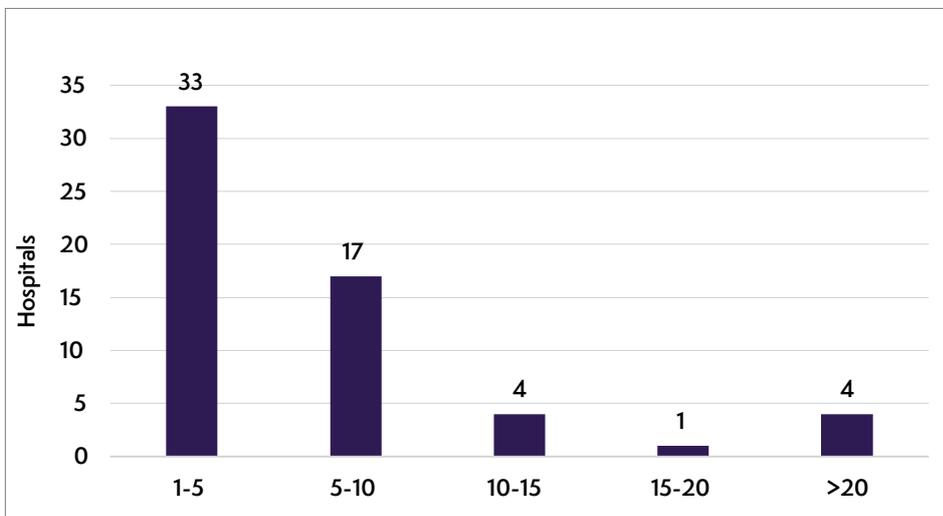


Figure 31: Number of weekend sessions for elective work per week

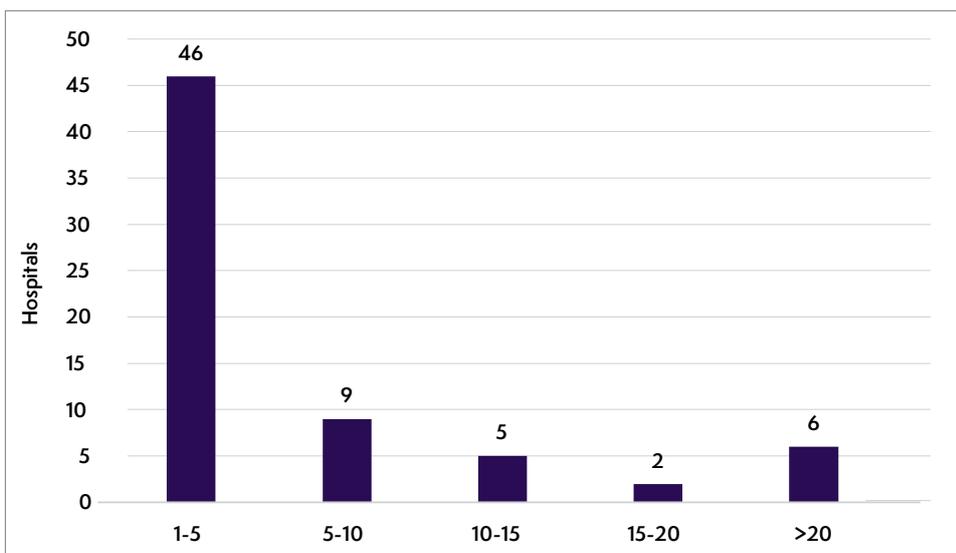


Figure 32: Are these over and above contracted hours?

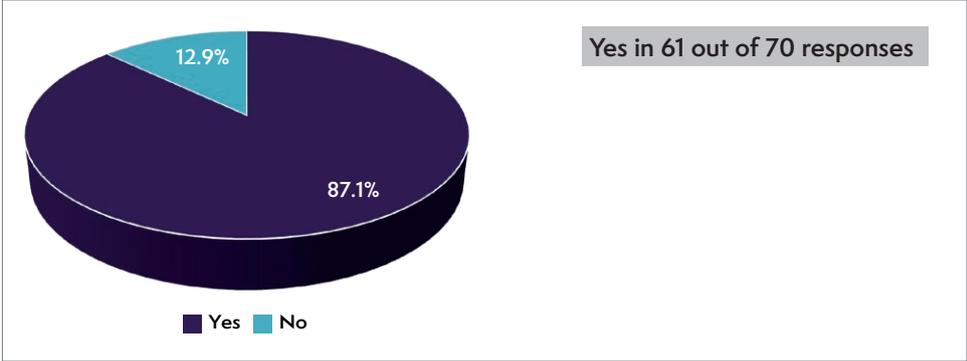


Figure 33: Are these within contracted hours?

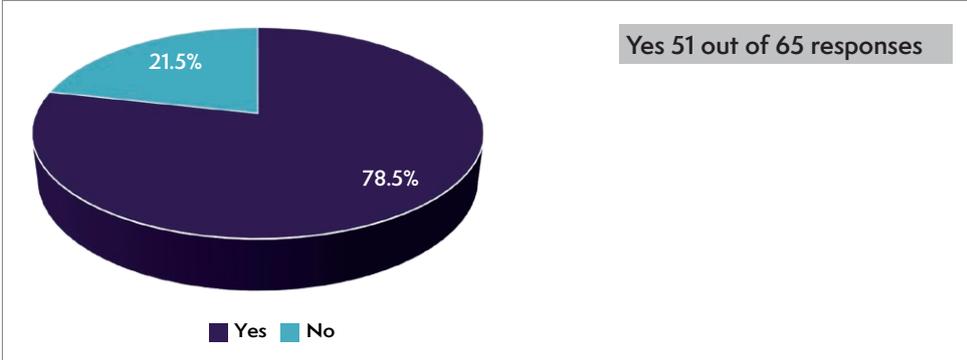


Figure 34: Does your trust/board have weekday evening theatre sessions covered by SAS doctors for emergency work (eg acutes or trauma)?

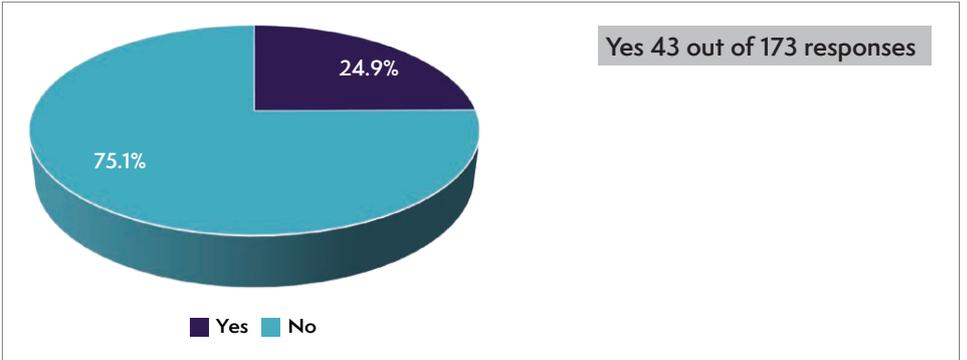


Figure 35: Does your trust/board have regular weekday evening theatre sessions covered by SAS doctors for elective work?

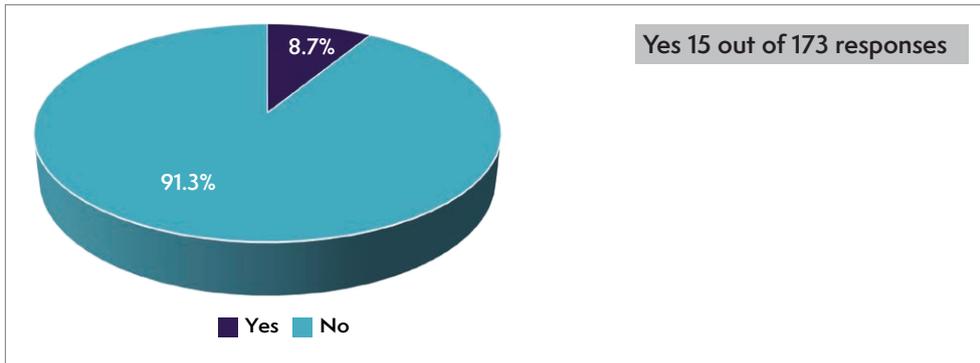


Figure 36: Does your trust/board have weekend theatre sessions covered by SAS doctors for emergency work (eg acutes or trauma)?

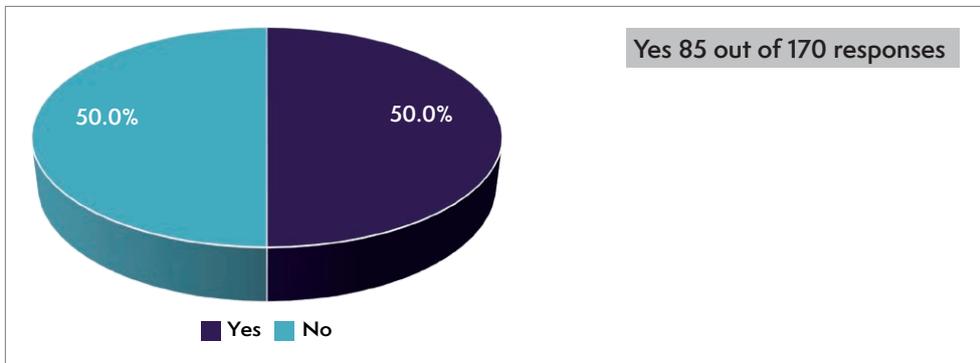


Figure 37: Does your trust/board have regular weekend theatre sessions covered by SAS doctors for elective work?

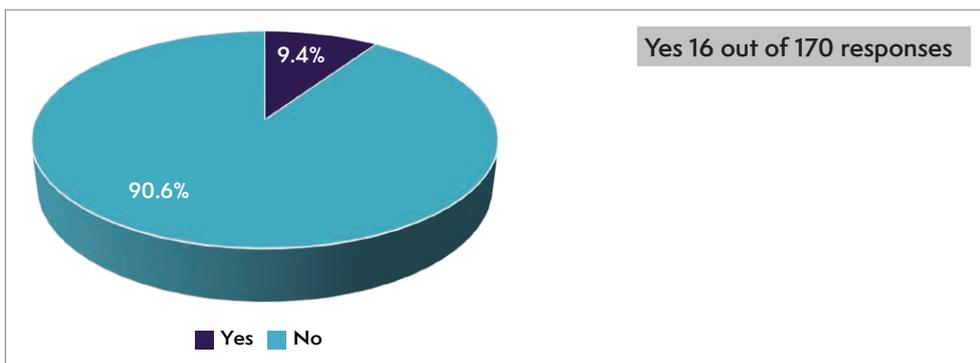


Figure 38: Does your trust/board offer regular weekday additional clinical activity (other similar) sessions?

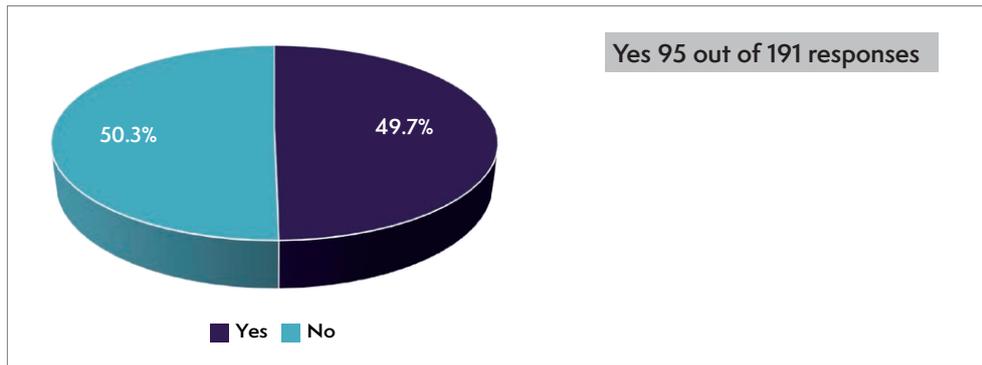
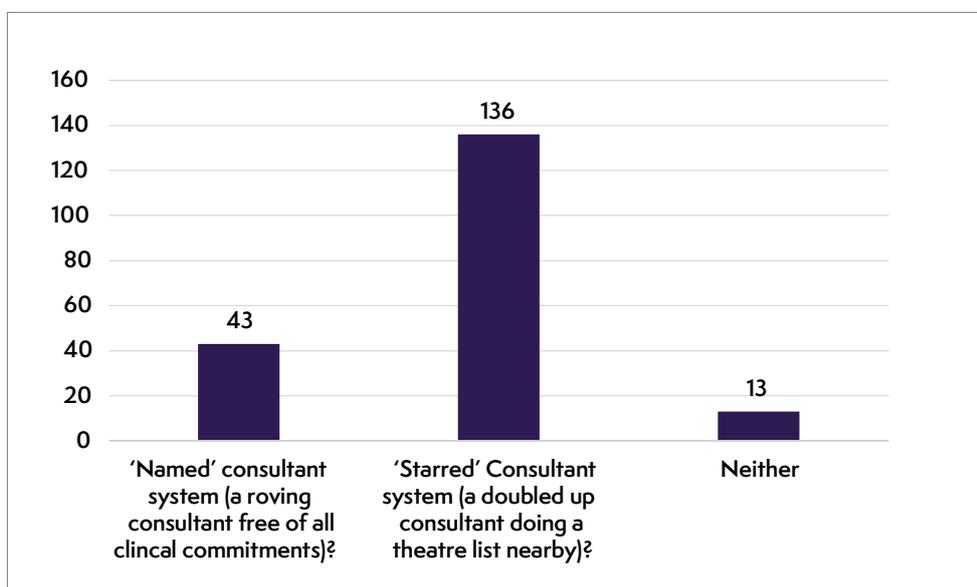


Figure 39: During normal working hours (08.00–18.00) and to cover trainees and SAS doctors working solo, does your department have a named consultant, a ‘starred’ consultant system or neither system?



“If a trainee is on a solo list they will have an allocated mentor – a consultant doubled up with a post-IAC trainee in a nearby theatre. There is also an on call consultant with a trainee in the emergency theatre.”

Clinical Director

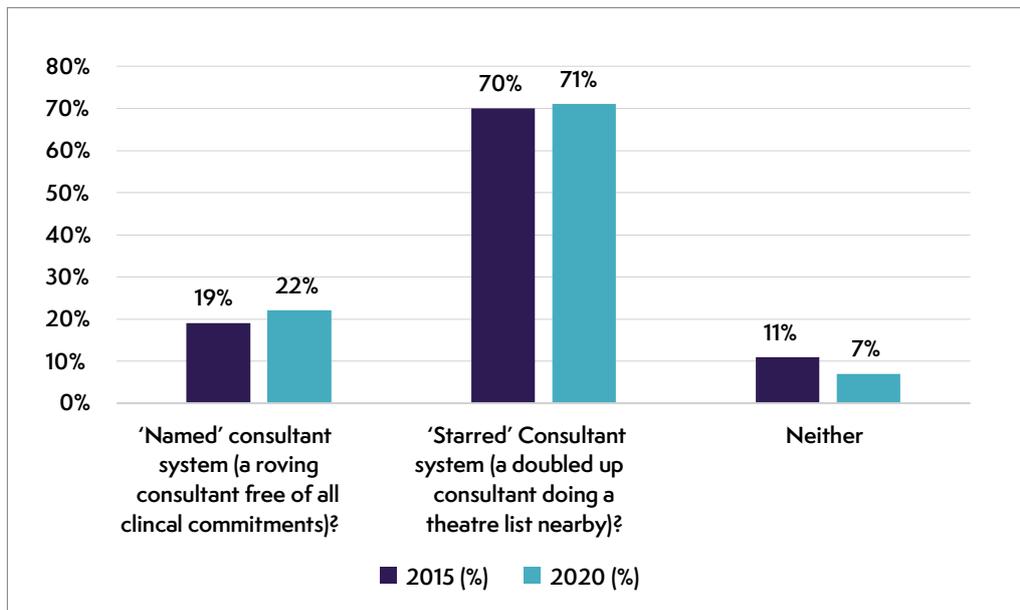
“The starred consultant is for trainees only. We do not have a complete system for SAS doctors.”

Clinical Director

“In theory this is what happens but we are so short that the mentoring system never really works and we have consultants solo mentoring trainees or doing a heavy list with a novice. We have just done a Cappucini survey and we woefully down on many of the outcomes.”

Clinical Director

Figure 40: 2015 and 2020 (%) comparison: During normal working hours (08.00-18.00) and to cover trainees and SAS doctors working solo, does your department have a named consultant system, a 'starred' consultants system or neither system?



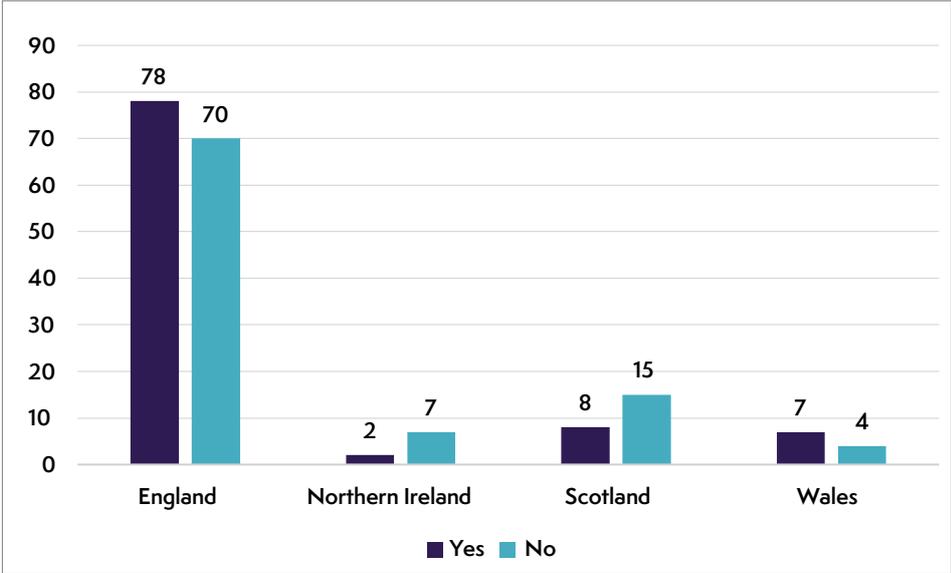
"We need a roving on call consultant but do not have enough consultants."

Clinical Director

Additional clinical work

In order to treat patients in a timely way, hospitals may schedule additional sessions outside of their normal timetable. We asked clinical directors whether additional weekday clinical activity were offered (Figure 41). The responses showed that additional clinical activity was very common in Wales and relatively common in England, but proportionately less so in Scotland and uncommon in Northern Ireland. The census did not explore why there was such a regional variation.

Figure 41: Does your trust/board offer regular weekday additional clinical activity (other similar) sessions?



A comparison with the 2015 census showed that fewer hospitals were offering additional clinical activity sessions (figures 42 and 43). The reasons for this are unclear. The number of additional sessions that are offered will depend on a variety of factors including the size of the hospital, the number of patients waiting for surgery, the availability of a theatre, anaesthetists, theatre staff and surgeons, the financial state of the hospital and the cost of additional sessions. It's clear that there has been a change since 2015 but the census did not explore what had caused the difference.

Figure 42: Number of hospitals offering additional clinical sessions

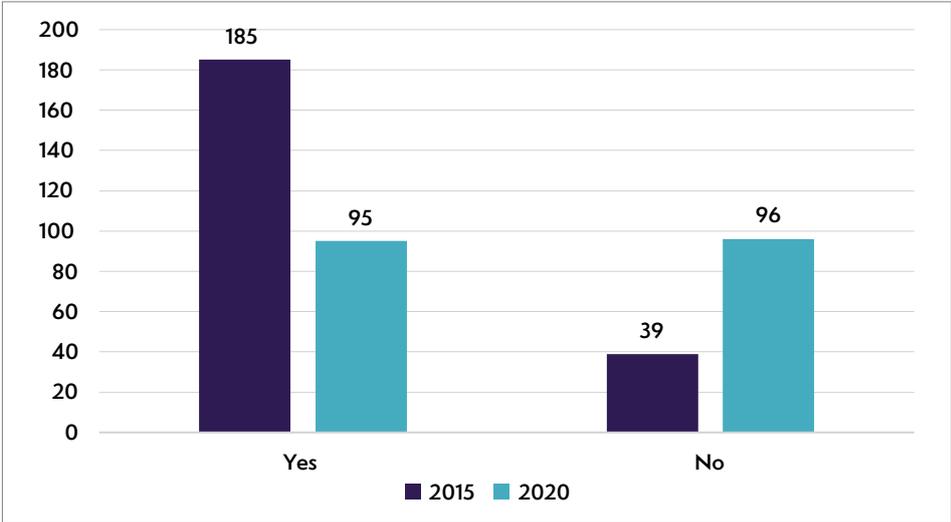
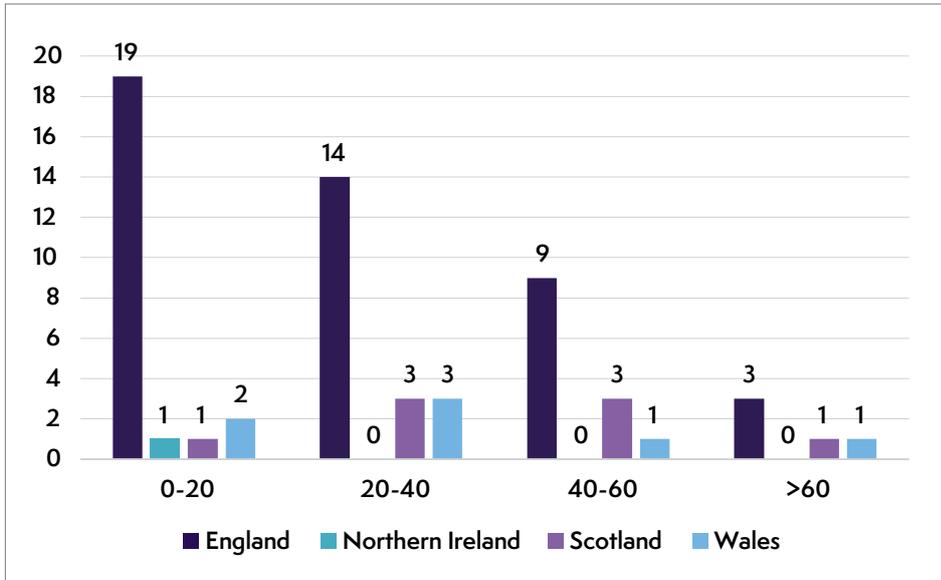


Figure 43: How many additional weekday sessions have been done in the last three months?



The breakdown of grade of anaesthetists providing additional clinical activity showed that in England there is a reliance on non-consultant staff (Figure 44). This is a significant change from the 2015 census where the vast majority of additional lists were provided by consultants (Figure 45). It is likely that this altered behaviour is a consequence of the pension tax changes, where additional income resulted in some consultants receiving disproportionately high tax bills which dis-incentivised them from providing additional work.

Figure 44: Who were these additional sessions provided by?

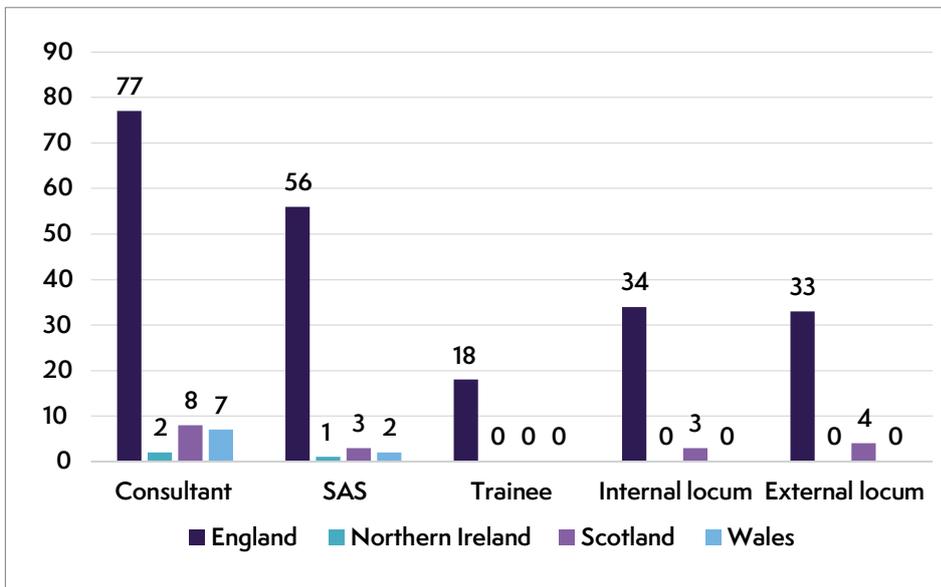
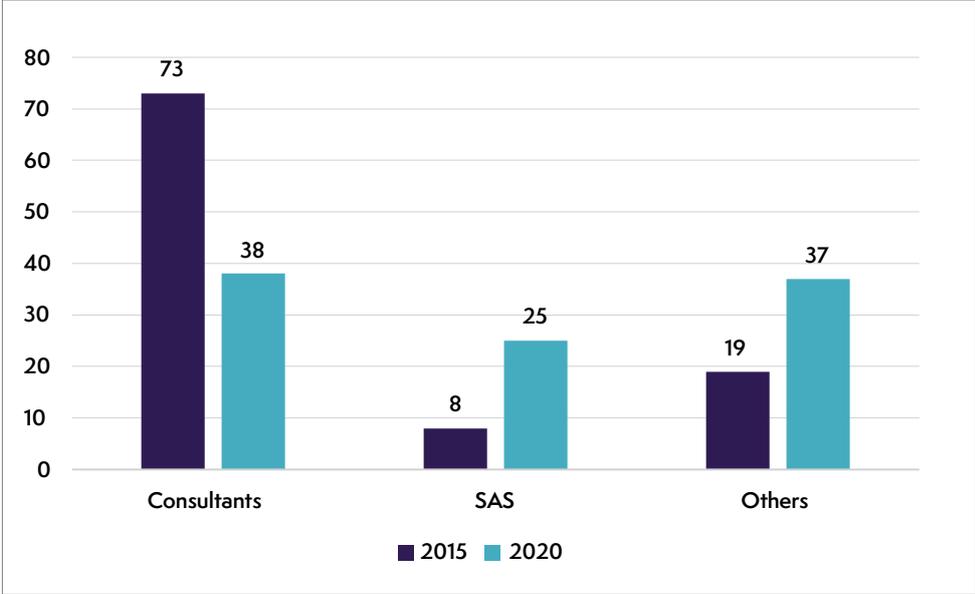


Figure 45: Grades providing additional sessions



On call

On call frequency

On call frequency varies considerably depending on anaesthetic specialty (Table 30). Consultant paediatric intensive care unit rotas are particularly onerous, whereas general rotas are less so.

Table 30: Number of departments with consultant on call frequency and % for that specialty

Frequency	< 1:6	1:6	1:7	1:8	1:9	1:10	1:11	1:12	>1:12
General (%)	6 (3)	1 (1)	5 (3)	13 (7)	10 (6)	15 (9)	9 (5)	20 (11)	95 (55)
Obstetrics (%)	1 (2)	1 (2)	2 (3)	7 (11)	6 (10)	12 (19)	2 (3)	14 (22)	18 (29)
Paediatrics (%)	1 (2)	1 (2)	4 (9)	9 (20)	2 (4)	4 (9)	4 (9)	14 (31)	6 (13)
PICU (%)	1 (13)	3 (38)	3 (38)	1 (13)	-	-	-	-	-
Neurosurgery (%)	-	1 (5)	-	6 (32)	1 (5)	2 (11)	3 (16)	2 (11)	4 (17)
Neuro ICU (%)	-	-	-	5 (42)	-	2 (17)	2 (17)	1 (8)	2 (17)
General ICU (%)	8 (5)	13 (9)	20 (14)	49 (34)	11 (8)	17 (12)	4 (3)	13 (9)	11 (8)
Trauma (%)	2 (4)	4 (9)	3 (7)	11 (24)	3 (7)	10 (22)	1 (1)	4 (9)	8 (17)
Cardiac (%)	1 (3)	6 (18)	-	12 (35)	5 (15)	4 (12)	1 (3)	4 (12)	1 (3)

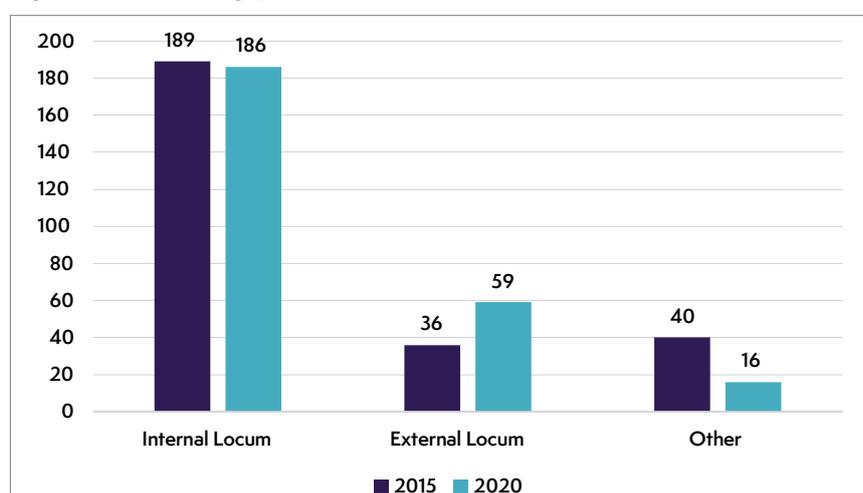
SAS doctors tend to work on call rotas with a higher frequency than consultants, with 25% of SAS doctors working a 1 in 7 or more frequent rota compared with 25% of consultants. In addition, 14% of SAS doctors work an on-call rota of 1 in 10 or less frequently compared with 57% of consultants (Table 31).

Table 31: Number of departments with on call frequency for SAS doctors

Frequency	< 1:6	1:6	1:7	1:8	1:9	1:10	1:11	1:12	>1:12
General	3	2	12	57	3	5	-	4	5
Obstetrics	3	6	13	49	2	7	-	2	3
General ICU	4	3	12	47	1	5	-	-	3
Trauma	1	3	7	1	1	1	-	1	1

Clinical directors were asked how they cover gaps on the consultant on call rota (Figure 46). The vast majority use internal locums with a small number using external locums. Sixteen clinical directors reported that they used 'other', one of which was using a trainee but the others were all internal locums.

Figure 46: How are gaps in the consultant rotas covered?



Senior anaesthetists



The normal physiological changes as we age can impair our clinical performance. Sight, hearing and fine motor skills deteriorate. We are slower to process and store new information. Our ability to cope with change, fatigue and sleep deprivation are diminished. This is a particular issue when working through the night and many anaesthetists choose to step down from overnight on call rotas. This may be problematic as leaving a rota comprising small numbers of colleagues may leave those colleagues with unworkable or excessively onerous job plans. Additional friction may be generated as remaining colleagues feel that removing a colleague from an on call rota based on seniority represents unfair age discrimination, which breaches the Equality Act 2010.¹⁶

Ideally, departments of anaesthesia should have an agreed policy that allows the older anaesthetist to come off the on-call rota and contribute in some other way. In the census we asked whether departments had a policy for older consultants or SAS doctors to come off the on call rota. For consultants, 66 of 129 (34%) respondents had a policy, whereas for SAS doctors just 9 of 125 (7%) respondents had a policy. This difference supports the statements made in the RCoA SAS report, that SAS doctors were often subject to different and less favourable terms and conditions than their consultant colleagues.¹⁷

Many respondents described the age at which a consultant could come off the on call rota, most commonly 55 years of age with a minority using 60 years. Other respondents did not have an age limit, but instead set a minimum number of consultants for on call rotas, usually between 8 and 16. In some centres, when new colleagues were appointed, the more senior members of the rota were offered the chance to come off the on call rota. Other departments specified a minimum period to be on the on-call rota of 10 years, and one respondent said the longest serving came off rather than the oldest. Health and other personal circumstance were also used as a means of taking colleagues off the on call rotas.

"Unofficially they (consultants) have been able to come off at 50 and cover regular trauma sessions"

Clinical Director

"If supported by occupational health department." Clinical Director

"We aspire to get people off the on-call rota, small group decide merits of each person including other reasons."

Clinical Director

SAS doctors appear to be treated differently to consultants when considering a suitable age for coming off on call rotas. Consultants are most commonly allowed off the on call rota at the age of 55 years, whereas SAS doctors must work until they are 60 years old. The reasons for this inequity are unclear and need to be addressed. SAS doctors are more likely to be working on resident rotas where they are required to work through the night, whereas consultants are more likely to be able to remain at home. In this context, it would seem more sensible for SAS doctors to be relieved of their on call commitments at an earlier age.

"No option to (SAS doctors) unless occupational health decide they're unfit." Clinical Director

"Regardless of age, if colleagues (SAS doctors) are finding the night time working too onerous we allow them to move to day time working if the service requirements can facilitate it." Clinical Director

It is clear that there is a wide variety of policies and no consensus agreement about managing senior colleagues' commitment to on call rotas. This probably reflects the lack of national guidance.

Retirement

The census shows that 333 consultants and 45 SAS doctors retired in the year preceding the census (Figure 47 and 48). This represents 4.2% of the consultant and 2.8% of the SAS doctor workforce, which is higher than the 2.7% and 2.4% figures that were noted in the 2015 census. This may reflect higher earners choosing to retire early due to the changes to the annual allowance and taxation on pension contributions. This is supported by the results showing that 82 anaesthetists had chosen to retire because of the pension tax changes (Figure 49).

■ *“Large amount of retirement on the horizon”* Clinical Director

Figure 47: Number of consultant retirements across the UK in the last year

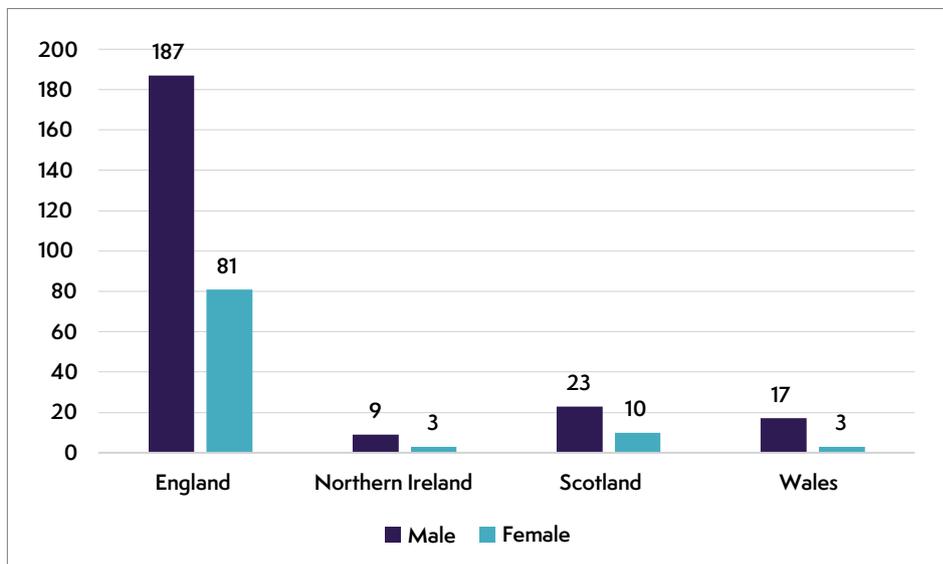


Figure 48: Number of SAS retirements in the UK in the last year

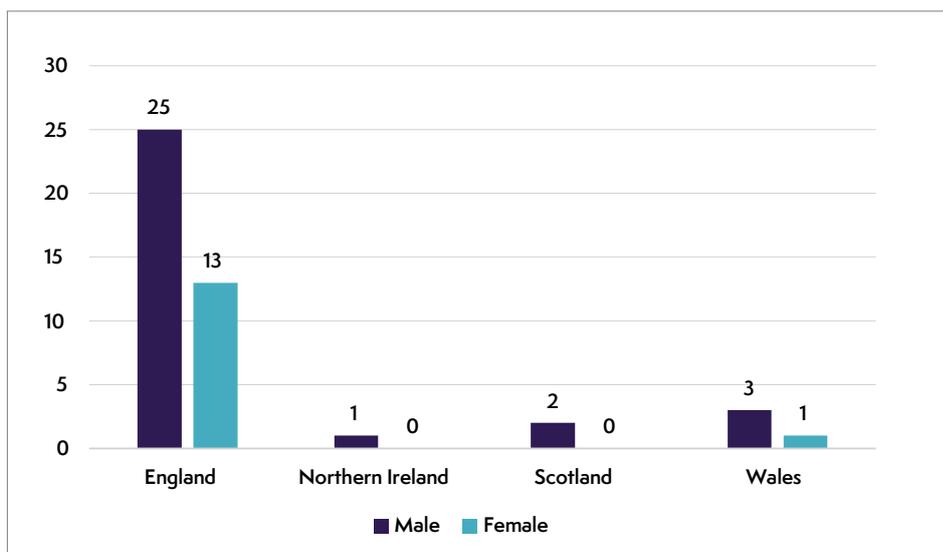
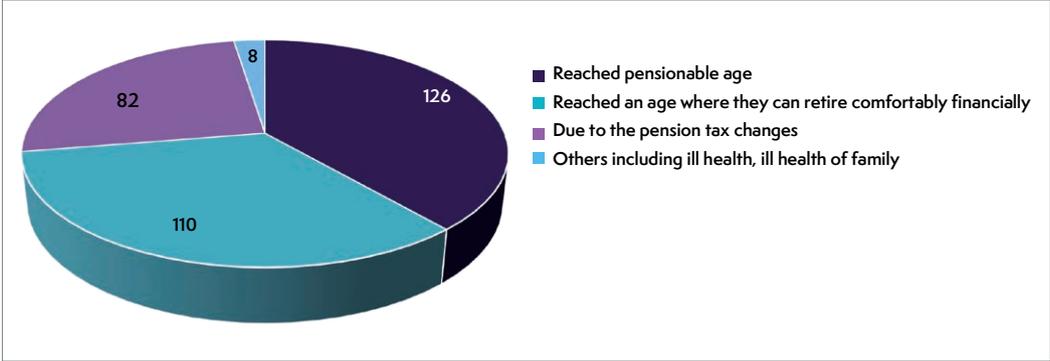


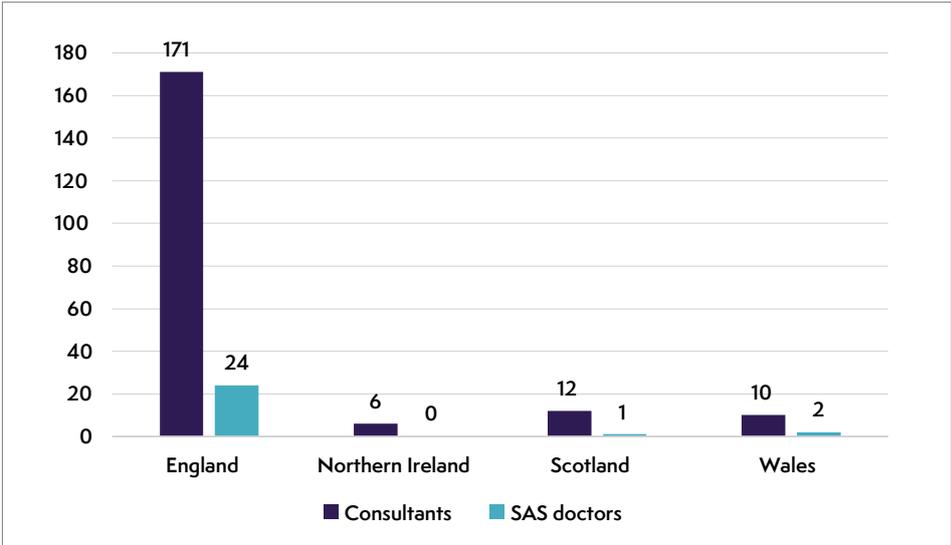
Figure 49: Reasons why consultant and SAS doctor colleagues chose to retire



Retire and return

The number of consultants who retired and returned in 2020 is 199, which is similar to the 202 who retired and returned in 2015. By proportion, marginally fewer SAS doctors than consultants retired and returned (Figure 50). The reasons for this were not explored in the census.

Figure 50: Number of consultants and SAS doctors retiring and returning in the last year



Impact of change in pension tax rules

In 2016, new rules for taxation on pension contributions meant that some consultants were faced with larger tax bills than in previous years. Those that were high earners were disproportionately affected and some chose to minimise their tax liability by reducing their contracted workload. Unsurprisingly, this had an impact on the capacity of the workforce. To assess the effect, we asked how many consultant colleagues had reduced their PAs because of the pension tax (Table 32).

Table 32: Consultants who reduced their contracted PAs because of pension tax changes

English region/country	Number of consultants who reduced their PAs	Proportion of consultants who reduced their PAs (%)
North East and Yorkshire	146	13.1
North West	155	15.5
Midlands	182	17.8
East of England	107	17.4
South East	106	13.1
South West	136	19.8
London	46	3.8
Northern Ireland	26	9.3
Scotland	151	19.4
Wales	76	17.6

Clinical managers reported that 1,131 consultants (14.4% of all consultants) had reduced their PAs because of the new pension tax rules. Interestingly, proportionately fewer consultants in London reduced their PAs compared with other regions (Table 33). This may be because fewer consultants in London were contracted to work more than 10 PAs before the pension taxation changes.

“Pension tax has made worse of the situation for last one year at least. Consultants not interested in doing extra sessions and dropping their PA’s.”

Clinical Director

Table 33: Consultant contracted PAs by region (% of consultants)

	North East and Yorkshire	North West	Midlands	East of England	South East	South West	London	Northern Ireland	Scotland	Wales
7 or less	3	5	4	3	6	8	7	1	4	4
8	4	2	4	2	4	4	4	2	3	5
9	5	3	5	5	4	5	5	1	4	1
10	20	24	24	13	23	28	33	9	31	51
10+	67	67	64	76	63	55	51	87	57	39

If we compare 2015 census data with 2020 census data on the number of consultants contracted to more than 10 PAs in their job plans, we can see that the proportion has fallen from 74% of consultants working more than 10 PAs to 62%. This reduction is almost exclusively in the male consultant workforce who were working more than 10 PAs per week and is likely to be a result of the pension taxation changes (Tables 34 and 35).

Table 34: Gender distribution and participation rates of consultants, 2015

2015	Male (% of total)	Female (% of total)	Total (%)
7 or less	135 (3)	123 (5)	258 (3)
8	42 (1)	122 (5)	164 (2)
9	53 (1)	155 (6)	208 (3)
10	710 (14)	592 (25)	1,302 (18)
10+	4,108 (81)	1,399 (59)	5,507 (74)

Table 35: Gender distribution and participation rates of consultants, 2020

2020	Male (% of total)	Female (% of total)	Total (%)
7 or less	240 (5)	140 (5)	379 (5)
8	97 (2)	178 (6)	276 (4)
9	116 (2)	214 (7)	330 (4)
10	1120 (23)	897 (30)	2017 (26)
10+	3275 (67)	1565 (52)	4840 (62)

Recruitment

Over 90% of departments in the UK have an unfilled consultant, SAS doctor or AA post (Table 36). Some of these posts are unfilled due to problems recruiting new colleagues. To better understand why that might be the case, the census asked clinical directors about difficulties with recruitment (Table 37). Of the 198 clinical directors who placed an advertisement for a consultant post in the last year, 103 (52%) were unable to appoint.

Table 36: Advertised a job in the last year but unable to appoint, by English region and country

Region	% unable to appoint
North East and Yorkshire	61
North West	63
Midlands	68
East of England	44
South East	53
South West	47
London	32
Northern Ireland	44
Scotland	50
Wales	55

Table 37: Reasons why advertised consultant posts were not filled

Reason	Number of Responses
Lack of applicants	79
Lack of appropriately qualified applicants	62
Poor performance at interview	13
Refused job offer	2
Withdrew after appointment	13
Other (please specify)	3

The census showed regional variability in difficulties with appointing consultants. Departments in London had less difficulty with 32% of departments being unable to fill an advertised job, compared with 68% of adverts in the Midlands.

"We are finding we are getting fewer and fewer applicants, and of less quality than 5 years ago."

Clinical Director

"Consultants dropping PA's (for pension reasons) and a lack of new CCTs are hampering plans to expand the service and develop new services."

Clinical Director

"Recruitment an increasing challenge – no applicants for 3 years."

Clinical Director

Of the 172 clinical directors who placed an advertisement for an SAS doctor post, 67 (39%) were unable to appoint (Table 38).

Table 38: Reasons why advertised SAS doctor posts were not filled

Reason	Number of Responses
Lack of applicants	29
Lack of appropriately qualified applicants	47
Poor performance at interview	12
Refused job offer	17
Withdrew after appointment	19
Other (please specify)	2

“Our three SAS doctors act entirely as consultants, occupy senior positions and do significant SPA work as well as contribute to the weekend trauma rota. They are fully capable of independent practice. We recruited one fortuitously within the last 5 years, but I don’t see a steady stream of such people coming through.”

Clinical Director

Departments reported the specialties of the 278 consultant jobs that were advertised, but not filled (Table 39). The number of jobs is higher than the number of departments as some departments advertised more than one job but did not appoint. Intensive care medicine made up 32% of the unfilled jobs, which is disproportionately high considering that only 16% of consultants currently have intensive care medicine in their job plans.

Table 39: Specialties of consultant posts that were advertised but not filled

	Numbers	%
General	124	45
Intensive care medicine	89	32
Pain management	18	6
Cardiac anaesthesia	14	5
Obstetric anaesthesia	14	5
Neuro-anaesthesia	10	4
Paediatric surgery	9	3
Total number of advertised but unfilled jobs	278	100

“Our critical care is on the verge of collapse with such shortage of consultants”

Clinical Director

“Complete lack of available trained intensivists since the introduction of the new dual training”

Clinical Director

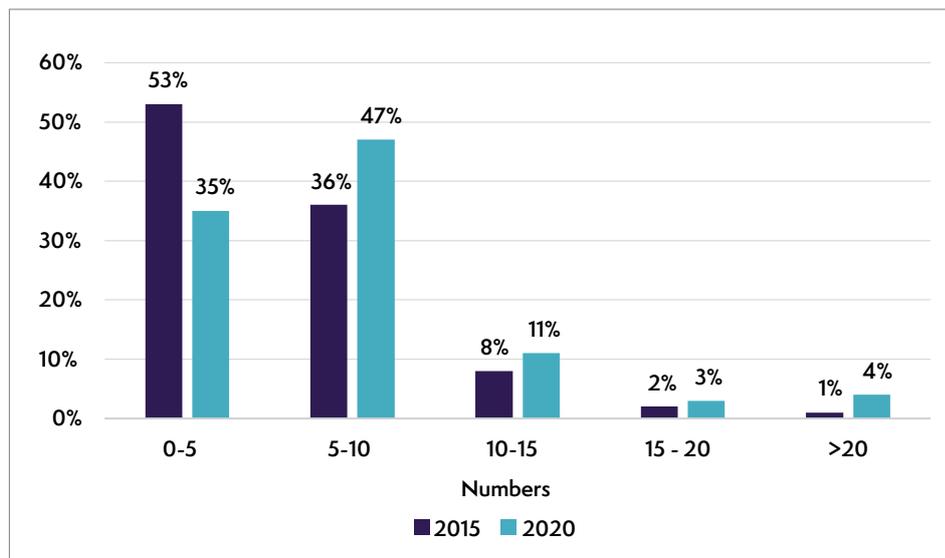
With shortages of UK anaesthetists, organisations must look farther afield and recruit from overseas.

The census asked how many departments had recruited from overseas in the past two years. Of the 195 responses, 110 said that in the past two years they had recruited from overseas, including 61 consultants, 220 SAS doctors and 195 MTI doctors. Many SAS doctors are recruited from overseas as unlike the relatively constant supply of CCT holding anaesthetists leaving the UK training scheme, the supply of SAS doctors is smaller and unpredictable.

Future requirements

In terms of future requirements, the census asked how many new posts were envisaged to be needed over the next two years (Figure 51). The census did not differentiate between new posts and replacement posts. 99.5% of departments reported that they would need to recruit at least one consultant in the next two years (mean 6 consultants per department, range 1–21 consultant posts), totalling 1,104 new consultants. Data from the College training department, projects 700 trainees to complete training by 31 August 2022. 134 departments reported that over the next two years they intended to recruit to SAS posts (total 471 posts, range 1–16). 45 departments reported that over the next two years they intended to recruit to anaesthesia associate posts (total 126 AA posts, range 1–10 AAs). Compared with 2015, departments are planning to recruit larger numbers of consultants and SAS doctors (also Figure 51). This is likely to reflect the increasing workforce gap.

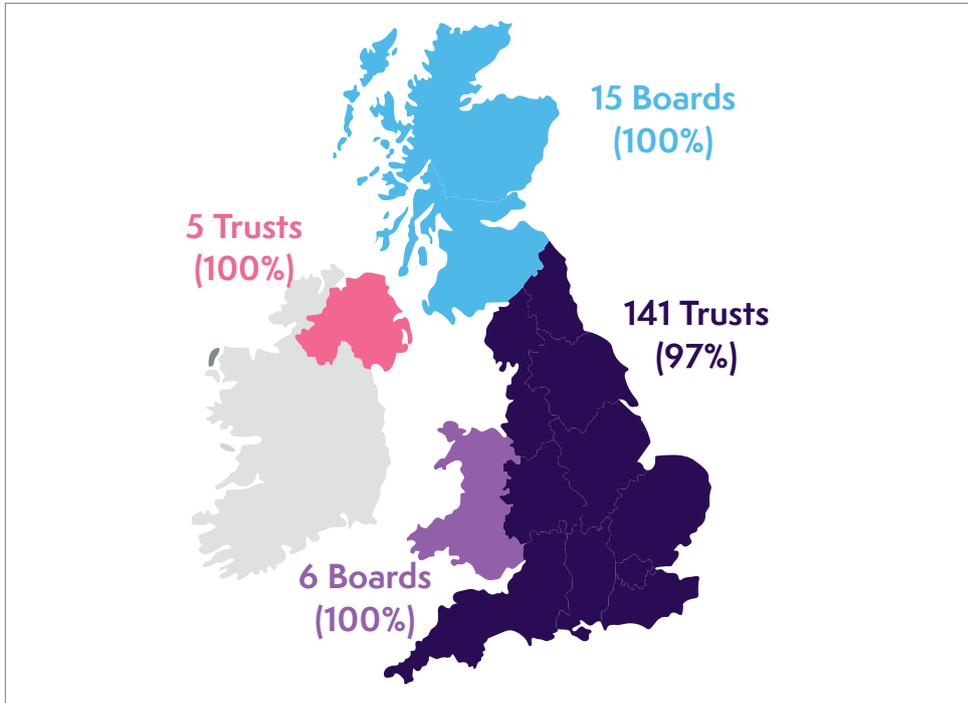
Figure 51: Number of consultants and SAS doctors that departments plan to recruit in next two years



Hospital and department data

Within the UK from 150 NHS Trusts (145 in England and 5 in NI), 21 Boards (15 in Scotland and 6 in Wales) are numbers that responded (Figure 52).

Figure 52: Map of UK with numbers of organisations and percentage that responded



There appears to have been a reduction in numbers of sites providing anaesthesia for various surgical specialties (Table 40 and 41). Some of this may be because the census did not receive responses from a small number of hospitals. However, that would not account for some of the larger differences which may be a result of local units closing to form regional units, as has been seen with trauma, urology, vascular surgery and other specialties (Figures 53, Tables 43–46).

Figure 53: Number of deliveries per hospital per year in obstetric unit

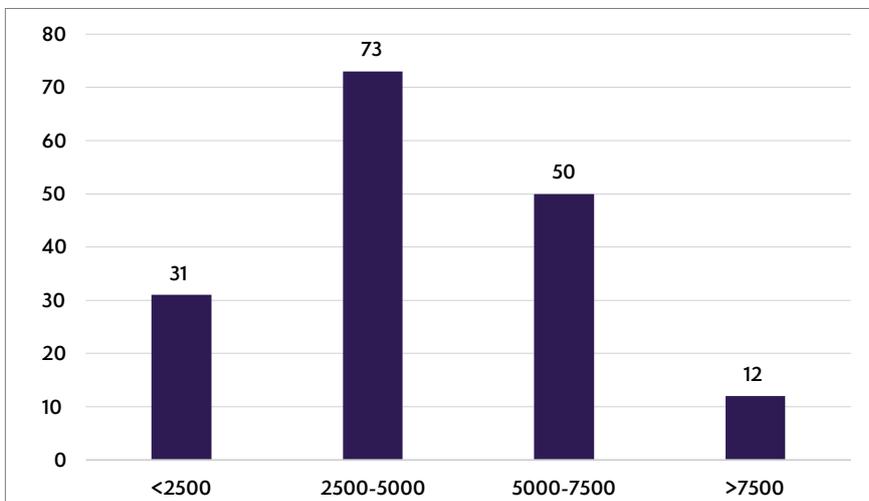


Table 40: Services for which departments provide anaesthetists

	Number of hospitals providing service 2015	Number of hospitals providing service 2020
Neurosurgery	39	39
Cardiac surgery	–	40
Thoracic surgery	–	46
Cardiothoracic surgery	39	–
Cardiac catheter laboratory	–	91
Reproductive medicine	–	46
Plastics/burns	82	62
Vascular surgery	–	100
ECT	126	102
Maxillo-facial surgery	–	126
Long term vascular access	–	128
Paediatric surgery	180	152
Pain – inpatient	–	153
Pain – outpatient	–	161
Pain medicine	190	–
Ophthalmology	170	158
Obstetrics	177	163
Radiology	176	165
ENT	182	167
Dental surgery	191	168
Trauma surgery	–	169
Urology surgery	195	170
Gynaecology	192	174
Orthopaedics	199	178
General surgery	206	185
ICM	210	191
Day surgery	215	192
Preop assessment	208	199
Others	71	33

Table 41: In how many rooms is an anaesthetist required?

Number of rooms	Number of hospitals	% of total
0–20	99	49
21–40	72	36
41–60	20	10
61–80	11	5

Table 42: How many critical care beds (level 2 and level 3) is your department responsible for? Data includes critical care beds from all the units such as Cardiothoracic, General, Neurosurgery and Paediatric Intensive Care (PICU), but does not include Neonatal Intensive Care.

Number of ICU beds	Number of hospitals
0–10	54
11–20	82
21–30	23
31–40	14
41–50	10
51–60	9
61–70	2
71–80	1
81–90	0
91–100	0
101–110	0
111–120	2

Table 43: How many deliveries are there per year in your obstetric unit?

Number of deliveries	Number of hospitals
<2500	31
2500–5000	73
5000–7500	50
>7500	12

Table 44: How many patients are referred to your antenatal anaesthetic clinic per year?

ANC	Number of hospitals
<250	60
250–500	52
500–750	14
750–1000	6
>1000	5
Don't Know	17

Table 45: How many new outpatient referrals does your pain service receive per year?

Pain OPC	Number of hospitals
<250	29
250–500	18
500–750	8
750–1000	16
>1000	51
Don't Know	44

Table 46: How many patients are referred to your medical preassessment clinic per year?

POA	Number of hospitals
<250	25
250–500	31
500–750	19
750–1000	12
>1000	83
Don't Know	20

Conclusion

In July 2020, NHS England and NHS Improvement published the People Plan for 20/21 which puts staff at the core of the NHS.¹⁸ It sets out key workforce issues around wellbeing, equality, and new and flexible ways of working to make full use of the range of skills in the workforce. Few would argue with any of it. However, the 2020 census revealed issues that will provide significant challenges in fulfilling the ideals set out in the People Plan. The ability to deliver on the aspirations of the People Plan will be largely dependent on the outcome of the next comprehensive spending review and whether a realistic settlement for the health and social care sector is provided, that includes capital investment, pay reviews and training budgets and all the resources necessary to deal with the fallout from the pandemic and Brexit.

The focus on wellbeing was timely as NHS staff adjusted to the pressures of new and complex working practices as a result of COVID -19. However, making sure we look after ourselves and each other is difficult when services are short staffed. The census showed that funded but unfilled posts are common in anaesthesia, with over 90% of departments across the UK having at least one vacancy and 680 funded but unfilled posts. More worrying is that this is rapidly worsening, almost doubling from a consultant gap of 4.4% in 2015 to 8% in 2020. This is concerning enough, but tells only part of the story. The 2020 census explored the additional gap of unfunded posts that a department needs to match demand. When this is included, the real gap is even higher, rising to 17.8% in Wales.

Estimating future requirements for anaesthetists is difficult. Clinical directors told us they estimated that they would need 1,104 new consultants over the next two years. We can also calculate requirements by looking at historical data. The specialty of anaesthesia has been growing at around 2%. Using this figure, over the next 2 years, we would need another 320 consultants (2% of 8,000 for 2 years) to cope with growth. Retirements have been around 300 per year, so we would need another 600 consultant anaesthetists to replace those that have retired. Combining these two figures gives us a demand of around 920 anaesthetists. However, this ignores the existing gap of 680 consultant anaesthetists and 243 SAS doctor posts. In addition, departments had an aspirational gap of 374 consultant anaesthetists and 113 SAS doctor posts. To fully staff their departments to cope with demand, over the next two years, the specialty of anaesthesia requires 2,330 additional trained anaesthetists. The College estimates that over the next two years, around 700 anaesthetists will gain their CCT.

In addition to significant workforce gaps, the census found that participation rates (the amount of work in a doctor's job plan) in some areas are very high (87% of consultants in Northern Ireland and 76% of consultants in the East of England work more than 10 PAs). These shortages and high participation rates mean that colleagues are working long and sometimes excessive hours, increasing the risks of stress, fatigue, burnout and failures in patient care.

In terms of equality, anaesthesia needs to critically examine how we treat our SAS doctors. The census showed that SAS doctors are being treated less sympathetically than their consultant colleagues. They are more likely to be taking part in resident on call rotas, but fewer departments have policies for them to come off on call. When they do come off the on call rota, they have to wait until the age of 60 years, five years later than their consultant colleagues.

As has been seen with previous census reports, the 2020 census demonstrated increasing feminisation of the workforce, which will continue as the trainee body has a higher proportion of females than senior anaesthetist groups. Flexibility will be essential to provide jobs that enable anaesthetists with families to continue to work rather than leaving the profession, and workforce modelling will have to include a lower average participation rate across the workforce.

In terms of new ways of working, the Centre for Perioperative Care (CPOC) initiative advocates increased collaborative working alongside our related specialties. This will improve the quality of the service we provide but will consume anaesthetic capacity generating an additional workforce burden. In addition to new ways of working as part of CPOC, anaesthesia continues to invest in new roles such as anaesthesia associates. However, progress is slow and will continue to be slow until the role is fully regulated by the GMC and training is expanded. The census recorded 173 anaesthesia associates in the UK (1.7% of the non-trainee workforce). The numbers from the University of Birmingham confirmed 205 AAs. However the lower number may also be due to some AAs not staying in their job, suggesting a possible retention issue.

There are no quick fixes to workforce pressures. There needs to be an increase in the number of trainees in anaesthesia with constant monitoring to ensure that the consultant and SAS doctor gaps are reducing. Where training schemes have less than 100% fill rates, there should be an assessment of reasons why there has been a failure to recruit. Anaesthesia needs to ensure that it is an attractive career choice for medical students. The number of medical students has increased, but that increase is unlikely to fill our current or future workforce gap. In the absence of a medical workforce solution, we need increased numbers of anaesthesia associates with satisfying roles that encourage them to stay. Retention is a significant issue at all grades, including trainees and senior doctors at the point of retirement. Jobs need to be interesting, flexible and have a career path that accommodates changing interests and abilities. Attracting overseas doctors for a period of time in the UK is key, but this should be done ethically, trading experience and training for service.

The results are worrying but they give us clarity on the magnitude and pace of the workforce problem across the UK. We hope that the census will raise questions and act as a catalyst to discussions about new ways of delivering a high-quality service. The census will also provide a national body of evidence for the development and delivery of a coordinated workforce strategy for anaesthetic and perioperative care at both national and local levels.

Key areas to explore in the future

- Diversity and equality in the anaesthesia workforce
- Reasons for lack of growth in the SAS workforce
- Departmental wellbeing strategy and impact on the workforce
- Retention solutions
- Barriers to employment of anaesthesia associates
- Use of advanced care practitioners and allied health professions

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