

Clinical oncology UK workforce census 2015 report

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Foreword and acknowledgements

The RCR clinical oncology workforce census provides detailed and robust information on the numbers, distribution and activities of all clinical oncologists in the UK. It provides information on changing workforce and working patterns, and is used to advocate for increases in training numbers in all UK countries and regions. The collected census information remains the most accurate picture of the available national clinical oncology workforce. Data is a powerful tool and the RCR will use this in discussions with stakeholders around the issue of workforce planning in cancer care.

I would like to thank all clinical oncology Heads of Service who submitted information for the 2015 census. Once again, a 100% response rate has been achieved from every cancer centre in the UK. Finally, thank you to Mr Don Liu (RCR Data and Surveys Manager) for helping to conduct the census and analysing and writing up the results.

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1. Main findings from the 2015 census

Expanding workforce in clinical oncology

The whole-time equivalent (WTE) consultant clinical oncology workforce in UK cancer centres has increased at an average rate of 4% per annum in the past five years. Between 2014 and 2015 alone, the headcount increased by 8%, from 766 to 827. These increases can only be welcomed as they represent more cancer treatment specialists working in the NHS. However, the increases have not been sufficient to keep up with demands made on cancer services. The cancer incidence rate has risen over the last decade and the number of people diagnosed and living with cancer is expected to grow rapidly due to an ageing population. This places a greater demand on clinical oncologists, and the demand is compounded by the complexity of technologies, such as image-guided radiotherapy and stereotactic ablative radiotherapy, being used in the NHS. Between two and three times as much clinician time is required in the planning, supervision and verification of treatment delivery compared to when older technologies are used. Further and continued expansion of the clinical oncology workforce is therefore required, not only to meet the demands of a growing population of cancer patients, but also to fully realise the opportunities made available by new cancer treatment technologies for improved patient outcomes.

Excess workloads experienced by consultant clinical oncologists

Many UK consultant clinical oncologists work in excess of ten programmed activities (PAs) per week (equivalent to the normal working week of 40 hours). Of those consultants working full time, 50% had 11 or more PAs in their job plans, and 25% had 12 or more PAs. The vast majority (85%) of consultants had a workload that encompasses not just radiotherapy but also chemotherapy and other systemic anti-cancer treatments. Another aspect adding to counted working time is the travel between hospital sites to deliver care: some 42% of consultants travel to more than one site during the working day on a regular basis. If all consultants were limited to a contractual maximum of ten PAs, a further 67 WTE consultants would be required immediately to cover the current excess – an

increase on the 2014 figure of 61. This increase means that more work is being undertaken overall by the current consultant workforce.

Feminisation of the workforce and increasing extent of less than full-time working

A growing number of consultant clinical oncologists is choosing to work less than full-time (LTFT), from 19% in 2010 to 23% in 2015. The extent of LTFT working is very likely to continue to increase in the near future. The clinical oncology workforce is becoming increasingly feminised and women in the specialty are more likely to work LTFT. In 2015, 38% of female consultants worked LTFT, compared with 9% of male consultants. The 2015 census shows that 46% of consultants are women and this percentage is expected to increase, given that nearly two-thirds of those coming through the training system are female. Already, in some regions, women form the majority in the consultant workforce, and they exceed the number of male consultants in the 40–54 age groups. The extent of LTFT working does have implications for workforce planning as it affects the overall capacity of the clinical oncology workforce. It also highlights the need for flexible working arrangements and policies if cancer centres are to retain their clinical oncologists, given that many work LTFT due to family commitments.

Retirement rates and recruitment difficulties

Around 18% of consultant clinical oncologists currently working in the UK could retire at the age of 60 in the next five years (2015–20). In some UK regions this figure could be higher; in particular in North East England, where 26% of current consultants could retire over the same time period. In the haematological malignancy, skin, breast and thyroid tumour site specialties, around a quarter of consultants could retire by 2020. If robust plans have not been formulated to replace those retiring, then the sustainability of some clinical oncology services could be problematic. There is a role for flexible portfolio working to persuade these valuable experienced individuals to remain in the workforce.

Already, many cancer centres are experiencing difficulties in recruiting new members of staff. Of the 21 consultant posts recorded as being unfilled on 1 October 2015 by the RCR census, over 50% have been vacant for 12 months or longer. Heads of service highlighted the negative impact on service

planning and delivery in cancer centres due to problems in recruitment. This included the inability to increase much-needed service capacity to meet demand, cancellation of patient clinics and missed waiting time targets for treatments.

2. Background and methodology

Background

The RCR first carried out the annual UK clinical oncology workforce census in 2008 and has repeated the exercise each year since. This report contains the results of the 2015 census. The aim is to capture comprehensive and accurate information on the clinical oncology workforce in UK cancer centres. Standardised questions have been used year on year to allow for comparison of information and identify trends over time. The comprehensiveness and accuracy of the census information is essential in allowing the RCR to contribute to NHS workforce planning efforts.

Collection of information and response rate

The 2015 census achieved an 100% response rate from heads of service, with all 62 cancer centres in the UK submitting information (the response rate for all previous censuses was 98–100%). Two of these centres – in Altnagelvin Hospital (Northern Ireland) and Worcestershire Acute Hospitals Trust (England) – were in the process of setting up as new services as the census took place, and clinicians already employed by these centres were undertaking clinical practice.

The questions used in the census can be found in Appendix 1. Heads of service were asked for information on the number of consultant clinical oncologists in substantive posts, and their professional roles and activities, working patterns and tumour site specialisation. Details of those clinical oncologists leaving the NHS and vacant

consultant posts were also sought. A headcount of non-consultant clinical oncologists and consultant medical oncologists was obtained through the census to provide a greater understanding of the medical workforce in UK cancer centres. The information provided reflected the workforce at the census date of 1 October 2015.

Heads of service were also asked for information on routine (non-emergency) radiotherapy and chemotherapy service opening hours for their cancer centres, using September 2015 as the sample period. This was to provide an indication on the length of working days and extent of seven-day working faced by clinicians.

Presentation of results

The workforce figures in this report are given as headcount, unless otherwise stated. Where WTE figures are used, the calculation conforms to the current NHS convention of excluding programmed activities (PAs) that exceed ten PAs. Even though a consultant may be contracted to undertake 11 (or more) PAs, their WTE figure will be capped at 1.0, not 1.1.

Microsoft Excel has been used to enter the census data, collate into tables and produce charts for this report. Where appropriate, information from previous censuses has been included, mainly from 2014 and 2010, to allow for one- and five-year comparisons to be made with the 2015 information. Free-text comments collected through the 2015 census have been used in this report to highlight specific workforce and workload concerns.

3. Overview of the UK clinical oncology workforce

Headcount of clinical oncologists

As of 1 October 2015, there were 827 consultant clinical oncologists working full time or LTFT in an NHS substantive post in the UK. The headcount of consultants has increased by an average of 4% per annum for the last five years. The 20% growth since 2010 (8% since 2014) can only be welcomed. However, these increases have not been sufficient to keep up with demands made on cancer services. Over the last decade, incidence rates for all cancers combined have increased by 7%.¹ The number of people diagnosed and living with cancer is expected to grow rapidly due to an ageing population.² This places a greater demand on clinical oncologists in delivering cancer treatment.

These demands are compounded by the complexity of treatment technologies, such as intensity-modulated radiotherapy and stereotactic ablative radiotherapy, being used in the NHS, which require clinical oncologists to spend more time planning, supervising and verifying treatment delivery compared to when older technologies are used.

It must also be noted that the extent of the overall UK increase in headcount of clinical oncologists has not been replicated in all UK countries and regions. Since 2010, Scotland has seen a 4% decrease in headcount, while increases have been minimal in the East Midlands, London, and Yorkshire and Humber regions.

Table 1. Headcount of clinical oncologists by UK country, 2015

	England	Northern Ireland	Scotland	Wales	UK total
Consultants	691	26	64	46	827
Trainees	303	12	31	20	366
Other grades	71	4	2	5	82
Total	1,065	42	97	71	1,275

Table 2. Headcount of consultant clinical oncologists by UK country and region, 2010–15

	2010 headcount	2014 headcount	2015 headcount	% change 2014–15	% change 2010–15
England – East Midlands	45	44	47.5	8%	6%
England – East of England	54	85	86	1%	59%
England – London	90	95	100	5%	11%
England – North East	30	32	34	6%	13%
England – North West	75	89	95	7%	27%
England – South Central	55	63	70.5	12%	28%
England – South East	49	49	54	10%	10%
England – South West	62	70	75.5	8%	22%
England – West Midlands	46	53	67.5	27%	47%
England – Yorks and Humber	56	59	61	3%	9%
England – total	562	639	691	8%	23%
Northern Ireland	19	22	26	18%	37%
Scotland	67	62	64	3%	–4%
Wales	39	43	46	7%	18%
UK – total	687	766	827	8%	20%

Whole-time equivalent consultants

As in previous census reports, the calculation of WTE numbers take into account a consultant's direct clinical care (DCC) and supporting professional activities (SPAs), but excludes their research and additional responsibility (AR) PAs. The calculation also conforms to the current NHS convention of excluding PAs that exceed ten PAs. Even though a consultant may be contracted to undertake 11 (or more) PAs, their WTE figure will be capped at 1.0 and not 1.1.

Expressed as WTEs, there were 772 consultant clinical oncologists employed in substantive NHS posts as of 1 October 2015. This is a 10% increase on the 2014 figure and 19% increase since 2010; the average annual increase is around 4%. The

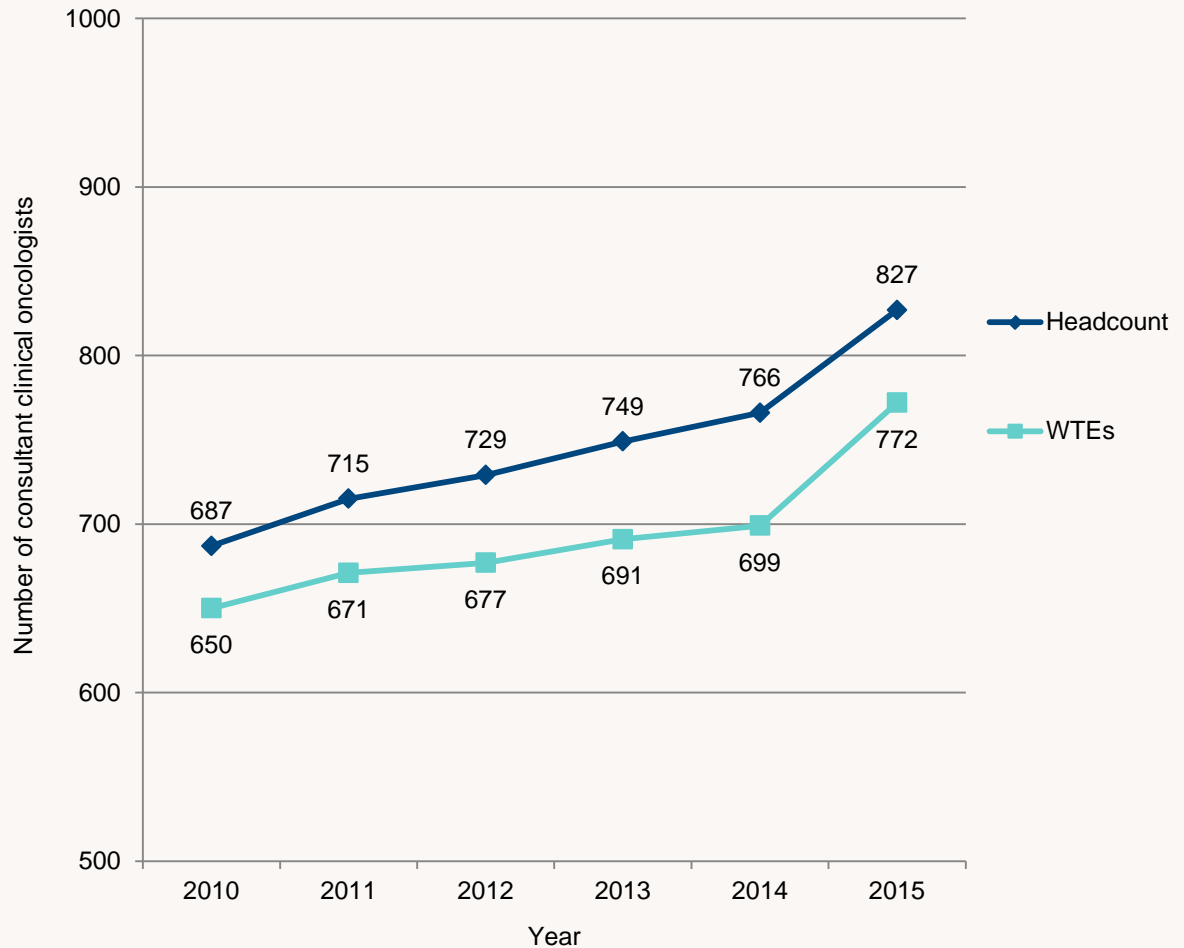
extent of these increases varies across the UK. The East Midlands, North East and South East England, and Yorkshire and the Humber regions all saw minimal increases of less than 10% in the number of WTE consultants between 2010 and 2015. Meanwhile, over the same period, Scotland experienced a 6% decrease in WTEs.

As noted above, a full interpretation of any increases in the clinical oncology workforce needs to take into account previous and expected rises in UK cancer incidence and prevalence rates. It also needs to allow for the complexity of cancer treatment technologies being used in the NHS, requiring clinical oncologists to spend more time planning, supervising and verifying treatment delivery compared to when older technologies are used.

Table 3. WTE consultant clinical oncologists by UK country and region, 2010–15

	2010 WTEs	2014 WTEs	2015 WTEs	% change 2014–15	% change 2010–15
England – East Midlands	42.4	42.7	45.8	7%	8%
England – East of England	51.0	76.4	79.6	4%	56%
England – London	82.6	86.3	91.5	6%	11%
England – North East	29.3	30.1	31.2	4%	7%
England – North West	72.3	81.6	87.9	8%	22%
England – South Central	52.2	52.1	67.0	29%	28%
England – South East	46.5	44.3	48.4	9%	4%
England – South West	58.6	67.9	72.4	7%	24%
England – West Midlands	44.3	50.9	64.9	28%	47%
England – Yorks and Humber	52.9	53.3	56.0	5%	6%
England – total	532.0	585.6	644.7	10%	21%
Northern Ireland	18.0	19.8	25.2	27%	40%
Scotland	64.9	58.5	61.2	5%	–6%
Wales	35.2	35.4	41.1	16%	17%
UK – total	650.1	699.3	772.1	10%	19%

Figure 1. UK consultant clinical oncologists – headcount and WTEs, 2010–15

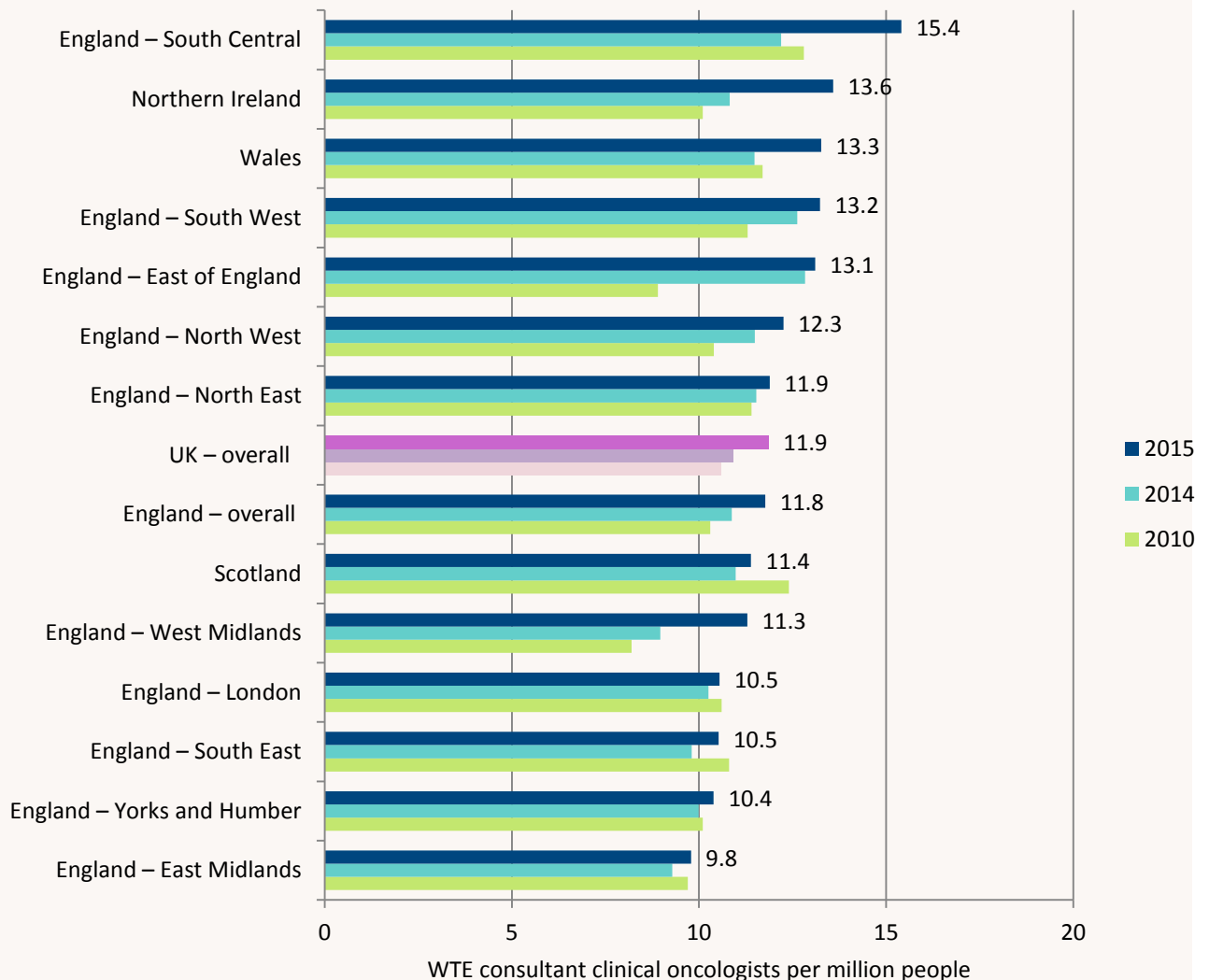


WTE consultant clinical oncologists per million people

The population of the UK has risen between 2014 and 2015 by around 0.5 million to 65.1 million.³ The number of WTE consultant clinical oncologists per million people was around 11.9 in 2015, which is an

increase on the 10.9 observed in 2014 and 10.6 in 2010. There is a 44% difference between the region with the highest (South Central England) and lowest (East Midlands) number of WTE consultants per million people, and this raises questions about inequalities in cancer patients accessing the expertise of clinical oncologists.

Figure 2. Number of WTE consultant clinical oncologists per million people by UK country and region, 2010–15



Headcount-to-WTE ratio

The consultant-headcount-to-WTE ratio is useful for workforce planning purposes. A ratio of 1:0.93 (observed in 2015) equates to 100 individual consultants, including those working LTFT, having the workload of 93 full-time consultants. This needs to be taken into account by workforce planners when commissioning training places, as the

headcount completing training will not be replicated as an additional number of WTE consultants over time. This is particularly so in clinical oncology as more women are entering the consultant workforce and they have a greater propensity to work LTFT (see below).

Table 4. Headcount-to-WTE ratio – consultant clinical oncologists, 2010–15

	2010	2014	2015
England	1:0.95	1:0.92	1:0.93
Northern Ireland	1:0.95	1:0.90	1:0.97
Scotland	1:0.97	1:0.94	1:0.96
Wales	1:0.90	1:0.82	1:0.89
UK – overall	1:0.95	1:0.91	1:0.93

Excess programmed activities worked in clinical oncology

As stated above, where WTE figures are shown, the calculation conforms to the NHS convention of excluding PAs that exceed ten PAs. However, many consultants are contracted to work in excess of ten PAs per week. Of those working full-time, 50% worked 11 PAs or more, and 25% worked 12 PAs or more. If all consultants were limited to a

contractual maximum of ten PAs, a further 67 WTE consultants would be required immediately to cover the current excess – an increase on the 2014 figure of 61. This represents a widening gap in the number of WTEs needed to provide clinical oncology services in the UK if all consultants were limited to ten PAs.

Table 5. Number of full-time consultants with 11.00–11.99 and 12.00 or more PAs, 2015

	Number of full-time consultants	Percentage of full-time consultants
11–11.99 PAs	161	25%
12 or more PAs	158	25%
Total	319	50%

Table 6. Excess worked in clinical oncology in terms of number of additional WTE consultants

	2014	2015
Excess worked in clinical oncology represented by number of additional WTE consultants	61	67

Workload – cancer treatments

Clinical oncologists are the only medical specialists who can prescribe radiotherapy and are responsible for its planning, supervision and delivery (including managing toxicity, dose modifications and assessments) to patients. The number of WTE consultant clinical oncologists in England has increased by 21% between 2010 and 2015, whilst the number of radiotherapy episodes (each representing one or a series of treatment contacts for an individual patient) has increased by 6%.⁴ This may seem to be positive news, but the measure of radiotherapy activity has no complexity component. Technologies have been introduced in the NHS in recent years (eg intensity-modulated radiotherapy and image-guided radiotherapy) and are continuing to be introduced (eg stereotactic ablative therapy and proton beam therapy). These technologies require between two and three times more clinician input and time in planning, supervision and delivery of treatment compared to conventional technology.

Clinical oncologists also currently deliver 50% of systemic anti-cancer therapy in the UK. Chemotherapy attendances are increasing at around 12% per annum. In England, it is estimated at least 87,000 cancer patients were admitted for chemotherapy in 2009/10, and this number increased to more than 100,000 in 2012/13 and 130,000 in 2013/14.⁵

With the development of acute oncology, many clinical oncologists contribute to the overall care of cancer patients who are inpatients outside of the cancer centres.

Increases in the volume, intensity and complexity of the workload has led to a shortfall in capacity, despite increasing number of consultant clinical oncologists, to meet the demand for cancer

treatments. The following comment was received through the census:

'With the focus very much on finance for many years in our health board, so that concerns about medical and physics workloads required increased staffing were effectively ignored by our medical and non-medical managerial colleagues, there is a huge gap between the staff levels required and being provided/funded. This is also the case at the trainee grade level, and affects nursing levels too.'

Combined clinical oncology and medical oncology workforce

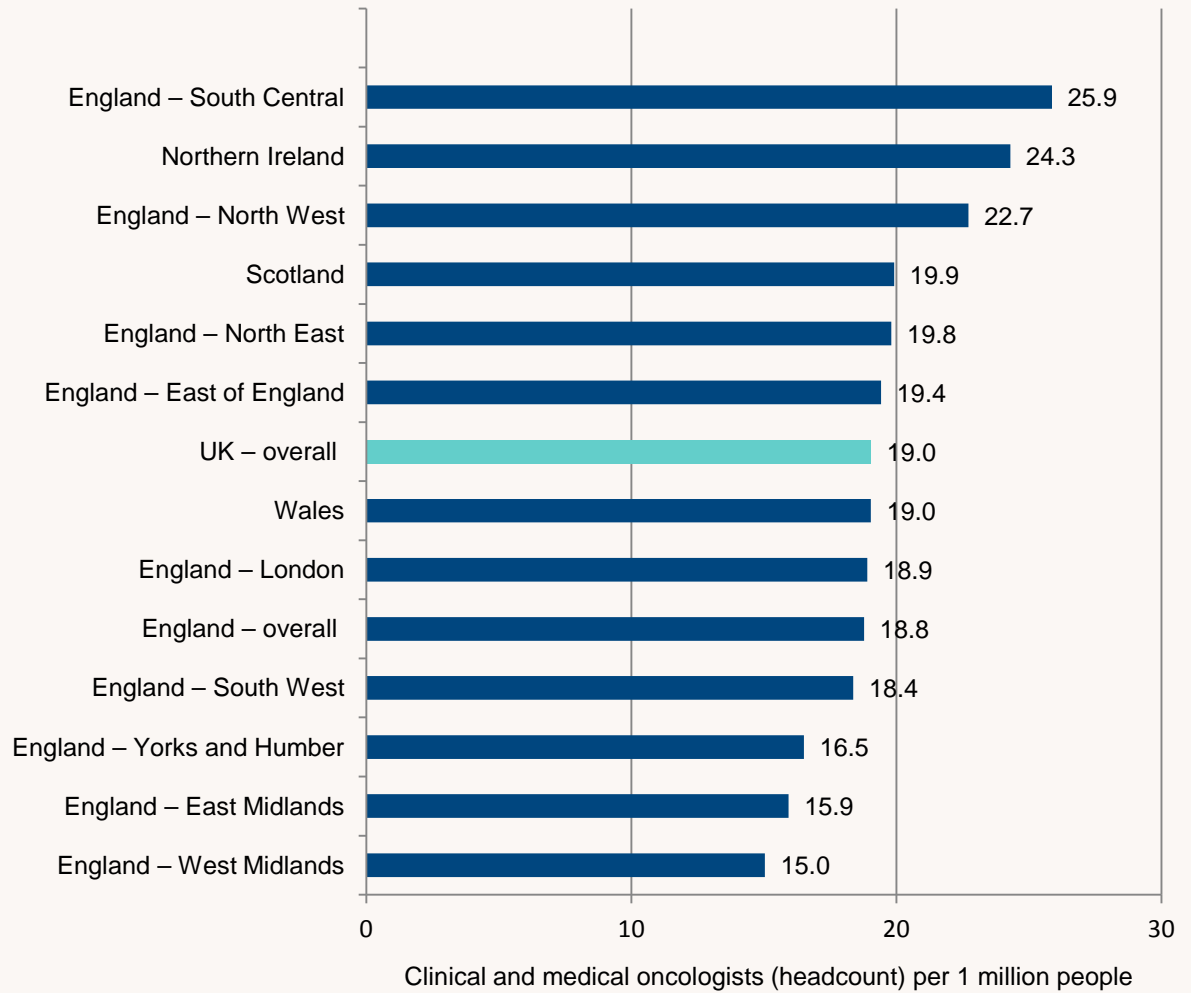
As well as asking about clinical oncologists, the RCR census also requested a headcount of full-time and LTFT consultant medical oncologists employed by cancer centres as of 1 October 2015. This is to provide an indication of the size of the combined clinical oncology and medical oncology workforce in the UK. Joint, cross-specialty, workforce planning efforts could lead to improved outcomes for cancer patients. Particular attention should be drawn to the regional variations in the combined numbers of clinical and medical oncologists per million people (Figure 3) – the highest being 26 in South Central England and the lowest being 15 in South East England and the West Midlands, a 54% difference.

The total number of UK consultant medical oncologists identified through the RCR census was 413, which is fewer than the 434 stated by the Royal College of Physicians (RCP) in its 2014–15 census report.⁶ Some medical oncologists do not work in cancer centres and this might explain the discrepancy between the RCR and RCP figures.

Table 7. Headcount of consultant clinical and medical oncologists employed by cancer centres by UK country and region, 2015

	Clinical oncologists			Medical oncologists			Oncologists
	FT	LTFT	Total	FT	LTFT	Total	Total
England – East Midlands	38	9.5	47.5	18	9	27	74.5
England – East of England	63	23	86	24	8	32	118
England – London	75	25	100	39	25	64	164
England – North East	24	10	34	9	9	18	52
England – North West	77	18	95	53	15	68	163
England – South Central	53	17.5	70.5	28	14	42	112.5
England – South East	35	19	54	8	7	15	69
England – South West	61	14.5	75.5	18	7	25	100.5
England – West Midlands	57	10.5	67.5	12	7	19	86.5
England – Yorks and Humber	47	14	61	19	9	28	89
England – total	530	161	691	228	110	338	1,029
Northern Ireland	22	4	26	15	4	19	45
Scotland	49	15	64	29	14	43	107
Wales	39	7	46	11	2	13	59
UK – total	640	187	827	283	130	413	1,240

Figure 3. Consultant clinical and medical oncologists employed by cancer centres per million people by UK country and region, 2015



4. NHS consultant clinical oncologists

Type of consultant post in clinical oncology

As stated above, the number of UK consultant clinical oncologists in 2015 was 827. This figure includes NHS consultants, those described as holding mixed NHS/academic posts (on NHS

contracts) and those holding wholly academic posts (on university contracts). The distribution of consultants across these groups is shown in Table 8.

Table 8. Type of consultant post held by clinical oncologists, 2015

Type of post	Headcount	Percentage of consultants
NHS	753	91%
Mixed NHS/academic	48	6%
Academic	25	3%
Other	1	<1%

Gender

Clinical oncology is experiencing a feminisation of its workforce. The percentage of female consultants has increased from 42% in 2010 to 46% in 2015. Nearly two-thirds of current trainees are female. Already, in two regions (London and South East England) women are the majority in the consultant workforce, and across the UK they exceed the

number of men in the age groups from 40 to 54. This has implications for workforce planning. When examining those consultants working LTFT in clinical oncology, women are more likely to fall into this category (38% compared to 9% of male consultants), affecting WTE consultant figures.

Figure 4. Percentage (and headcount) of female and male UK consultant and trainee clinical oncologists, 2015

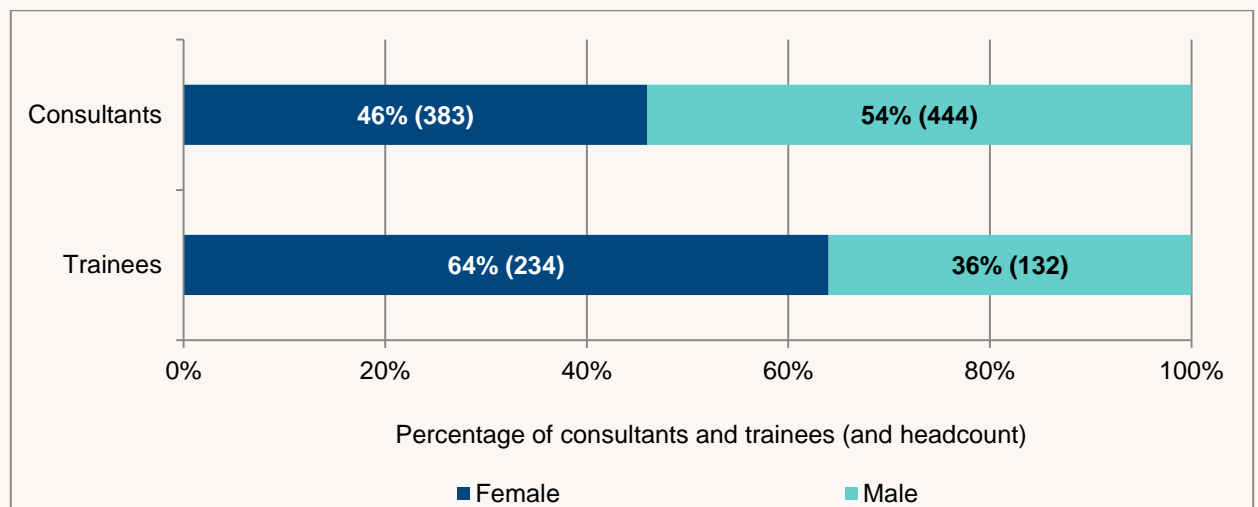


Figure 5. Women as a percentage of the UK consultant clinical oncologist workforce, 2010–15

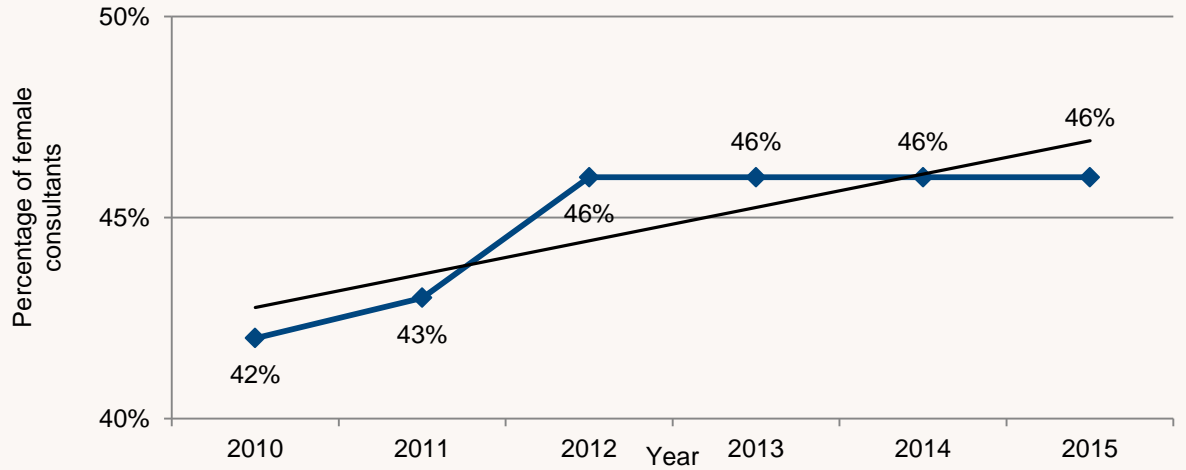


Figure 6. Percentage of female and male consultants by UK country and region, 2015

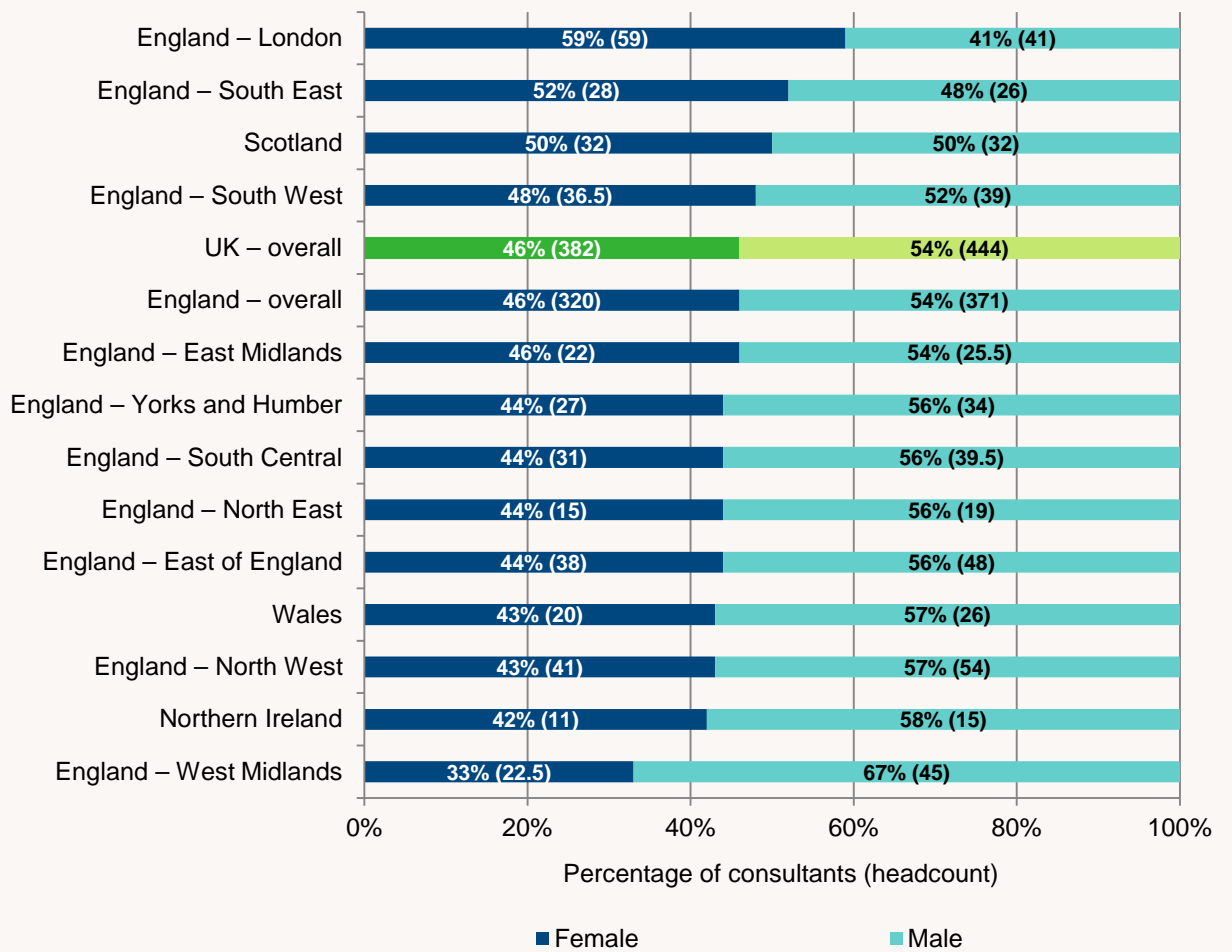


Table 9. Consultant clinical oncologists by age group and gender

Age group	Female	Male
30–34	11	5
35–39	51	61
40–44	118	111
45–49	102	79
50–54	66	63
55–59	20	61
60–64	10	35
65–69	1	19
Unknown	4	10
Total	383	444

Age

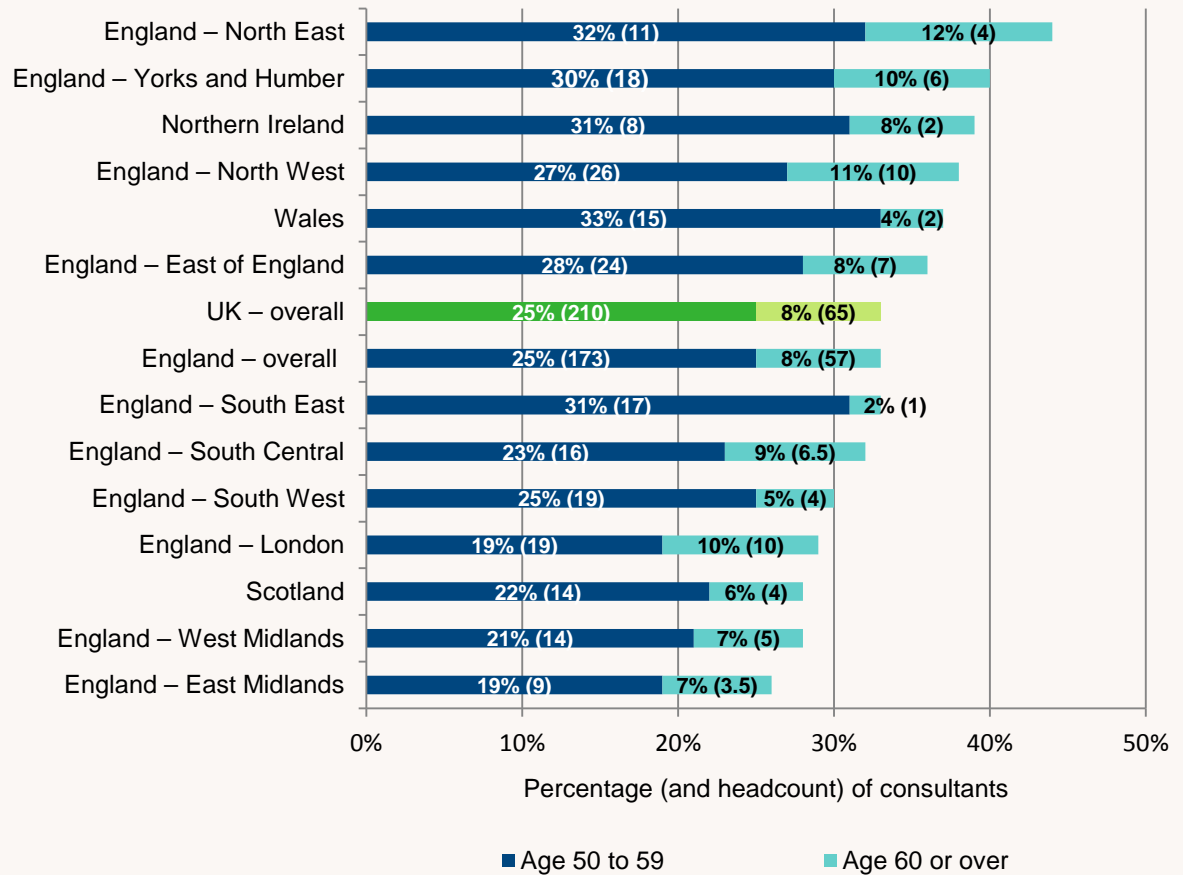
Table 10 shows the age profile of the UK consultant clinical oncology workforce. The number of younger consultants (aged 30–39) has decreased since 2010, whilst the 40–49 age group has expanded in the last five years. Notable differences exist

between UK countries and regions. Those aged 50 or over make up 44% of the consultant workforce in North East England compared to only 26% in the East Midlands.

Table 10. Headcount (and percentage) of consultant clinical oncologists in each age group, 2010–15

	2010	2014	2015
30–39	140 (20%)	121 (16%)	128 (15%)
40–49	295 (43%)	383 (50%)	410 (50%)
50–59	173 (25%)	187 (24%)	210 (25%)
60 and over	59 (9%)	61 (8%)	65 (8%)
Not known	20 (3%)	14 (2%)	14 (2%)

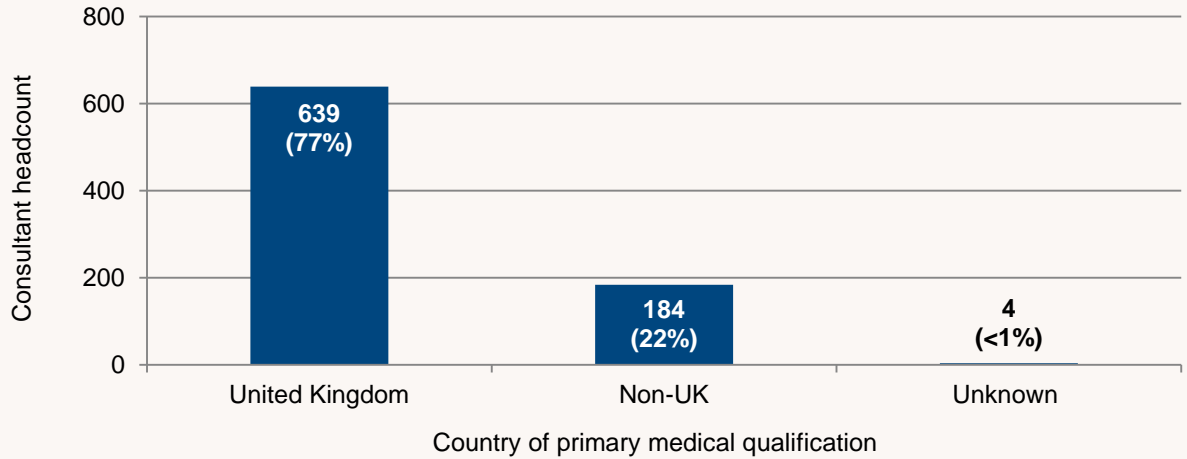
Figure 7. Percentage (and headcount) of consultants aged 50 to 59 and 60 and over by UK country and region, 2015



International medical graduates

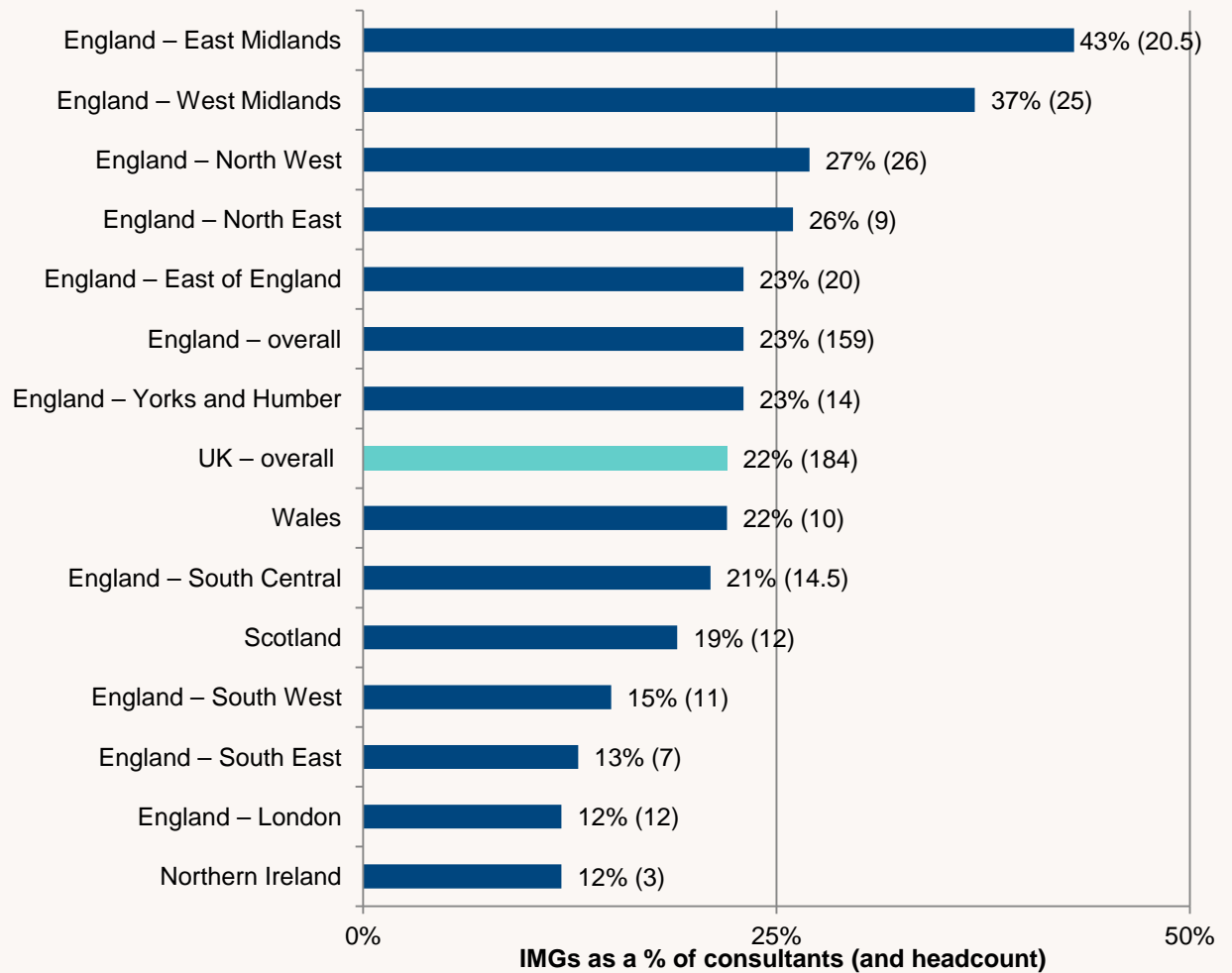
Clinical oncology in the UK is provided by an international workforce. Just over one in five consultants are international medical graduates (IMGs) from one of 35 countries. Nearly two-thirds

of IMGs gained their primary qualification from a medical school in Asia, and quarter from a European country. Figure 9 shows that the proportion of consultants who are IMGs varies by UK country and region. The East and West Midlands are particularly reliant on IMGs.

Figure 8. Country of primary medical qualification for consultant clinical oncologists, 2015**Table 11. International medical graduates working as UK consultants in 2015 – region of country of primary medical qualification, 2015**

Region	Headcount	Percentage of IMGs
Africa	16	9%
Americas	2	1%
Asia	116	63%
Europe	45	24%
Oceania	5	3%
Total IMGs	184	100%

Figure 9. International medical graduates as a percentage of the consultant clinical oncology workforce in each UK country and region, 2015



Full-time and less than full-time working

The 2015 census recorded 640 (77%) consultant clinical oncologists as working full time in the UK. Those working LTFT, that is, fewer than ten PAs per week, totalled 187 (23% of the consultant workforce).

Of the 187 who worked LTFT, 145 are women and 42 are men. Across all female consultants, 38%

worked LTFT compared to only 9% of their male colleagues. The extent of LTFT working in clinical oncology has been increasing since 2010 and now stands at 23% of the consultant workforce. However, due to the feminisation of the workforce (see above), the percentage of LTFT consultants in future years will probably continue to increase. This has implications for workforce planning as the LTFT rate affects the WTE consultant figure and overall capacity of the clinical oncology workforce.

Figure 10. Number of UK consultant clinical oncologists working LTFT by age group and gender, 2015

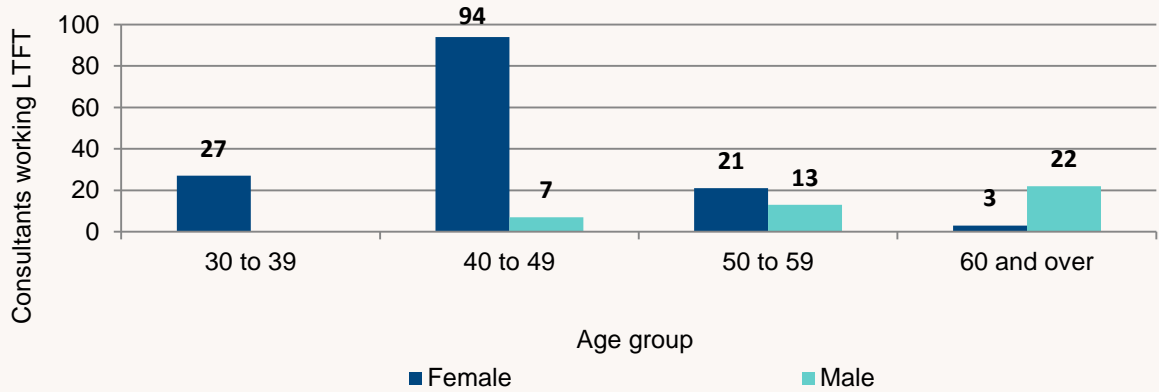
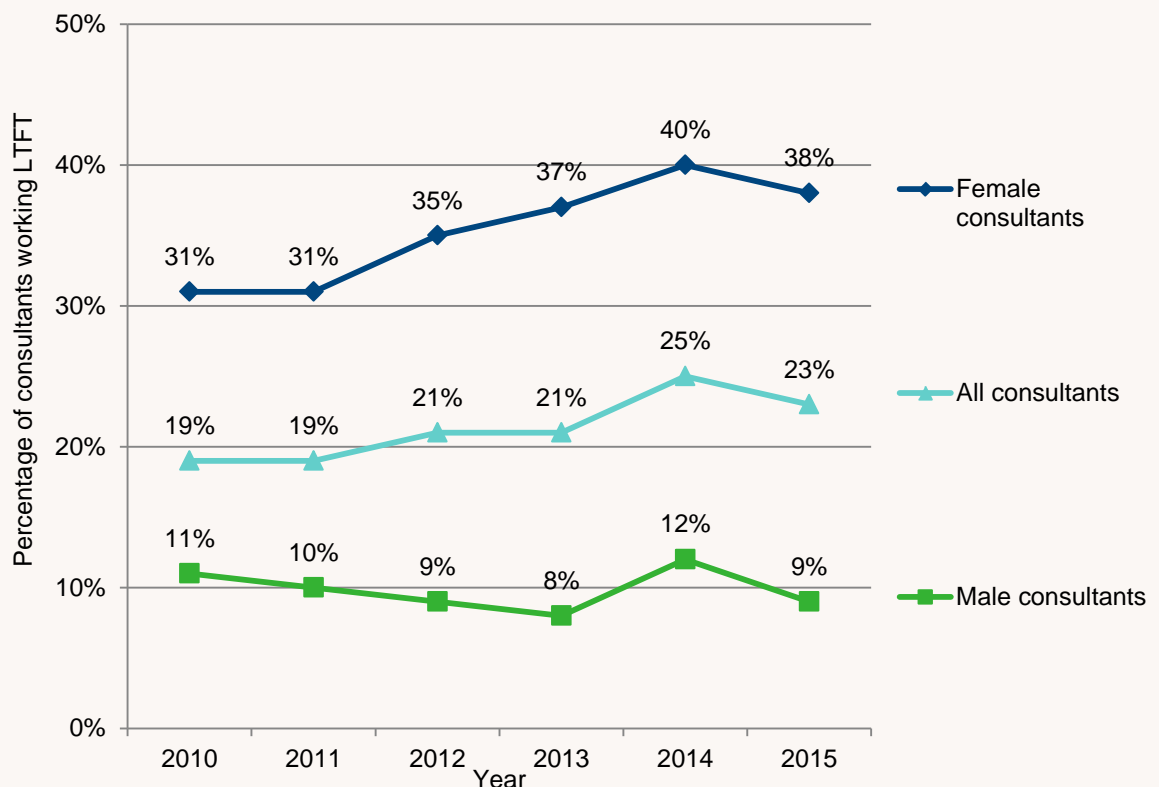


Figure 11. Percentage of UK consultant clinical oncologists working LTFT, 2010–15



Contracted programmed activities – full-time consultants

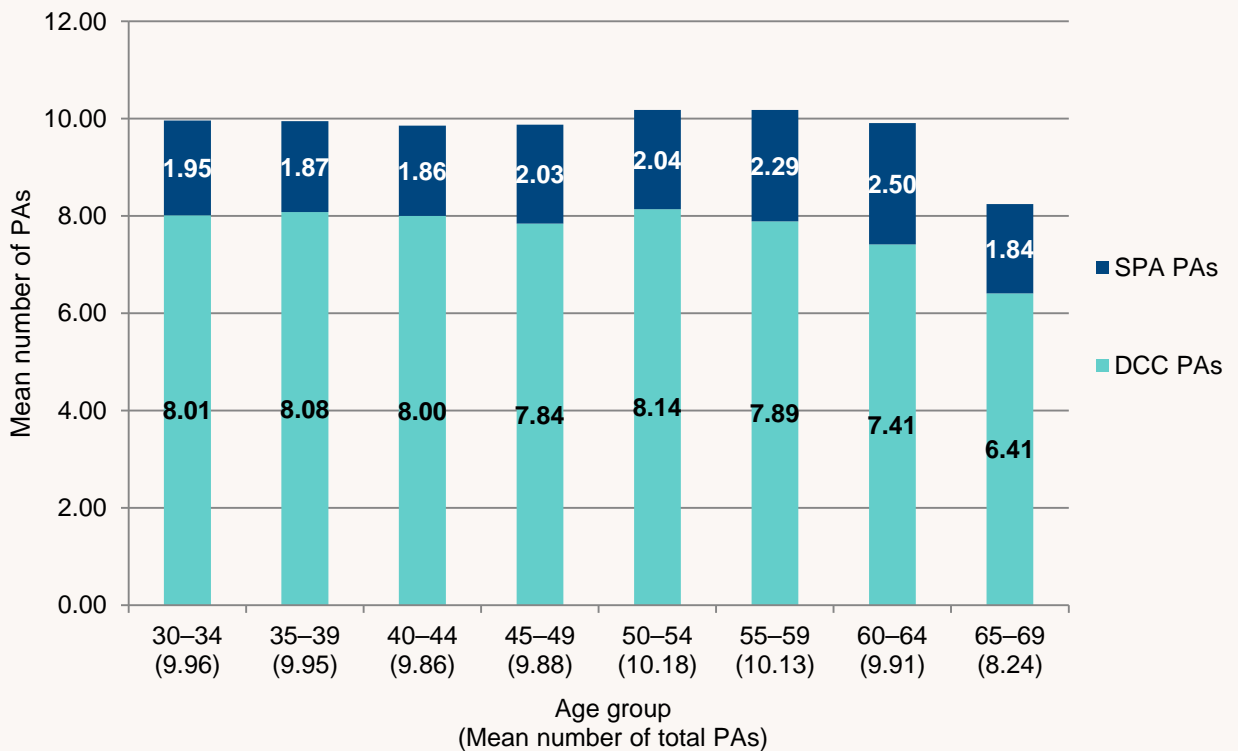
The census collects information on the number of contracted PAs worked per week for each full-time consultant clinical oncologist, subdivided into DCC and SPA. Table 12 shows the mean and median number of contracted PAs for the 640 full-time consultants working in 2015. Across the UK, the

mean and median was around 11 PAs. Half of all full-time consultants therefore worked 11 PAs or more, and 25% worked 12 PAs or more (see Table 5 above). The SPA component of this calculation does not include research PAs undertaken by consultants.

Table 12. Mean (and median) contracted DCC and SPA PAs per week for full-time consultant clinical oncologists by UK country, 2015

	DCCs	SPA PAs	Total DCC and SPA PAs
England	8.57 (8.50)	2.10 (2.00)	10.66 (10.50)
Northern Ireland	8.97 (9.38)	2.63 (1.88)	11.59 (11.75)
Scotland	8.97 (9.00)	2.15 (2.00)	11.12 (11.00)
Wales	7.49 (8.00)	2.77 (3.00)	10.26 (10.00)
UK – overall	8.55 (8.57)	2.16 (2.00)	10.70 (10.96)

Figure 12. Mean number of contracted DCC and SPA PAs per week for full-time and LTFT consultants by age group, 2015

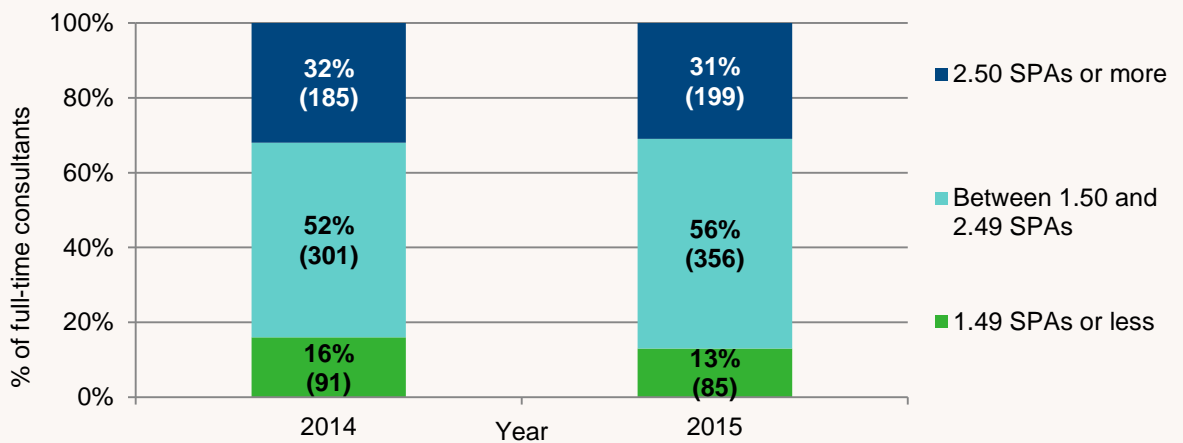


Supporting professional activities

The RCR recommends the minimum number of SPAs to be 1.5, and ideally 2.5, SPAs per week.⁷ This enables individual consultants to comply with clinical governance and revalidation requirements (including mandatory training, audit, continuing professional development and appraisal). The 2015

census identified 13% of full-time consultants not having 1.5 SPAs in their job plans, and only 31% had job plans that met the ideal of having 2.5 SPAs. The SPA figures shown in Figure 13 do not include research PAs.

Figure 13. Percentage (and headcount) of full-time consultants with 1.49 or less, 1.50 to 2.49 and 2.50 or more SPAs, 2014 and 2015



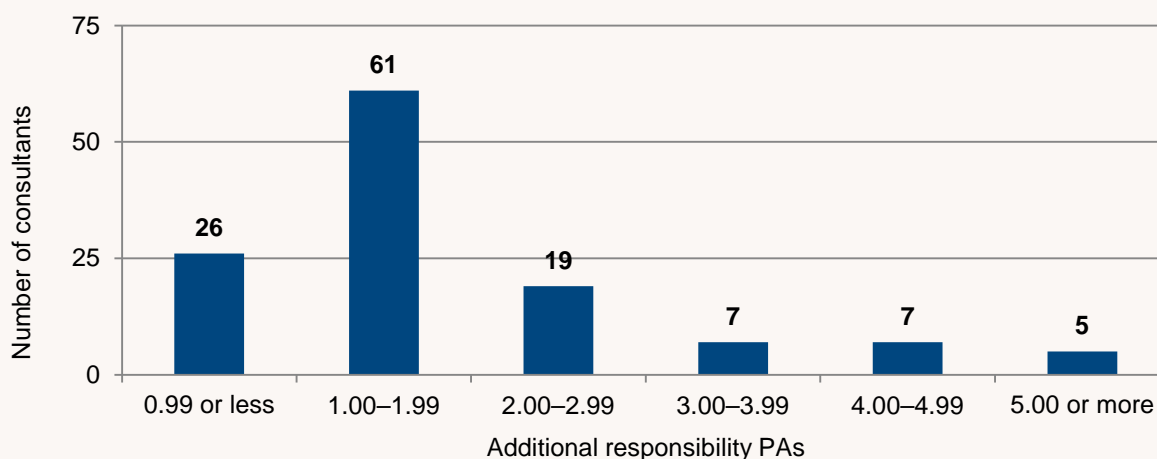
Research activities

Just under 10% of full-time consultant clinical oncologists (63 out of 640) were recorded in the 2015 census as having research PAs in their job plans. This figure underplays the extent of clinical research happening in the specialty. Nearly all clinical oncologists are active in clinical trials, within both systemic therapy and radiotherapy practice. Many also undertake research in the basic and applied cancer sciences and in developing new radiotherapeutic techniques and systemic therapies. The challenging nature of cancer

treatment means that contributing to research is integral to patient management.

Additional responsibilities

Additional responsibilities are those not undertaken by the generality of consultants. These could include (but are not limited to) work done as a clinical director, lead clinician, audit lead or clinical tutor, or when serving on critical incident, ethics or drugs and therapeutics committees. The 2015 census recorded 125 (15%) of consultant clinical oncologists in the UK as having AR PAs.

Figure 14. Additional responsibility PAs held by consultant clinical oncologists in the UK, 2015

Predominant workload

The proportion of consultant clinical oncologists whose workload encompasses a balance of both radiotherapy and chemotherapy has increased

from 79% in 2010 to 85% in 2015. This has implications for continuing professional development and allocation of SPAs in job plans, to allow consultants to stay up to date in both these advancing fields of medical practice.

Table 13. Predominant workload of consultants – headcount (and percentage of workforce), 2010–15

Workload	2010	2014	2015
Chemotherapy	9 (1%)	11 (1%)	10 (1%)
Radiotherapy	137 (20%)	105 (14%)	117 (14%)
Balance of both	541 (79%)	655 (85%)	700 (85%)

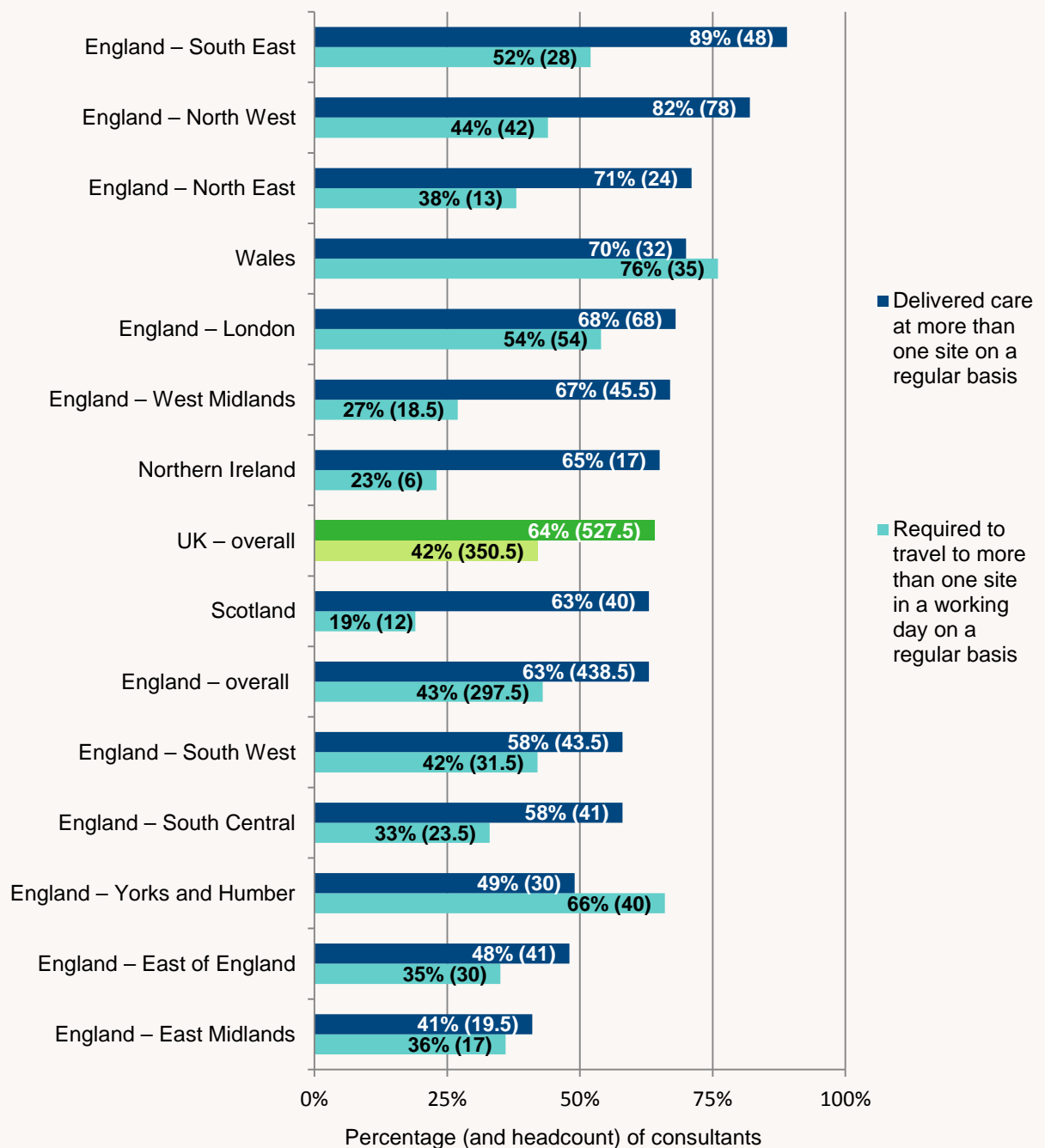
Cross-site working

The census has found that the percentage of UK consultants required to deliver care at more than one hospital site has increased from 60% in 2014 to 64% in 2015. Of these, 42% (the same as in 2014) do so with a split day, travelling to more than one site in a working day on a regular basis. Cross-site working was much more prevalent in South East

and North West England, but across the UK delivering cancer care in this way is generally not unusual for consultant clinical oncologists. As such, job plans should take into account the time consultants spend on travelling from their main base to other sites, and the additional time it takes to travel from home to a site other than their main place of work. The travelling time in both instances should count as working time.⁷

Table 14. Cross-site working patterns by UK consultant clinical oncologists, 2014 and 2015

	2014 Number of consultants	2015 Number of consultants
Employed at more than one trust	164.5 (22%)	163 (20%)
Delivered care at more than one site on a regular basis	457 (60%)	527.5 (64%)
Required to travel to more than one site in a working day on a regular basis	316 (42%)	350.5 (42%)

Figure 15. Percentage (and headcount) of consultants in each UK country and region delivering care and travelling to more than one site on regular basis

Tumour site specialisation

The RCR recommends that a consultant should normally undertake no more than two broad areas of tumour site specialist practice: it is unlikely that a clinician can remain up to date across too wide an area of practice.⁷ The rapidly emerging evidence base in clinical practice, together with operational commitments such as multidisciplinary team meetings and cross-site working, make it increasingly difficult for consultants with three or more site specialties to maintain adequate

continuing professional development in all areas. Despite this, 36% of UK consultants have three or more site specialties.

Table 16 shows the tumour site specialisation information collected through the census. The census allows for more than one site specialty to be entered against each consultant. Most site specialties have seen some increase in number of consultants since 2014. Acute oncology, head and neck and thyroid are site specialties that have seen the largest increases in terms of percentage gains.

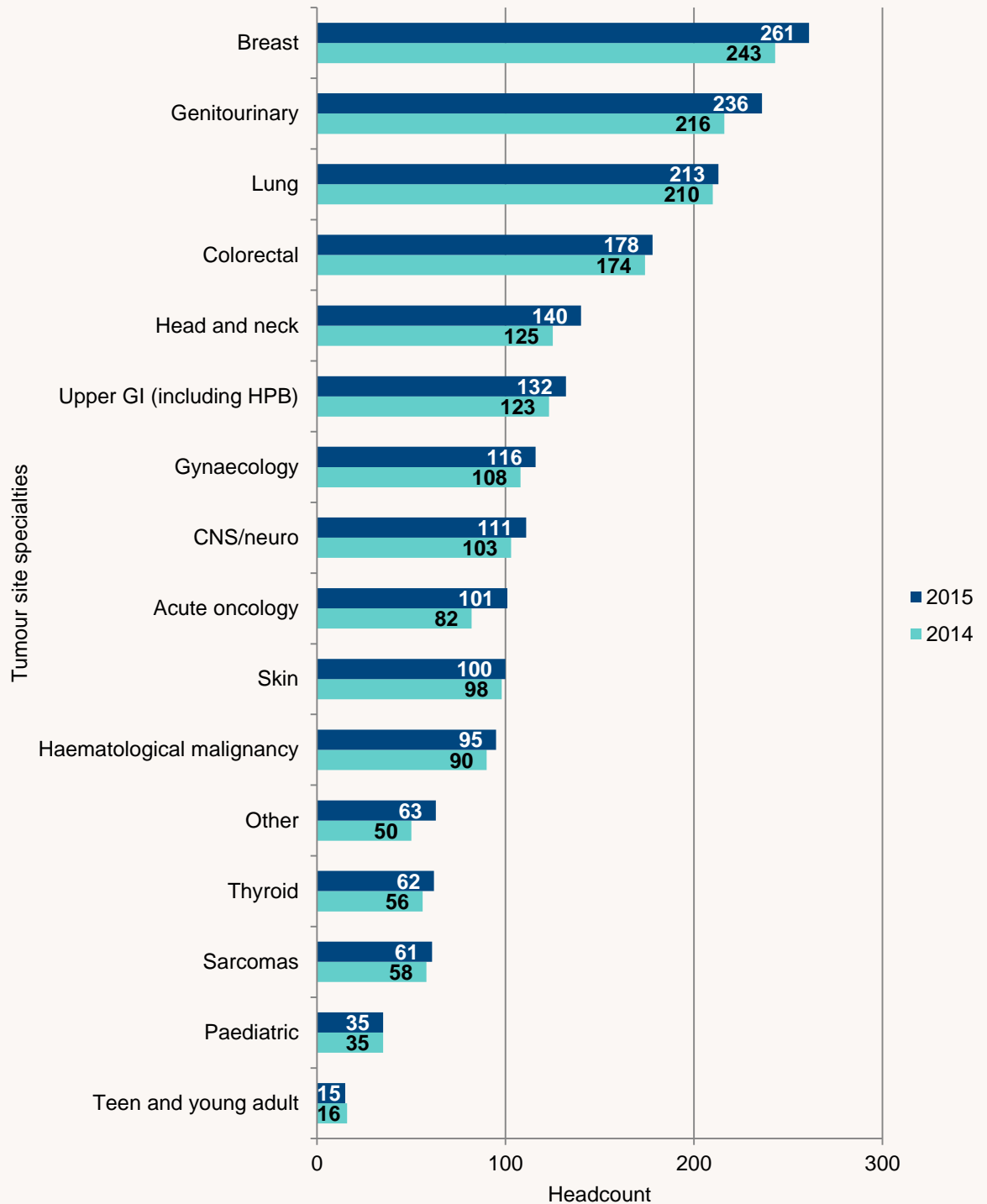
Table 15. Number of tumour site specialties per consultant clinical oncologist in the UK, 2014 and 2015

Number of site specialties	2014 Number of consultants	2015 Number of consultants
One	136 (18%)	151 (18%)
Two	354 (46%)	374 (45%)
Three	195 (25%)	225 (27%)
Four or more	81 (11%)	77 (9%)

Table 16. Consultant tumour site specialties (multi-response) by UK country

	England	Northern Ireland	Scotland	Wales	UK total – 2015	UK one- year % change (2014–15)
Acute oncology	99	0	2	0	101	23%
Breast	224	10	15	12	261	7%
Central nervous system/neuro	95	2	8	6	111	8%
Colorectal	149	7	14	8	178	2%
Genitourinary	204	11	13	8	236	9%
Gynaecology	98	2	11	5	116	7%
Haematological malignancy	81	2	7	5	95	6%
Head and neck	113	5	13	9	140	12%
Lung	177	5	19	12	213	1%
Paediatric	29	2	3	1	35	0%
Sarcomas	51	2	4	4	61	5%
Skin	88	3	6	3	100	2%
Teen and young adult	12	3	0	0	15	–6%
Thyroid	55	1	4	2	62	11%
Upper gastrointestinal (including hepatopancreatobiliary [HPB])	108	4	9	11	132	7%
Other	54	2	1	6	63	26%

Figure 16. UK consultant site specialties (multi-response), 2014 and 2015



5. Consultant workforce attrition

Consultants leaving and retiring from the NHS

Respondents to the census provided details of 11 consultant clinical oncologists who had left the NHS between 30 September 2014 and 1 October 2015, including reasons for leaving. In addition to those recorded as leaving, a further

14 consultants were identified in the 2014 census but not in the 2015 census. It is presumed that these consultants have left the NHS and that for those aged 60 or over it was due to retirement. In total, 25 consultants left the NHS, representing just over 3% of the 2014 consultant clinical oncology workforce.

Table 17. Number of consultant clinical oncologists and reasons for leaving the NHS workforce

Reasons for leaving	Number of consultants
Retired or presumed retired	14
Resigned from NHS	3
Other or unknown	8
Total	25

Table 18. Mean and median ages of consultants at retirement, 2010–15

	2010	2011	2012	2013	2014	2015
Number retiring	17*	7	13	7	7	14
Mean age	60	60	63	62	61	64
Median age	61	60	63	60	63	64
Range (youngest–oldest)	50–66	57–63	60–71	57–68	52–66	60–68

* Ages unknown for three consultants.

Estimated future retirement rates

Estimated retirements – the next five years (2015–20)

The highest and lowest mean or median ages of retirement found between 2010 and 2015 can be used as the basis for estimating future retirement rates of consultant clinical oncologists who are currently practising in the NHS. Figure 17 shows 80 consultants in the UK retiring between 2015 and 2020 based on a retirement age of 64, and 146 if retiring aged 60. These figures represent 10% and 18% of the current UK workforce. There are regions

where the extent of upcoming retirements is of particular concern. Most noticeable is North East England, where up to a quarter of current consultants are expected to retire in the next five years. Concerns also exist for some tumour site specialties. Around a quarter of consultants with tumour expertise in haematological malignancy, skin or breast are expected to leave the workforce by 2020 if they retire upon reaching 60 years of age.

Figure 17. Estimated percentage (and headcount) of consultant clinical oncologists retiring between 2015 and 2020 in each UK country and region

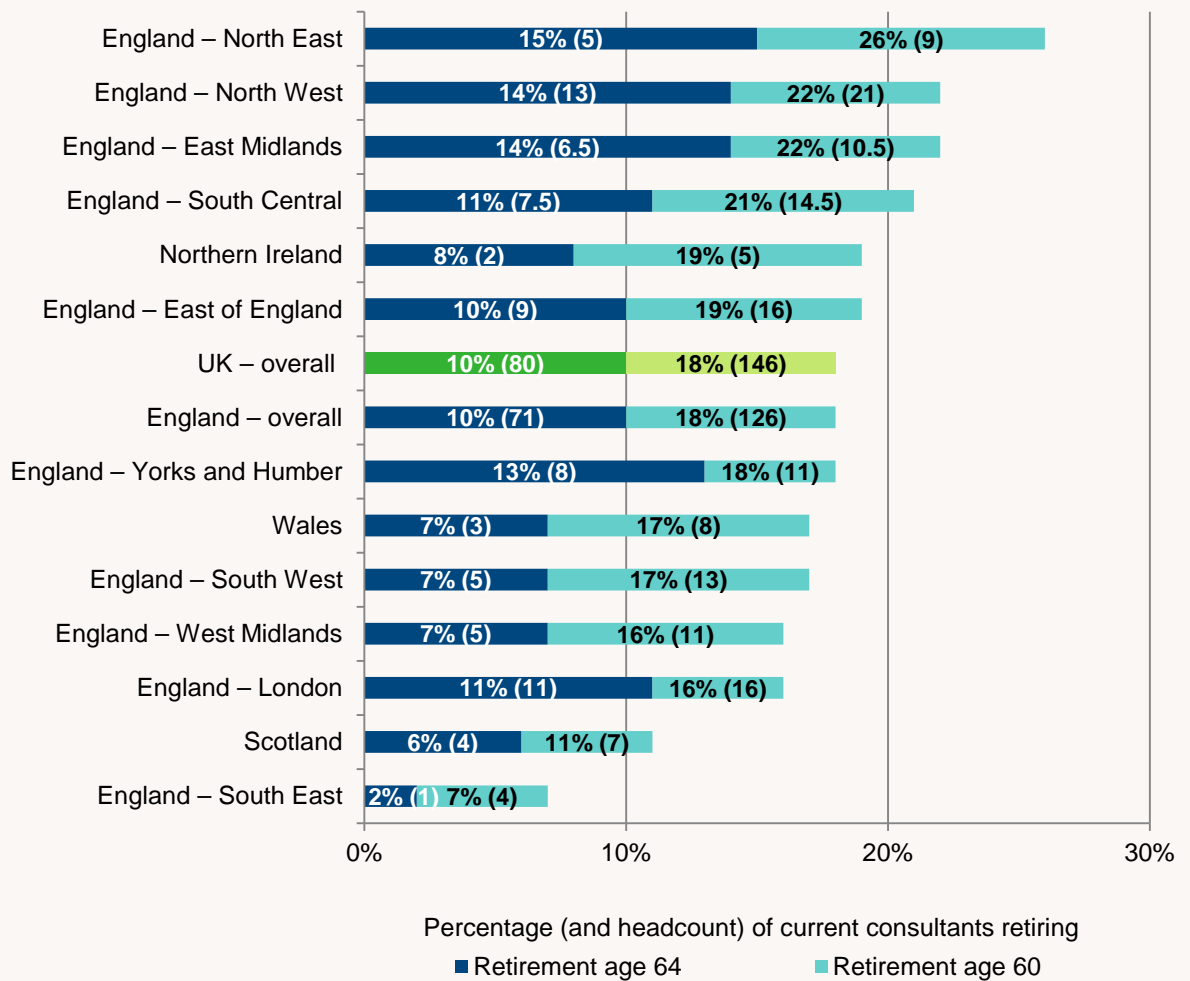
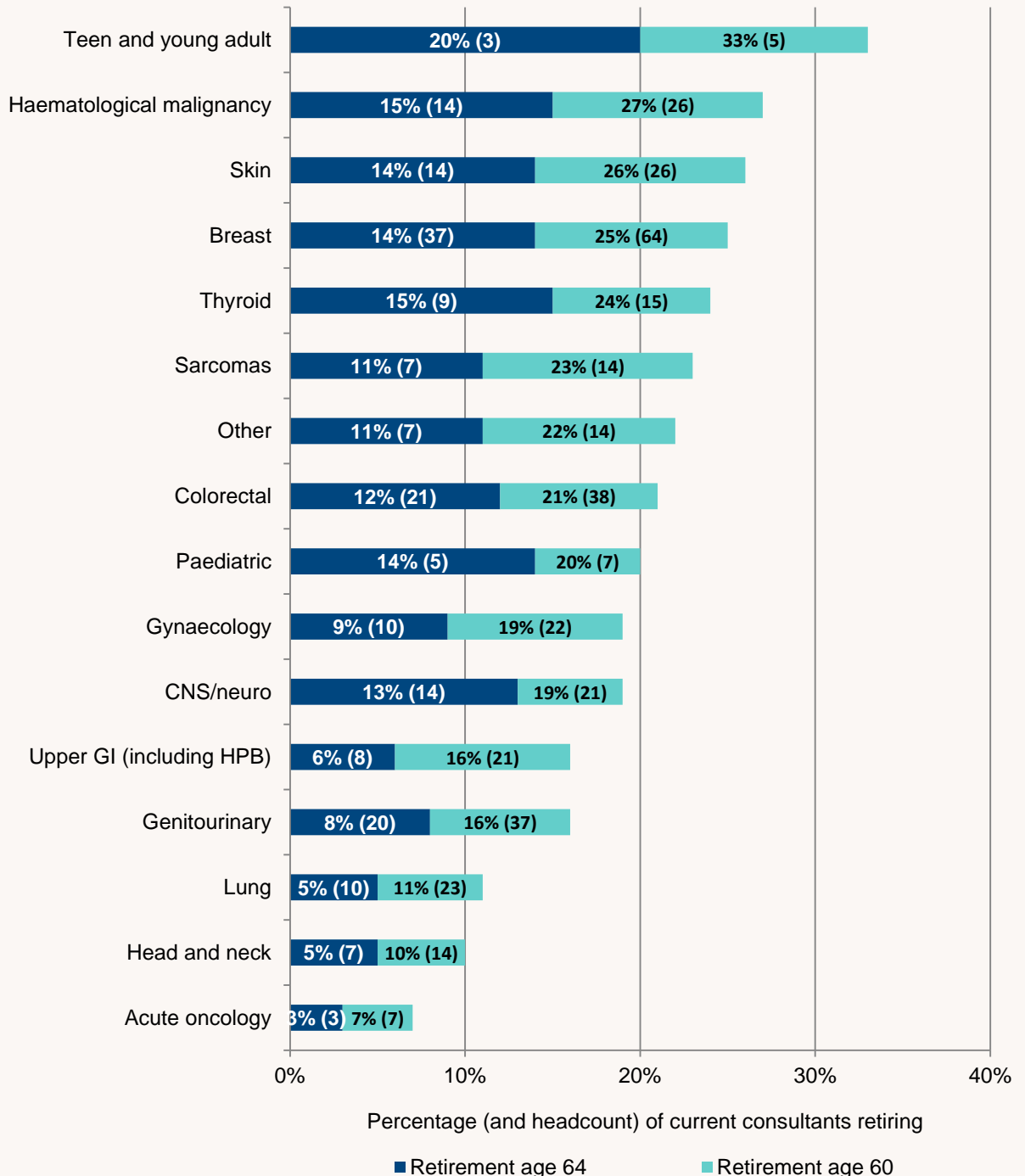


Figure 18. Estimated percentage (and headcount) of UK consultant clinical oncologists retiring between 2015 and 2020 by tumour site speciality



Estimated retirements – next 10 and 15 years (2015–25 and 2015–30)

It is estimated that around a third of the current UK consultant clinical oncology workforce could retire within the next ten years (2015–25). Within the next

15 years (2015–30) just over a half of the current UK workforce could retire. There are variations by UK country and regions in expected retirement rates over the next ten and 15 years, and this issue is of greater concern in some places than others.

Table 19. Percentage (and headcount) of the current consultant workforce expected to retire in each UK country and region in the next ten and 15 years

	Next 10 years: 2015–25		Next 15 years: 2015–30	
	Age 64	Age 60	Age 64	Age 60
England – East Midlands	24% (11.5)	26% (12.5)	26% (12.5)	41% (19.5)
England – East of England	26% (22)	36% (31)	41% (35)	62% (53)
England – London	18% (18)	29% (29)	36% (36)	64% (64)
England – North East	32% (11)	44% (15)	50% (17)	59% (20)
England – North West	24% (23)	38% (36)	41% (39)	53% (50)
England – South Central	25% (17.5)	32% (22.5)	36% (25.5)	60% (42.5)
England – South East	15% (8)	33% (18)	33% (18)	50% (27)
England – South West	19% (14)	30% (23)	32% (24)	52% (39.5)
England – West Midlands	18% (12)	28% (19)	31% (21)	47% (31.5)
England – Yorks and Humber	23% (14)	39% (24)	41% (25)	54% (33)
England – overall	22% (151)	33% (230)	37% (253)	55% (380)
Northern Ireland	19% (5)	38% (10)	42% (11)	50% (13)
Scotland	13% (8)	28% (18)	30% (19)	53% (34)
Wales	24% (11)	37% (17)	39% (18)	63% (29)
UK – overall	21% (175)	33% (275)	36% (301)	55% (456)

6. Unfilled clinical oncology posts

Vacant posts in clinical oncology

In addition to clinical oncologists in post, the census also captured information on unfilled posts in cancer centres as of 1 October 2015. There were 21 vacancies for consultants and six in other non-training grades (associate specialist, specialty

doctor or trust grade). Of the 21 unfilled consultant posts, over 28% have been vacant for 12 months or longer, and in 43% of cases, the recruitment process resulted in a failure to appoint.

Table 20. Number of unfilled posts in clinical oncology by UK country, 2015

	Consultant grade	Other non-training grades ^a	Total
England	15	6	21
Northern Ireland	0	0	0
Scotland	3	0	3
Wales	3	0	3
UK – overall	21	6	27

^a Other non-training grades – specialty doctor and trust grade.

Figure 19. Status of unfilled consultant clinical oncologist posts in the UK, 2015

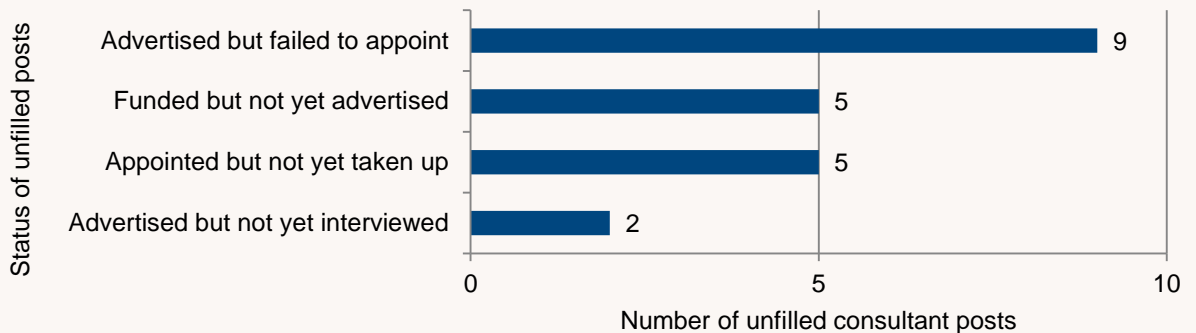
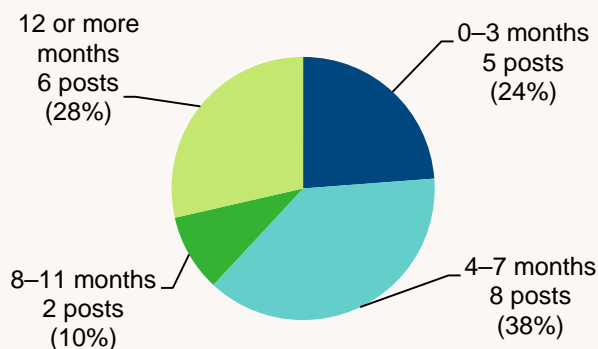


Figure 20. Number (and percentage) of unfilled consultant clinical oncologist posts left vacant by time period in the UK, 2015



Recruitment difficulties

Failure to appoint when clinical oncologist vacancies have been advertised is due to candidates taking up another post, no suitable candidates being identified for interview or appointment, or no candidates applying in the first place. Some heads of service highlighted the difficulties they have found in recruiting new members of staff:

'Difficulty in recruiting clinical oncology consultants to replace a retirement [has] resulted in converting a clinical oncology post to medical oncology consultant post.'

'We have found it difficult to recruit consultant staff even for subspecialties, which are otherwise quite attractive, mainly due to geographical location. It can be addressed if we receive higher grade trainees who could then experience potential life as a consultant within the cancer centre.'

'We continue to rely on locum appointments, but there now appear to be a lack of suitable candidates.'

The negative impact on service planning and delivery due to these recruitment problems was also highlighted:

'We have three posts out to advert for our planned expansion with the opening of a new LinAc (from two to three) which will increase our capacity greatly. We did not recruit on advertising last year. We had no applications this time and the closing date is in two weeks. I am concerned that we will not recruit.'

'Non-recruitment in neighbouring trust has a significant effect on our local workload. In essence, we have to support them very heavily.'

'Increasing difficulty in recruitment at registrar level means that consultants now having to carry the on-call pager 9–5 and dealing with ward cover and covering colleagues on leave. Most clinics are now cancelled by consultants when on call and this impacts on waiting times targets.'

Difficulties were also experienced when trying to recruit non-consultant staff including trainee clinical oncologists:

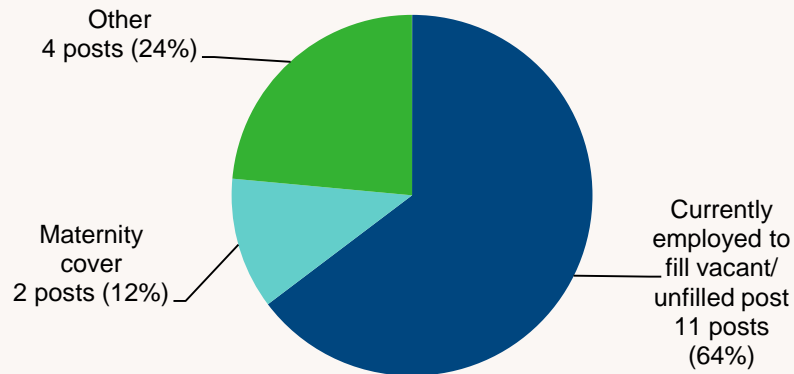
'Recruitment has been very challenging at middle grade and trust grade level, often with no suitable applicants and multiple advertisements before someone is recruited. This is not helped by additional deanery vacancies.'

'We certainly need increased number of trainees. We are working with staff-grade locums who are changing every few weeks.'

'Chronic shortfall in middle grade and long-term junior support. A business case required every six months for trust grade support – [there is] no long-term plan.'

Locums

Through the census, 17 consultant clinical oncologists were identified as being employed as a locum as of 1 October 2015. The main reason for these locum posts was to fill a vacant post. Just under half (48%) of these consultants have been in their locum posts for six months or longer, and for ten of the 17 posts the expected duration of the locum cover was ten months or longer. Thirteen of the locums recorded by the census have not previously been in a substantive consultant post.

Figure 21. Number of, and reasons for, consultant locum posts**Table 21. Length and expected duration of locum posts**

	Number of locum positions	%
Length of locum period – as of 1 October 2015		
1–3 months	6	35%
4–6 months	3	18%
7–9 months	1	6%
10–12 months	3	18%
More than 12 months	4	24%
Expected duration – from 1 October 2015		
1–3 months	2	12%
4–6 months	3	18%
7–9 months	2	12%
10–12 months	6	35%
More than 12 months	4	24%

7. Delivery of cancer services

Routine opening hours of cancer centres

The census asked cancer centres for details of their routine (non-emergency) radiotherapy and chemotherapy service opening hours. Most UK cancer centres are routinely open for between eight and ten hours on weekdays for the delivery of radiotherapy and chemotherapy. Around one in five centres is also open on Saturdays, and one in ten on Sundays. The majority of centres

are, therefore, not open at the weekends or for more than ten hours on weekdays. This is probably due to the challenges faced by centres in providing evening and weekend services to the same standard as those during normal working hours. To do this would require all staff groups (including clinical oncologists, physicists, specialist nurses, etc) normally available during the working week to be available outside of normal hours.

Table 22. Radiotherapy services routinely open on weekdays and weekends by UK country, 2015

	England	Northern Ireland	Scotland	Wales	UK – overall
Number of centres	52	2	5	3	62 (100%)
Weekdays					
Less than eight hours	1	0	1	0	2 (3%)
Eight to ten hours	36	1	4	2	43 (69%)
More than ten hours	14	0	0	1	15 (24%)
Varies depending on weekdays	1	0	0	0	1 (2%)
Not open	0	1	0	0	1 (2%)
Saturdays					
Less than eight hours	10	0	1	1	12 (19%)
Eight to ten hours	1	0	0	0	1 (2%)
More than ten hours	0	0	0	0	0 (0%)
Not open	41	2	4	2	49 (79%)
Sundays					
Less than eight hours	6	0	1	0	7 (11%)
Eight to ten hours	0	0	0	0	0 (0%)
More than ten hours	0	0	0	0	0 (0%)
Not open	46	2	4	3	55 (89%)

Figure 22. Percentage (and headcount) of cancer centres in the UK providing weekend radiotherapy services, 2014 and 2015

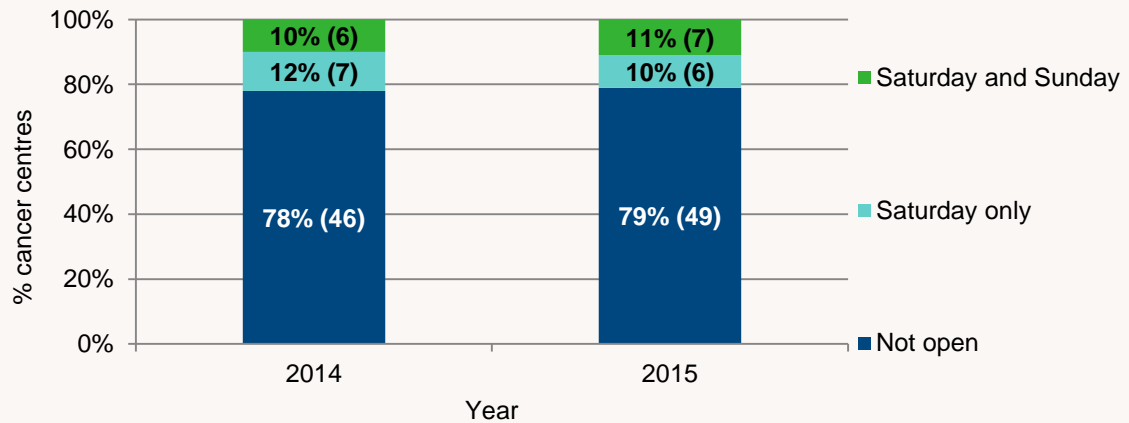
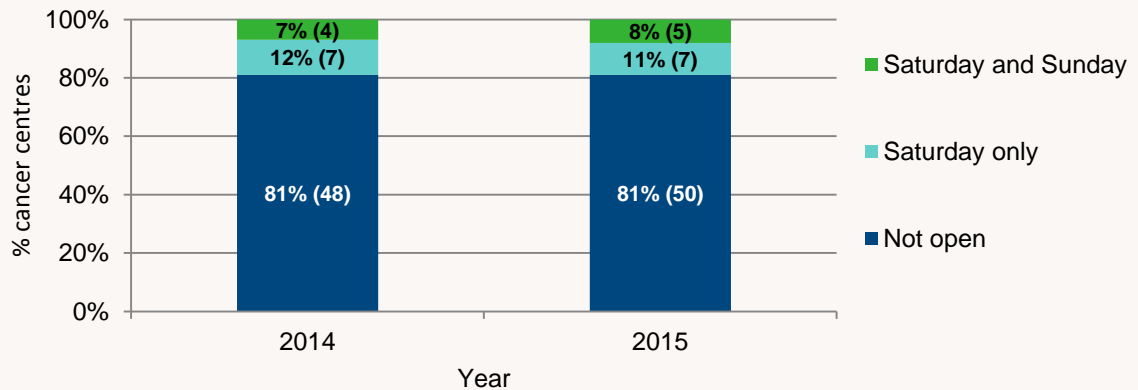


Table 23. Chemotherapy services routinely open on weekdays and weekends by UK country, 2015

	England	Northern Ireland	Scotland	Wales	UK – overall
Number of centres	52	2	5	3	62 (100%)
Weekdays					
Less than eight hours	1	0	0	0	1 (2%)
Eight to ten hours	34	1	3	3	41 (66%)
More than ten hours	16	0	1	0	17 (27%)
Varies depending on weekdays	1	1	1	0	3 (5%)
Not open	0	0	0	0	0 (0%)
Saturdays					
Less than eight hours	5	0	0	1	6 (10%)
Eight to ten	3	0	1	0	4 (6%)
More than ten hours	2	0	0	0	2 (3%)
Not open	42	2	4	2	50 (81%)
Sundays					
Less than eight hours	2	0	0	0	2 (3%)
Eight to ten	0	0	1	0	1 (2%)
More than ten hours	2	0	0	0	2 (3%)
Not open	48	2	4	3	57 (92%)

Figure 23. Percentage (and headcount) of cancer centres in the UK providing weekend chemotherapy services, 2014 and 2015



Extension of routine opening hours

Several census respondents highlighted occasions when radiotherapy and chemotherapy services are provided outside of normal working hours, the reasons for this and the difficulties encountered in extending routine opening hours:

- 'As most of the radiographers are female, many with family responsibilities, we previously found getting therapy radiographers to work extended hours, when we had funding for CHART, was very difficult, and I suspect the same issue would apply in trying to introduce routine weekend working. We do provide an emergency radiotherapy service as required at weekends.'
- 'On weeks when a bank holiday falls, a weekend day is sometimes substituted to ensure continuity of treatment.'
- 'Only emergency chemotherapy is offered at weekends – but is rarely done, and is ward- not OP-based. We open at weekends for emergencies, and for routine category A patients on Saturdays to cover bank holidays and unscheduled machine downtime.'
- 'Routine weekend (ie Saturday working) for RT is to ensure continuity for servicing, unexpected down time and bank holidays – so it is not every week.'
- 'Saturday service for bisphosphonates and blood only.'
- 'The LinAc currently beyond its lifespan will be decommissioned later this year and removed from its bunker to house the new LinAc. To absorb the activity, the existing two LinAc will work extended days up to 12 hours.'

- 'Occasionally we work weekends to cover for breakdown and missed treatments and continuous hyperfractionated accelerated radiotherapy (CHART).'
- 'We often have to open longer if there is machine breakdown.'

Coping with increasing demand

Census respondents highlighted the issue of and how they coped with increasing demand on services:

- 'The treatment centre has opened recently on a Saturday morning to manage the increasing demand.'
- 'The workload has increased. We are now working an extended day (8 am to 6 pm). It was 9 am to 5 pm prior to that.'
- 'Routine working hours is very much limited by the PFI contract which stipulates Monday–Friday, 9 am to 5 pm, though we have negotiated additional hours to support demand, and also to support our planned LinAc replacement programme in 2018.'
- 'As we have now commenced a major equipment replacement programme we have been working 12-hour days Monday to Friday since January 2016 and will continue in this pattern until Autumn 2017.'
- 'Increasing demand managed through combination of outsourcing supportive therapies to medical day unit, and local hospitals, and delivery of chemotherapy/systemic anti-cancer therapy (SACT) dataset on the mobile

chemotherapy unit as well as outsourcing some treatments to [named company].’

- ‘Demand exceeding capacity in two of three chemotherapy suites. We are looking at plans to expand accommodation and nursing and pharmacy staffing. The chemotherapy suite is currently under-resourced. [We are] expanding capacity as new oncologists arrive.

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6. Federation of the Royal Colleges of Physicians of the UK. *Census of consultant physicians and higher specialty trainees in the UK 2014–15*. London: RCP, 2016.
7. The Royal College of Radiologists. *Guide to job planning in clinical oncology*, 3rd edn. London: The Royal College of Radiologists, 2015.
8. The Royal College of Radiologists. *Clinical oncology UK workforce census 2014 report*. London: The Royal College of Radiologists, 2015.

Appendix 1. 2015 census questions

1. Your organisation – details

- Workforce lead full name
- Hospital name/cancer centre
- Trust name
- Contact details

2. Staff details

Please update the data in the table below to provide details of all consultant and staff-grade clinical oncologists employed in a substantive post in your cancer centre, as of 1 October 2015. Please include consultants, associate specialists, specialty doctors, trust grades, locums and clinical assistants. Please include those on long-term leave (eg maternity or sick leave). Please do not include trainees. We would additionally like to capture information on PA time dedicated to both research and training for those in academic or NHS/academic posts. Please enter contracted PAs for all data sought. On completion of each entry please tick the box marked 'Accurate and Complete as of 1 October 2015'. This will enable you to proceed to the next page.

- Forename
- Surname
- Grade
 - Associate specialist
 - Clinical assistant
 - Consultant
 - Specialty doctor
 - Trust grade
 - Other
- Type of post
 - Academic
 - NHS
 - NHS and academic
 - Other
- Contracted PAs (consultants)
 - DCC PAs
 - SPA PAs
 - Additional responsibility PAs
 - Research PAs
 - Academic PAs
- Predominant workload
 - Chemotherapy
 - Radiotherapy
 - Both

- Site specialties
 - Acute oncology
 - Breast
 - CNS/neuro
 - Colorectal
 - Genitourinary
 - Gynaecology
 - Haematological malignancy
 - Head and neck
 - Lung
 - Paediatric
 - Sarcomas
 - Skin
 - Teen and young adult
 - Thyroid
 - Upper GI (including HPB)
 - Other
- Employed as a locum
 - Obtained primary medical qualification in the UK
 - Completed a UK oncology training programme
 - Previously been in a substantive consultant post
 - Period employed as locum, as at 1 October 2015
 - Expected duration of locum period from 1 October 2015
 - Reason for locum position
- Cross-site working
 - Employed at more than one trust
 - Delivered care at more than one site on a regular basis in the last 12 months
- Left since October 2014
- Reason for leaving

3. Unfilled posts

Please enter details below of all funded unfilled substantive clinical oncology posts at your cancer centre, including satellite centres, as of 1 October 2015. Please enter posts even if subsequently suspended or lost, or currently filled by a locum.

- Grade
- Employment type (part or full time)
- Unfilled post status
- Unfilled period (to nearest month)
- Locum filled?
- Please make any additional comments relating to recruitment from 1 October 2014 to 1 October 2015

4. Medical oncologists

Please indicate in the boxes below the number of full-time and part-time medical oncologists employed by your cancer centre as of 1 October 2015.

- Full-time
- Part-time (<10 PAs)

5. Routine opening hours of cancer centres

All cancer centres provided information on their routine working hours for the first time in 2014. To build on this data, we would like to collect this information again for 2015.

- For the month of September 2015, please enter the routine (non-emergency) radiotherapy AND chemotherapy service opening hours at your main centre.
- Would you say the routine opening hours you have entered for radiotherapy AND chemotherapy for September 2015 represent a typical month for the year to date?
- If you have any additional comments on routine working hours, please note them below.
- If the routine opening hours entered for September 2015 for radiotherapy and/or chemotherapy are not representative of a typical month, please use the space below to explain why. Please also use the space provided below to enter any further comments you wish to make regarding routine and extended hours working at your centre.

6. Final comments

Finally, please use the space provided below to enter any further workforce details you feel are relevant to your census submission and/or to provide feedback to the College regarding the census.

Appendix 2. 2015 census completions

Thank you to the following individuals for completing the 2015 census on behalf of their cancer centres.

Aberdeen Royal Infirmary	Dr Leslie Samuel
Addenbrooke's Hospital, Cambridge	Dr Richard Benson
Altnagelvin Hospital, Londonderry	Dr David Stewart
Basingstoke and North Hampshire Hospital	Dr Sandra Tinkler
Beatson West of Scotland Cancer Centre	Dr David Dodds
Belfast City Hospital	Professor Joe O'Sullivan
Bristol Haematology and Oncology Centre	Dr Matthew Beasley
Castle Hill Hospital, East Riding of Yorkshire	Dr Rajarshi Roy
Cheltenham General Hospital	Dr Warren Grant
Colchester General Hospital	Dr Dakshinamoorthy Muthukumar
Cumberland Infirmary	Mr Jim Methven
Derriford Hospital, Plymouth	Dr Sarah Pascoe
Dorset Cancer Centre	Dr Maxine Flubacher
Edinburgh Cancer Centre	Dr Carolyn Bedi
Glan Clwyd Hospital, Rhyl	Dr Win Soe
Guy's and St Thomas' Cancer Centre, London	Dr Shahreen Ahmad
Imperial College Cancer Centre, London	Dr Danielle Power
Ipswich Hospital	Dr Christopher Scrase
Kent Oncology Centre	Dr Sharon Beesley
Leeds Cancer Centre	Dr Rachel Cooper
Leicester Royal Infirmary	Dr David Peel
Lincoln County Hospital	Dr Miguel Panades
Mount Vernon Cancer Centre, Hertfordshire	Dr Mark Harrison
Musgrove Park Hospital, Taunton	Dr Petra Jankowska
New Cross Hospital, Wolverhampton	Dr Rozenn Allerton
Ninewells Hospital and Medical School, Dundee	Dr Richard Casasola
Norfolk and Norwich University Hospital	Dr Thomas Roques
North Middlesex University Hospital	Dr Girija Anand
Northampton General Hospital	Dr Guy Faust
Northern Centre for Cancer Care, Newcastle upon Tyne	Dr Ian Pedley
Nottingham University Hospital, City Hospital Campus	Dr Daniel Saunders
Oxford Cancer Centre, Churchill Hospital	Dr Claire Blesing
Peterborough City Hospital	Dr Catherine Jephcott
Portsmouth Oncology Centre, Queen Alexandra's Hospital	Dr Daniel Dubois
Queen Elizabeth Hospital, Birmingham	Dr Daniel Ford
Queens Hospital, Romford	Dr Sherif Raouf
Raigmore Hospital, Inverness	Dr Carol MacGregor
Royal Berkshire Hospital	Dr James Gildersleve
Royal Cornwall Hospital	Dr John McGrane
Royal Derby Hospital	Dr Rengarajan Vijayan
Royal Devon and Exeter Hospital	Dr Elizabeth Toy
Royal Free Hospital, London	Dr Katharine Pigott
Royal Marsden Hospital, London	Dr Imogen Locke
Royal Preston Hospital	Dr Geraldine Skailles
Royal Shrewsbury Hospital	Dr Sheena Khanduri
Royal Surrey County Hospital	Ms Lauren Webb
Royal Sussex County Hospital	Dr Fiona Mckinna
Royal United Hospital Bath	Dr Mark Beresford
Singleton Hospital, Swansea	Dr Delia Pudney
South Devon Hospital	Dr Anna Lydon
Southend Hospital	Dr Imtiaz Ahmed
St Bartholomew's Hospital, London	Dr Paula Wells
The Christie Hospital, Manchester	Dr Susan Davidson
The Clatterbridge Cancer Centre, Wirral	Ms Susan Birch

The James Cook University Foundation Hospital, Middlesbrough	Dr Nick Wadd
University College Hospital, London	Dr Yen-Ching Chang
University Hospital of North Midlands	Ms Diane Garratt
University Hospital Southampton	Dr Catherine Heath
University Hospitals, Coventry and Warwickshire	Dr Lydia Fresco
Velindre Hospital, Cardiff	Dr Jacinta Abraham
Weston Park Hospital, Sheffield	Dr Patricia Fisher
Worcester Oncology Centre	Dr Clive Irwin

Appendix 3. Whole-time equivalent clinical oncologists by cancer centre and per million population

Cancer centre	WTE consultant clinical oncologists	Population	WTE consultants per million population
Aberdeen Royal Infirmary	6.7	608,166	11.0
Addenbrooke's Hospital, Cambridge	21.0	1,408,835	14.9
Altnagelvin Hospital, Londonderry	3.0	No data	No data
Basingstoke and North Hampshire Hospital	2.0	144,480	13.8
Beatson West of Scotland Cancer Centre	25.3	2,533,442	10.0
Belfast City Hospital	22.2	1,851,621	12.0
Bristol Haematology and Oncology Centre	11.8	1,069,735	11.0
Castle Hill Hospital, East Riding of Yorkshire	11.0	1,016,331	10.8
Cheltenham General Hospital	11.5	900,655	12.8
Colchester General Hospital	10.6	699,489	15.2
Cumberland Infirmary	3.0	300,549	9.8
Derriford Hospital, Plymouth	7.9	453,046	17.5
Dorset Cancer Centre	7.9	713,802	11.0
Edinburgh Cancer Centre	18.4	1,375,688	13.4
Glan Clwyd Hospital, Rhyl	8.0	699,794	11.4
Guy's and St Thomas' Cancer Centre, London	17.2	1,695,277	10.1
Imperial College Cancer Centre, London	10.9	1,172,283	9.3
Ipswich Hospital	7.0	352,977	19.8
Kent Oncology Centre	20.5	1,776,720	11.5
Leeds Cancer Centre	26.1	2,800,766	9.3
Leicester Royal Infirmary	8.5	915,820	9.3
Lincoln County Hospital	7.0	564,952	12.4
Mount Vernon Cancer Centre, Hertfordshire	18.5	1,937,737	9.5
Musgrove Park Hospital, Taunton	7.3	384,846	18.8
New Cross Hospital, Wolverhampton	8.8	847,433	10.4
Ninewells Hospital and Medical School, Dundee	8.3	501,460	16.6
Norfolk and Norwich University Hospital	9.8	842,360	11.6
North Middlesex University Hospital	7.1	573,653	12.4
Northampton General Hospital	9.1	715,770	12.7
Northern Centre for Cancer Care, Newcastle upon Tyne	20.1	1,755,837	11.4
Nottingham University Hospital	13.2	1,101,230	12.0
Oxford Cancer Centre	31.0	1,334,512	23.2
Peterborough City Hospital	3.5	268,508	13.0
Portsmouth Oncology Centre	9.9	787,346	12.6
Queen Elizabeth Hospital, Birmingham	17.3	1,931,339	9.0
Queen's Hospital, Romford	8.6	586,746	14.6
Raigmore Hospital, Inverness	2.5	354,243	7.1

Royal Berkshire Hospital	8.6	715,497	12.0
Royal Cornwall Hospital	6.7	403,014	16.6
Royal Derby Hospital	8.0	704,817	11.4
Royal Devon and Exeter Hospital	11.2	572,489	19.6
Royal Free Hospital, London	3.6	384,387	9.4
Royal Marsden Hospital, London	22.1	2,135,001	10.4
Royal Preston Hospital	19.1	1,443,305	13.2
Royal Shrewsbury Hospital	7.0	452,790	15.5
Royal Surrey County Hospital	15.3	1,245,057	12.2
Royal Sussex County Hospital	12.7	923,398	13.7
Royal United Hospital Bath	4.9	431,841	11.3
Singleton Hospital, Swansea	9.5	899,735	10.6
South Devon Hospital	3.3	243,574	13.3
Southend Hospital	9.3	660,285	14.1
St Bartholomew's Hospital, London	7.1	1,078,722	6.6
The Christie Hospital, Manchester	38.9	3,250,272	12.0
The Clatterbridge Cancer Centre, Wirral	27.0	2,219,372	12.2
The James Cook University Hospital, Middlesbrough	11.2	1,011,710	11.0
University College Hospital, London	14.9	868,771	17.2
University Hospital of North Midlands	11.0	657,233	16.7
University Hospital Southampton	15.4	1,265,099	12.2
University Hospitals, Coventry and Warwickshire	13.7	1,037,004	13.2
Velindre Hospital, Cardiff	23.6	1,499,556	15.7
Weston Park Hospital, Sheffield	18.9	1,759,015	10.7
Worcester Oncology Centre	7.2	499,980	14.4

Data sources for cancer centre catchment population sizes

England

NHS England

www.engage.england.nhs.uk/survey/264ceb37/supporting_documents/rtdiscussionguide.pdf

Northern Ireland

Belfast City Hospital – based on Northern Ireland ONS 2015 population 1,851,621 (only cancer centre in NI until Altnagelvin Hospital Cancer Centre opens).

Scotland

Based on the provider population figures in the *Clinical oncology UK workforce census report 2014* and adjusted to reflect Scotland ONS 2015 population 5,373,000.^{3,8}

Wales

Based on 2014 population figures in *Clinical oncology UK workforce census report 2014* and adjusted to reflect Wales ONS 2015 population 3,099,086.^{3,8}

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