

Participation in child health research: A survey of the paediatric workforce

October 2015



©The Royal College of Paediatrics and Child Health (RCPCH) is a registered charity in England and Wales (1057744) and in Scotland (SC038299)

CONTENTS

Key findings.....	iii
Recommendations.....	iii
1. Background.....	1
2. Methodology.....	2
3. Results.....	3
3.1 Responders.....	3
3.2 Job types of respondents.....	5
3.3 Subspecialties and special interests.....	6
3.4 Qualifications.....	6
3.5 Research and other activity undertaken within and outside job plans.....	7
3.6 Memberships of research boards and ethics committees.....	10
3.7 Publications.....	12
3.8 Grants.....	14
3.9 PhD supervision.....	16
Acknowledgements.....	17
List of acronyms.....	17
References.....	17

Key findings

- 44.4% of eligible respondents replied to the survey.
- Almost a third of respondents (32.9%) hold a postgraduate diploma, 21.3% hold an MSc, 18.9% an MD (research degree) and 7.6% a PhD.
- 1311 (81.6%) of respondents did not have PAs for research in their job plan.
- Among consultants, 80.1% have no PAs in their job plan for research and over half, 50.8% undertake no research work.
- The average number of PAs for research in consultant job plans is 0.39 and the average number actually worked is 0.71 indicating that respondents spend almost the same amount of time again on research work which is unpaid.
- 65.2% of consultants have not authored peer reviewed original research papers and over four in five have not authored chapters in textbooks.
- On average male consultants authored almost twice as many publications as female consultants - 4.0 per whole time equivalent male doctor compared to 2.2 per whole time equivalent female doctor.
- Overall 213 respondents are in receipt of grants; 89.4% of survey respondents do not receive grants for research.

Recommendations

- The RCPCH supports members who wish to carry out research by advocating for appropriate supporting professional activity (SPA) time for all non-direct clinical care activities. We will continue to raise awareness of the importance of research to employers, policymakers and the public.
- The RCPCH will stress the importance of time being made available for research activity for general and community paediatricians who are considerably under-represented in terms of research output compared to subspecialist paediatricians.
- The proportion of women authoring publications is worryingly low. The RCPCH will work with key stakeholders to understand the reasons for this so that consideration can be given as to what action can be taken.
- Given the reported low levels of research activity by paediatricians reported in this survey, the College will investigate options for increasing paediatricians' involvement in research including:
 - Ensure that training in research methods and associated disciplines in undergraduate and postgraduate curricula is effectively delivered so that all paediatricians have the opportunity to get involved in research and the skills to understand and use evidenced based best practice.
 - Highlighting and promoting key research successes by paediatricians, particularly where research has led to change and produced better outcomes for children.
 - Improved communication to paediatricians and their employers of the routes to obtain funding research and the encouragement of collaborative work between organisations.
 - Studying the processes for paediatric research activity overseas to learn from models of best practice which could be replicated in the UK.

Background

The RCPCH believes that child health research should be embedded in every paediatrician's work, and throughout their careers.

There has been concern that with pressures facing the NHS, the ability of the paediatric workforce to carry out child health research is declining. The number of academic paediatricians recorded in the *RCPCH workforce census*ⁱ has decreased year on year, and there is evidence that supporting professional activities in consultant contracts are being cut, reducing the time available for conducting research.

Three years ago Professor Neena Modi wrote of the "need for high quality research to generate evidence to benefit children and ultimately the health of the nation". In November 2012, the College launched *Turning the tide: Harnessing the power of child health research*ⁱⁱ which stressed the importance of child health research both to patients and to advance the science of paediatrics. It also highlighted the need to increase research capacity through the collaboration of key stakeholders since then the UK Child Health Research Collaborative (UKCHRC) has been launched, but we remain concerned about the capacity of the paediatric workforce to undertake research.

In 2011, the College conducted a survey of all consultant and SAS (staff, associate specialist and specialty doctor) paediatricians recorded in the 2009 workforce census. A response rate of 66.7% was achieved and the survey indicated low levels of research involvement amongst paediatricians.

In order to support our members to maintain and increasing research capacity the aim of this survey was to determine the current level of paediatricians' involvement in research and to use that understanding to influence the future direction of and resources for paediatric research.

1. Methodology

All consultants and SAS doctors recorded in the RCPCH 2013 workforce census were identified along with any new CCT holders in paediatrics qualifying up to May 2015. The resultant doctors were used as the denominator for a survey designed by a specifically convened working group of College officers and staff under the leadership of Professor Anne Greenough, Vice President for Science and Research.

The response to the survey is analysed in Table 1.

Table 1: Overall response rate

	Response rate
Total eligible respondents	4768
Members opting out of email/survey contact, no email address available or retired/moved overseas since last census.	435
Total surveys sent	4333
Total respondents	1924
%	44.4%

The survey received 1924 responses, representing 45.3% of consultants and 21.1% of SAS doctors.

2. Results

3.1 Responders

In terms of gender, grade and location, the respondents were reasonably representative of the paediatric workforce. However tertiary specialist paediatricians were more likely to respond to the research survey; 38.9% of respondents were tertiary specialists compared to only 32.6% of the workforce recorded in the 2013 census. Conversely 25.1% of the workforce is based in community child health compared to only 19.5% of survey respondents.

Table 2: Response rate by gender, compared to 2013 census

Gender	Research survey		Census 2013	
	No.	%	No.	%
Female	1028	53.4%	2613	55.2%
Male	896	46.6%	2124	44.8%
Total	1924		4737	

Table 2 shows that 53.4% of survey respondents were female compared to 55.2% of consultants and SAS doctors recorded in the 2013 Census. One possible explanation for this discrepancy for is apparent in Table 3 when we consider the grade of responders.

Table 3: Response rate by grade, compared to 2013 census

	No of respondents	2013 Census	% of grade responding
Consultant	1685	3718	45.3%
	89.6%	80.1%	
SAS doctor	195	923	21.1%
	10.4%	19.9%	
Total	1880*	4641	40.5%

*44 respondents were either in other grades, or not currently employed as doctors.

The data in Table 3 show that 89.6% of respondents were consultants and 10.4% were SAS doctors. This compares to 80.1% and 19.9% in the census. The census gives a complete picture of the workforce, however because the research survey was mailed to individual doctors, our reach to SAS doctors was not complete because a higher proportion of these doctors are not members of the College and we therefore did not have contact details to include them in this survey.

Table 4: Response rate by country currently working in, compared to 2013 census

	Response rate in Research Survey	No. in 2013 Census	%
England	1597	3837	41.6%
Northern Ireland	56	152	36.8%
Scotland	131	409	32.0%
Wales	110	243	45.3%

* 10 did not specify location and 20 are currently working overseas.

Table 4 shows that there was a range of response rates across the UK from 32.0% in Scotland to 45.3% in Wales.

Table 5 breaks down the respondents according to the type of organisation they work for. Unsurprisingly most (93.9%) work for an NHS trust or health board.

Table 5: Response rate by organisation type (UK based respondents)

Organisation type	Response rate	%
NHS trust or health board	1779	93.9%
University	84	4.4%
Private organisation	14	0.7%
CIC, social enterprise or private provider of NHS services	11	0.6%
NHS and University	3	0.2%
Charity	2	0.1%
CCG and independent provider	1	0.1%
Total	1894*	

*30 who were overseas or did not provide a location did not respond to this question.

3.2 Job types of respondents

Figure 1 and Figure 2 compare the job types of the respondents in the research survey to the job types recorded in the 2013 workforce census. In the research survey 38.9% of respondents were tertiary specialists compared to only 32.6 of the workforce recorded in the 2013 census. Conversely although 25.1% of the workforce is based in community child health, only 19.5% of our respondents did so. This shows that tertiary specialist paediatricians were more likely to respond to the research survey than paediatricians in other job types.

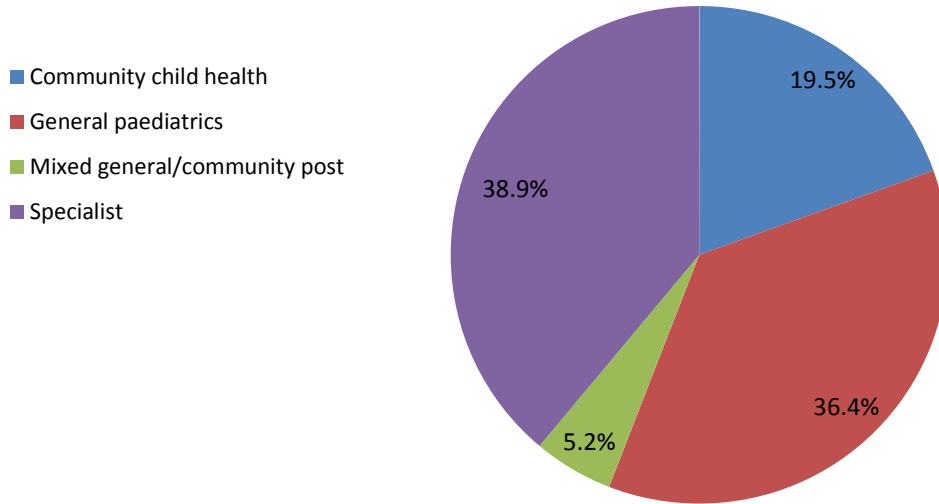


Figure 1: Job type group of respondents - Research Survey

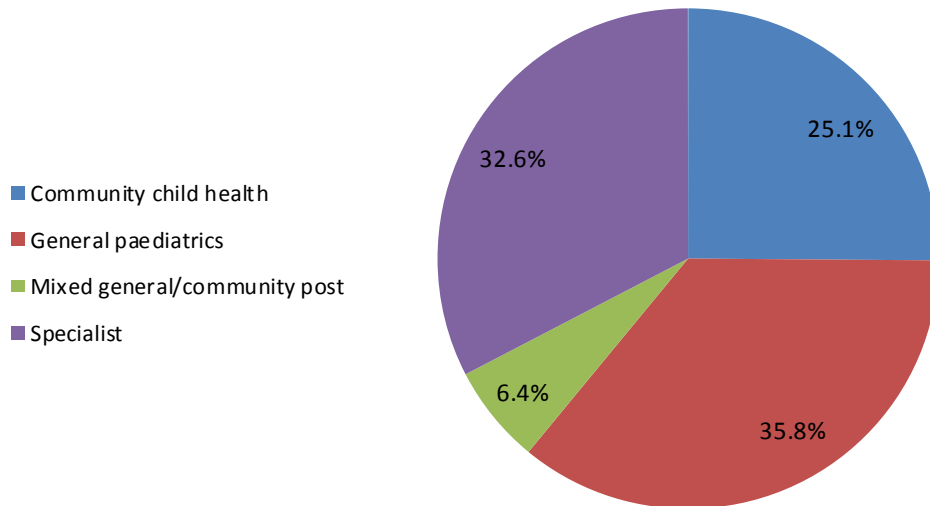


Figure 2: Job type group of respondents - Workforce Census 2013

3.3 Subspecialties and special interests

724 respondents were classified as paediatric subspecialists. The largest group were specialists in neonatal medicine (237), followed by neurology (54), paediatric intensive care medicine (52) and diabetes and endocrinology (51).

In addition 213 community paediatricians and 693 general paediatricians stated that they had a special interest. For community paediatricians the most common special interests were neurodisability (51), adoption, fostering, looked after children (32) and safeguarding/child protection (27). For general paediatricians, neonatal medicine (82) was the most common special interest followed by respiratory (69) and allergy (65).

3.4 Qualifications

To determine academic skill/education level of the paediatric workforce, we asked respondents to specify whether they had a postgraduate qualification and to list the types of qualification they hold.

Table 6: Respondents with postgraduate qualifications by primary appointment

Primary appointment		Yes	No	Not sure	Not stated	Total
Consultant	No.	1021	623	20	21	1685
	%	60.6%	37.0%	1.2%	1.2%	
SAS doctor	No.	103	88	1	3	195
	%	52.8%	45.1%	0.5%	1.5%	
Other non-training grade	No.	12	9	0	7	28
	%	42.9%	32.1%	0.0%	25.0%	
Trainee	No.	2	4	0	1	7
	%	28.6%	57.1%	0.0%	14.3%	
Total	No.	1138	724	21	32	1915
	%	59.4%	37.8%	1.1%	1.7%	

*9 respondents not currently employed by a doctor.

Table 6 shows that 59.4% of respondents and 60.6% of consultants who responded have at least 1 postgraduate qualification. The percentage of SAS doctors who hold a postgraduate qualification is slightly lower at 52.8%, and other non-training grades and trainees who responded to the survey are also less likely to have a postgraduate qualification. Note that trainees responding to this survey are SAS doctors recorded in the College 2013 census but who have subsequently returned to training.

In Table 7, the range of postgraduate qualifications held by respondents is set out and analysed according to age group. Respondents could list all their postgraduate qualifications; therefore the total in Table 7 (1637) exceeds the number of doctors who have qualifications (1138).

The most commonly held qualification is a postgraduate diploma (533), followed by MSc (349) and MD (research degree) (125).

The average number of qualifications per doctor increases with age, as might be expected. Doctors in the 30-39 age group had on average 0.61 qualifications, compared to 0.99 per doctor in the 60+ age group.

Table 7: Type of postgraduate qualification held by age group

Type of qualification	30-39	40-49	50-59	60+	Not known	Total
Postgraduate diploma	22	189	222	64	36	533
MSc	18	142	133	26	30	349
MD (research degree)	5	89	153	42	20	309
PhD	8	54	37	9	17	125
MA	5	32	28	9	6	80
Masters degree (other)	4	31	22	4	1	62
Postgraduate certificate	5	24	21	5	6	61
Diploma in Child Health	2	12	33	7	2	56
Other	5	19	28	4	6	62
Total	74	592	677	170	124	1637
% of total qualifications	4.5%	36.2%	41.4%	10.4%	7.6%	100.0%
Total doctors in age group	121	791	688	171	153	1924
Av. no. of qualifications per doctor	0.61	0.75	0.98	0.99	0.81	0.85

3.5 Research and other activity undertaken within and outside job plans

One of the key reasons for undertaking this survey was to establish how much research activity is undertaken by paediatricians and also to put this in context of other activity within job plans.

We asked each respondent to identify the approximate programmed activities (PAs) per week in their job plan, approximate PAs actually spent, and who pays for the work.

Figure 3 shows the numbers of doctors (all survey respondents) who have no PAs for research or fall within certain ranges of PAs for research actually worked compared with their job plan.

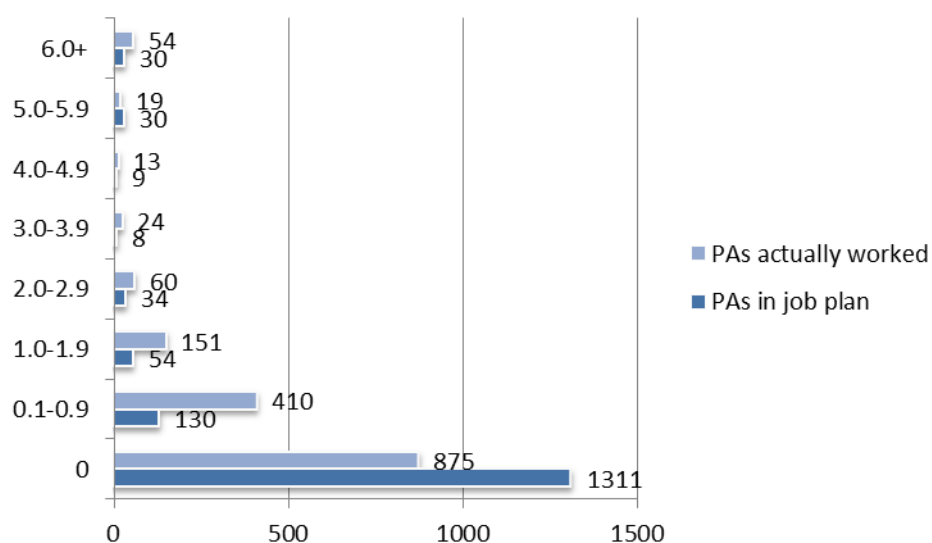


Figure 3: Programmed activities for research, in job plan and actually worked (all respondents)

*318 did not provide a breakdown of their PAs.

The analysis shows that 1311 or 81.6% did not have PAs for research in their job plan and 875 or 54.5% do no research work. A further 8.1% have less than 1 PA for research in their job plan, although 25% of respondents spend this amount of time on research. Those who have more PAs in their job plan or actually undertake research is clearly quite minimal; the average PAs in job plan for research per respondent was 0.37 and the average PAs actually worked for research per respondent was 0.66.

Figure 4 presents the same data for consultants, showing that a slightly lower proportion (80.1%) have no PAs in their job plan for research and over half (50.8%) actually undertake no research work. The average number of PAs for research in consultant job plans is 0.39 and the average number actually worked is 0.71.

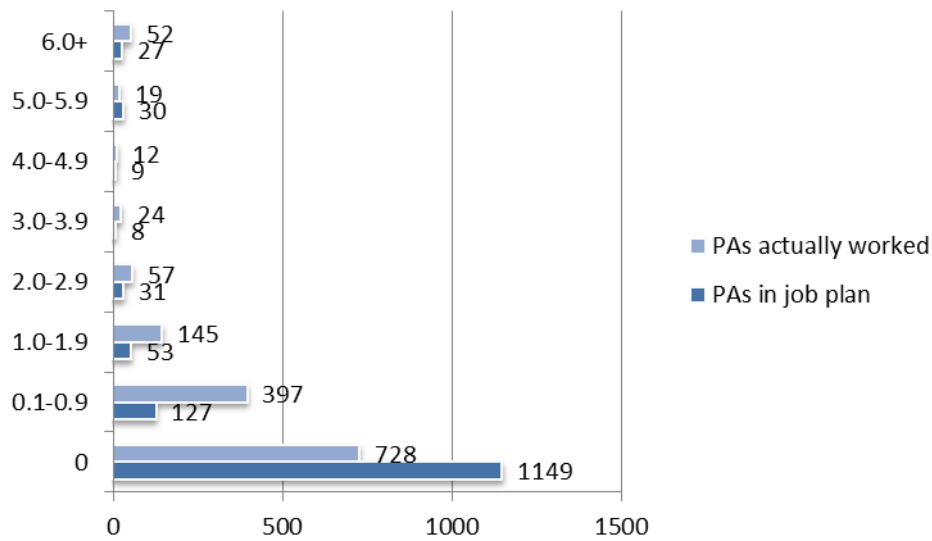


Figure 4: Programmed activities for research, in job plan and actually worked (consultants only)

*251 consultants did not provide a breakdown of their PAs.

We asked each doctor who undertakes some research where the work is carried out and who pays. This is analysed in Table 8. A key point to note is that 415 (59%) of the 703 respondents, are not paid for the research that they undertake. A further 44 (6.3%) are only partly paid for this work. It is also important to note that most research activity is done locally – 473 respondents (67.2%) state that the activity is within their trust or health board and a further 113 state that it is both within and outside their trust or health board.

Table 8: Where is research work carried out and who pays (all respondents)

Who pays	Where work carried out			Not applicable	Not specified	Total
	Outside your trust/health board	Within & outside trust/health board	Within your trust/health board			
Paid in full by trust/health board	1	11	128	0	3	143
Paid in part by trust/health board	1	4	13	1	0	19
Jointly paid by trust and other	0	6	7	1	0	14
Paid in part by trust and other	0	2	7	0	0	9
Paid in full by other	32	15	33	3	2	85
Paid in part by other	5	4	9	0	0	18
Not paid	18	71	276	37	13	415
Total	57	113	473	42	18	703

*28 doctors did not specify who pays and are not included in the above analysis

3.6 Membership of research boards and ethics committees

We asked all respondents which research boards and ethics committees they were members of and the results are shown in Table 9 for each UK country.

Table 9: Membership of research boards or ethics committees by country

Research board/ethics committee	England	Northern Ireland	Scotland	Wales	UK	%
None	1499	52	125	102	1778	93.0%
Charity research committee/advisory board	20	0	1	1	22	1.2%
National Institute of Health Research Scientific Advisory Board	19	0	0	1	20	1.0%
National Research Ethics Service research ethics committee	11	0	2	3	16	0.8%
Special interest group	11	0	2	0	13	0.7%
Local research board/ethics committee	8	2	0	0	10	0.5%
Medical Research Council Scientific Advisory Board	8	1	0	1	10	0.5%
National Institute of Health Research Clinical Research Network	8	1	0	0	9	0.5%
National Institute of Health Research Clinical Studies Group	6	0	0	0	6	0.3%
Wellcome Trust Scientific Advisory Board	4	0	0	0	4	0.2%
National Cancer Research Institute group	3	0	0	1	4	0.2%
Overseas research board/ethics committee	3	0	0	0	3	0.2%
Steering committee, national research study	3	0	0	0	3	0.2%
Journal research board/ethics committee	2	0	0	1	3	0.2%
NIHR reviewer	2	0	0	0	2	0.1%
Association for the Study of Medical Education	1	0	0	0	1	0.1%
British Paediatric Surveillance Unit	1	0	0	0	1	0.1%
Clinical trials unit advisory board	1	0	0	0	1	0.1%
Health research authority	1	0	0	0	1	0.1%
Human Tissue Authority advisory panel	1	0	0	0	1	0.1%

Research board/ethics committee	England	Northern Ireland	Scotland	Wales	UK	%
Pharmaceutical research board/ethics committee	1	0	0	1	2	0.1%
Trust Development Association national advisory group	1	0	0	0	1	0.1%
Total	1614	56	130	111	1911	

*10 respondents did not specify location, 20 are currently working overseas. Respondents may have provided more than one answer.

The data clearly shows that the great majority – 1778 are not members of either type of body. The most common membership is of a charity research committee/advisory board (22 members), National Institute of Health Research Scientific Advisory Board (20) and National Research Ethics Service research ethics committee (16).

Figure 5 analyses the job type of those doctors who are members of at least one research board or ethics committee. This shows that over two-thirds (67.3%) of these doctors are paediatric subspecialists, 17.7% are general paediatricians and 10.6% community paediatricians. These figures contrast starkly with the overall breakdown of respondents to this survey shown in Figure 2 i.e. 32.6% subspecialists, 35.8% general paediatricians and 25.1% community paediatricians.

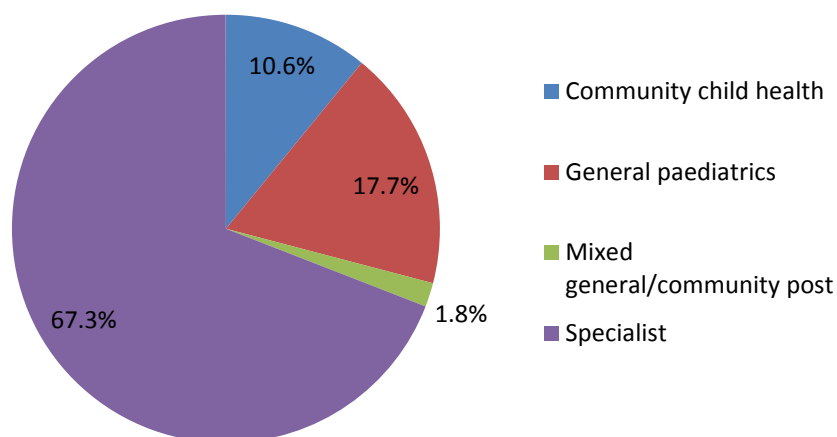


Figure 5: Job type of doctors who are members of a research board or ethics committee

3.7 Publications

We asked respondents whether they have authored various types of publication in the 2 years up to May 2015 and the analysis in Table 10 shows, for consultants only, the number of publications of each type that have been authored up to May 2015.

Table 10: Consultant authorship in the 2 years up to May 2015 by publication type

Publication type		Number of publications							No of consultants responding
		0	1 to 5	6 to 10	11 to 15	16 to 20	21 to 25	>25	
Case reports	No.	1096	297	2	0	0	0	0	1395
	%	78.6%	21.3%	0.1%	0.0%	0.0%	0.0%	0.0%	
Chapters in textbooks	No.	1141	242	11	0	1	0	0	1395
	%	81.8%	17.3%	0.8%	0.0%	0.1%	0.0%	0.0%	
Peer reviewed original research papers	No.	910	360	66	30	14	9	7	1396
	%	65.2%	25.8%	4.7%	2.1%	1.0%	0.6%	0.5%	
Review articles	No.	1075	305	12	1	1	0	1	1395
	%	77.1%	21.9%	0.9%	0.1%	0.1%	0.0%	0.1%	
Textbooks	No.	1344	51	0	0	0	0	0	1395
	%	96.3%	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%	

It is clear that large numbers of consultants have produced very few publications over the last 2 years. 65.2% have not authored peer reviewed original research papers, over four-fifths have not authored chapters in textbooks and only 51 have written textbooks

Table 11 provides two analyses of the number of publications authored against other characteristics. Firstly the average number of each publication by gender and secondly the average number according to job type group. These are averages per whole time equivalent (WTE) doctor to take into account differences in less than full time working rates.

Table 11: Average number of publications authored per WTE consultant in 2 years up to May 2015: gender and job type

Publication type	Gender		Consultant job type			
	Female	Male	Community child health	General paediatrics	Mixed general/community	Specialist
Case reports	0.3	0.5	0.1	0.3	0.1	0.6
Chapters in textbooks	0.3	0.4	0.2	0.1	0.1	0.6
Peer reviewed original research papers	1.1	2.4	0.6	0.5	0.6	3.3
Review articles	0.4	0.7	0.3	0.2	0.1	0.9
Textbooks	0.0	0.1	0.0	0.0	0.0	0.1
Total	2.2	4.0	1.2	1.2	1.0	5.4

The gender analysis shows that on average male consultants are the authors of almost twice as many publications than female consultants (4.0/2.2) and that the difference is most marked for peer reviewed original research papers where males had authored an average of 2.4 in the previous two years compared to 1.1 for females.

In regard to job type, specialist (subspecialist) paediatricians have authored on average over five times as many publications as other types of paediatricians, 5.4 in the last 2 years compared to a maximum of 1.2 for paediatricians of other job types.

A different take on this data which further emphasises these differences is to look at how many consultants had authored zero publications in the same time period and this is set out in Table 12.

Table 12: Consultants authoring zero publications in last 2 years

Female	53.4%
Male	38.8%
Community child health	67.4%
General paediatrics	60.2%
Mixed general/community post	71.1%
Specialist	23.5%

This data shows that over half of females (53.4%) authored zero publications, compared to 38.8% of males. Over two-thirds of community and mixed general/community paediatricians had authored no publications while only 23.5% of subspecialists had not done so.

3.8 Grants

We asked respondents to state whether they are a principal award holder on any grants, the name or type of organisation making the grant, the number of grants held and the value of those grants.

Table 13: Number of respondents by number of grants held

Number of grants held	No.	%
0	1712	89.40%
1	88	4.60%
2	40	2.09%
3	26	1.36%
4	22	1.15%
5	12	0.63%
6+	25	1.31%
Total	1915	100.00%

Overall 213 respondents are in receipt of grants meaning 89.4% (1712/1915) of survey respondents do not receive grants for research (Table 13).

Table 14 details the number of respondents holding grants of a certain value and from what type of body. The total of 366 reflects the fact that some respondents hold grants with more than one organisation.

Table 14: Number of respondents with grants, by awarding body and total value of grants

Awarding body	Value not specified	£0 - £49,000	£50,000 - £99,000	£100,000 - £149,000	£150,000 - £200,000	£200,000 or more	Total
Local research charity	12	44	14	5	3	4	82
National research charity	5	15	10	9	6	28	73
National Institute for Health Research	2	4	5	2	3	38	54
Industry	3	19	9	4	5	10	50
European Union	3	3	1	0	1	15	23
Medical Research Council	2	2	1	3	1	12	21
Other - not specified	3	5	2	1	0	4	15
Local trust or network	1	8	1	0	1	0	11
Wellcome Trust	1	0	0	0	1	8	10
Overseas organisation	1	2	0	1	1	4	9
Other national body	1	1	1	0	0	3	6
NHS	1	2	1	0	1	0	5
Department of Health	0	3	1	0	0	0	4
Privately funded	2	0	0	0	0	0	2
Wellcome Trust and DH	0	0	0	0	0	1	1
Total	37	108	46	25	23	127	366

The three largest awarders are local research charities (82), national research charities (73) and the National Institute for Health Research (NIHR) with 54. Over a third of grant holders (127) are in receipt of grants totalling £200,000 or more from a single awarding body. Ignoring those who did not specify the value of grants they were in receipt of, approximately 47% (154/329) were in receipt of small grants i.e. less than £100,000.

3.9 PhD student supervision

Table 15 shows how many PhD students supervised by consultant respondents to the survey. This shows that the great majority of consultants 92.4% do not supervise any PhD students and 3.5% supervise only 1.

Table 15: Consultants currently supervising PhD students

No of PhD students	No. of consultants	%
0	1448	92.4%
1	55	3.5%
2	29	1.9%
3	13	0.8%
4	9	0.6%
5	3	0.2%
6	7	0.4%
7	1	0.1%
9	2	0.1%
Total	1567*	

* 357 did not answer this question.

We also asked how many PhD students each consultant had successfully supervised in their career and the results are shown in Table 16. This reveals that 88.1% had never supervised any PhD students while of those who had done so 8.9% had supervised only between 1 and 5, indicating low levels of involvement in research activity.

Table 16: PhD students successfully supervised in consultant career

No of PhD students	No. of consultants	%
0	1364	88.1%
1 to 5	137	8.9%
6 to 10	29	1.9%
11 to 15	8	0.5%
16-20	7	0.5%
Over 20	3	0.2%
Total	1548*	

* 376 did not answer this question.

Acknowledgements

Professor Anne Greenough	Vice President for Science and Research, RCPCH
Dr Simon Clark	Officer for Workforce Planning, RCPCH
Martin McColgan	Workforce Information Manager, RCPCH
Rachel Winch	Workforce Projects Lead, RCPCH
Wingsan Lok	Workforce Assistant, RCPCH

List of acronyms

PA	Programmed Activity
SAS	Staff, Associate Specialist and Specialty Doctor
SPA	Supporting Professional Activity
UKCHRC	UK Child Health Research Collaborative

References

ⁱ RCPCH. *RCPCH Medical Workforce Census 2013*. December 2014. Available at: www.rcpch.ac.uk/census

ⁱⁱ RCPCH. *Turning the Tide: Harnessing the Power of Child Health Research*. November 2012. Available at: <http://www.rcpch.ac.uk/child-health/research-and-surveillance/research-guidance/turning-tide/turning-tide-harnessing-power>