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UK rheumatology consultant workforce provision 2007–9: results from the BSR/Arthritis Research UK Consultant Workforce Register

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ABSTRACT – The objective of this study was to describe the provision of consultant rheumatology services and the pattern of inequalities in UK rheumatology service provision, and to summarise the five-year impact of the new NHS consultant contract and the Musculoskeletal Services Framework in England and Wales. All consultants on the British Society for Rheumatology/Arthritis Research UK Consultant Workforce Register in January 2007 and January 2009 were sent questionnaires about timetable and working conditions and the personal and job-related details currently held about them on the register. Response rates were 87% in 2007 and 86% in 2009. The number of whole-time equivalent (WTE) rheumatologists in the UK increased from 470 to 531 (13%). Levels of provision in 2009 were lower in Scotland (1 WTE per 113,286 population) than the rest of the UK. There are now few regional variations in rheumatology consultant provision within the UK, and the number of WTE consultants is approaching recommended levels.

KEY WORDS: healthcare delivery, rheumatology workforce, service provision

Background

The UK Consultant Rheumatology Workforce Register was established in 1971 to record details of all NHS consultant rheumatologists. The register has been held on behalf of the British Society for Rheumatology (BSR) and Arthritis Research UK (formerly Arthritis Research Campaign) at the Arthritis Research UK Epidemiology Unit since 1983. The register is updated biennially, most recently in 2009. From mid-2009 the register has been held and managed by the BSR alone.

The continuing objective of the register has been to monitor and report changes in the provision of rheumatology services. A series of publications[1–4] have summarised changes in provision using data from the register, most recently from the 2007 update,[5] and a consistent finding has been inequalities in whole-time equivalent (WTE) consultant rheumatologist provision between regions and countries of the UK. Provision is assessed against benchmark levels set by the Royal College of Physicians (RCP); in 2007 recommended levels of provision were one WTE per 90,000 population.[6] Provision in England and, more recently, Wales, has been higher than in Scotland and Northern Ireland. For example, in 2007 the population per WTE rheumatologist in England and Wales was less than 130,000 (70% of recommended provision) but exceeded 155,000 and 170,000 (57% and 53% of recommended) in Northern Ireland and Scotland respectively.[5,7] The data and publications provided by the BSR/Arthritis Research UK Rheumatology Workforce Register are unique; a review of the literature did not identify comparable estimates of levels of recommended provision for other specialties. Using raw consultant numbers suggests that this inequality in provision has not been evident in a range of other specialties (Table 1), where Scotland has generally had the lowest population to consultant ratio, although these figures are based on numbers of consultants and not WTE. Within England, inequalities in provision have been consistently reported with provision in London and the South East, the West Midlands and North West having the highest levels and the Eastern and South West regions having lowest provision.[5,7]

The most recent RCP needs-based estimate recommends an optimal provision of one WTE consultant rheumatologist per 86,000 population.[8] The key assumptions underpinning this estimate are that rheumatologists provide a service for both inflammatory and non-inflammatory musculoskeletal conditions; and that consultant rheumatologists are supported by specialist rheumatology nurses.

Over the past decade, a number of changes in policy have shaped the provision of rheumatology services, primarily the new consultant contract which was introduced in 2004[9,10] and, more recently, the Musculoskeletal Services Framework (MSF), which affects England and Wales. The MSF introduced targets for provision of services by December 2008. The data collected in January 2009 provide a timely opportunity to review the impact of this policy on rheumatology workforce provision.

The MSF aimed to improve access to services by moving them closer to the patient, and reducing the time from presentation to the GP to receiving hospital treatment.[11] Innovations in service provision were introduced to provide more efficient patient pathways appropriate for patient needs. By 2007, up to one fifth of consultants reported running musculoskeletal services in conjunction with Clinical Assessment and Treatment Services (CATS) and GPs

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Table 1. Consultant numbers from the Royal College of Physicians for specialties other than rheumatology in 2005[11] and 2008.[12]

	Population per consultant (2008)			Ranking 2008 (2005), 1 = highest provision			
		Range					
	UK	Lowest	Highest	England	Wales	Scotland	Northern Ireland
Cardiology	68,976	62,083	87,950	3 (3)	1 (4)	2 (1)	4 (2)
Dermatology	112,708	85,733	125,643	3 (2)	2 (3)	1 (1)	4 (4)
Endocrinology and diabetes	91,968	77,939	103,471	3 (3)	2 (2)	1 (1)	4 (4)
Gastroenterology	61,966	54,969	64,783	3 (1)	4 (3)	2 (2)	1 (4)
Geriatric medicine	54,883	39,267	62,821	3 (4)	2 (2)	1 (1)	4 (3)
Haematology	71,066	52,490	79,955	3 (2)	2 (2)	1 (1)	4 (4)
Neurology	109,274	97,057	156,842	2 (2)	4 (4)	1 (1)	3 (3)
Renal medicine	144,491	90,246	159,909	2 (3)	3 (4)	1 (1)	4 (2)
Respiratory medicine	81,084	73,486	109,938	3 (3)	2 (2)	1 (1)	4 (4)

with special interests.[5] Few consultants (4%) had begun to use or work in (<1%) independent sector treatment centres (ISTC). The MSF set a target of a maximum 18-week pathway between GP referral and definitive hospital treatment by December 2008.[13] The MSF milestones suggested that, by 2007, the waiting time from referral to first hospital attendance would be 11 weeks and eight weeks in March 2008 before reducing to around six weeks by December 2008. This review provides timely data to assess the achievement of this goal.

The aim of this paper is to describe changes in the provision of rheumatology services in response to the MSF in England and Wales, and to review the pattern of inequalities in rheumatology service provision in the UK.

Methods

In January 2007 and January 2009 each consultant on the BSR/Arthritis Research UK Consultant Rheumatology Workforce Register database was mailed a copy of the personal- and job-related details currently held about them on the register to update, and a questionnaire asking about their timetable and working conditions. The data held include demographic details, training and qualifications, type of contract, hospitals at which each consultant works, and their colleagues at each hospital. The 2009 questionnaire included a visual analogue scale (VAS) asking 'How concerned are you that your current post might be under threat?' which ranged from 0 'Not at all' to 100 'Extremely' as well as questions about job satisfaction and possible changes in work life (see Table 2 for further details). We also collected details of self-reported ethnicity for the first time. Reminders were sent to non-responding consultants after approximately six weeks, followed by up to two subsequent reminders at six-week intervals. Finally, a personalised reminder letter was sent approximately six months after the initial mailing.

The accuracy of the BSR/Arthritis Research UK Consultant Rheumatology Workforce Register is maintained in three main ways. The first, and probably best, source is the biennial questionnaire which asks respondents to notify us of new appointments (in their region), and the consultant details form lists consultants at the same hospital which the consultant verifies. Secondly, the consultant names on the register are compared annually against the RCP annual consultant survey for that year. Finally, the BSR notify us of new consultant appointments.

Levels of provision at national and regional levels were compared against the updated benchmark of one WTE rheumatologist per 86,000 population.[8] Each consultant who was contracted for at least 10 programmed activities (PA) was counted as one WTE. A PA equates to a four-hour session. Those working fewer than 10 PAs, had a WTE number calculated by dividing the number of contracted PAs by 10. Consultants combining rheumatology with another specialty only contributed their rheumatology sessions to this analysis. Where consultants did not indicate their sub-specialty, they were allocated a sub-specialty commitment in line with the underlying proportion for their country or region. Where information on the attribution of PAs was missing, it was assumed that consultants combining rheumatology with another specialty contributed five rheumatology PAs per week.

Population estimates for the UK and its constituent countries were based on the Office for National Statistics figures for 2006, on the 2001 census for the 2007 RCP survey and the projected population figures for 2007 for the 2009 RCP survey (the nearest available projections).[14] The per capita provision for NHS Executive Regions within England was calculated using denominator populations taken from the Department of Health website.[4,5] The eight NHS Executive Regions used in the reviews of 1997 to 2005 were phased out and replaced with four English Directorates of Health and Social Care (London, Midlands and Eastern, North and South).[15] Thus, the latest available population statistics for the NHS Executive Regions were estimates for mid-2000 calculated in April 1999.

Results

The response rates of the 2007 and 2009 surveys were 87% and 86% respectively (Table 3), and at least 75% returned the

Table 2. Job satisfaction and possible changes in work life (median (interquartile range).

		UK	England	Scotland	Wales	Northern Ireland
Job satisfaction	Physical working conditions	5 (4–6)	5 (4–6)	5 (3–5)	5 (3–6)	4 (3–5)
Range of scores:	Freedom to choose method of working	5 (4–6)	5 (4–6)	5 (4–5)	5.5 (4.5–6)	4 (3–5)
1= Extremely dissatisfied	Colleagues and fellow workers	6 (5–7)	6 (5–7)	6 (5–7)	6 (5–7)	6 (5–7)
7= Extremely satisfied	Recognition for good work	5 (3–6)	5 (3–6)	4 (3–5)	4 (3.5–6)	4 (3–5)
	Amount of responsibility	6 (5–6)	6 (5–6)	6 (4–6)	6 (5–6)	5 (4–6)
	Remuneration	5 (4–6)	5 (4–6)	5 (4–6)	5 (3–6)	5 (4–5)
	Opportunity to use abilities	5 (4–6)	5.5 (4–6)	6 (4–6)	5 (4–6)	4 (3–6)
	Hours of work	5 (4–6)	5 (4–6)	5 (3–6)	6 (3.5–6.5)	4 (4–5)
	Amount of variety in job	6 (5–6)	6 (5–6)	5 (5–7)	5.5 (4.5–6)	5.5 (4–6)
	Feelings about job	5 (5–6)	5 (5–6)	5 (4–6)	5 (4.5–6)	5 (4–6)
Possible changes in work life	Increase work hours	1 (1–2)	1 (1–2)	1 (1–2)	1 (1–2)	2 (1–3)
Range of scores:	Reduce work hours	2 (1–3)	2 (1–3)	2 (1–3)	2 (1–2)	2.5 (1–3)
Likelihood of change:	Leave direct patient care	1 (1–1)	1 (1–2)	1 (1–1)	1 (1–1)	1 (1–1)
1 = None, 5 = High	Leave medical work entirely	1 (1–2)	1 (1–2)	1 (1–2)	1 (1–1)	1 (1–2)

Table 3. Response rates, n (%).

	1997	2001	2003	2005	2007	2009
Number of consultants mailed	412	480	506	542	584	641
Males (%)	80	78	78	76	75	70
Females (%)	20	22	22	24	25	30
Total response rate (%)	350 (85)	443 (92)	474 (94)	482 (89)	510 (87)	549 (86)
Number of questionnaires completed (%)	297 (72)	407 (85)	437 (86)	463 (85)	437 (75)	492 (77)

personal details form and the questionnaire. The proportion of females among respondents has increased steadily over the past 12 years from 20% in 2003 to 30% in 2009.

The median age was 47 years (interquartile range (IQR) 41, 55) and 70% were male. Consultants in Wales (median age 42 years) and Northern Ireland (median age 40 years) were younger than those in England and Scotland. The proportion of female consultants was lower in Northern Ireland (22%) than in the rest of the UK. Assuming a retirement age of 65, 13% of the current workforce will retire over the next five years, and 30% will retire in the next 10 years. These estimates are lower for Wales (7% (five years) and 21% (10 years)) and Northern Ireland (0% (five years) and 26% (10 years)), reflecting the younger workforce in these countries. Three quarters of consultants were employed on full-time contracts and 95% were employed on the new contract.

Non-respondents under retirement age were included in the remaining analyses using data that they had provided previously. Despite anxieties that responsibility for rheumatology patients might be moved into primary care, numbers of consultants increased sharply from 470 to 531 (13%) across the UK between 2007 and 2009 (range: 11% England to 25% Northern Ireland) and within England (range: 2% West Midlands to 35% South and West) (Table 4). Consequently, levels of optimal provision now exceed 76% in England, Wales and Northern Ireland (ie $\geqslant$1 WTE consultant per 113,286 population). Levels of optimal provision in Scotland (62%: one WTE per 139,000 population) remain the lowest in the UK. Within England, London had the highest level of provision (one WTE per 81,944), while the surrounding South East had the lowest levels of provision (one WTE per 140,984). It is likely that provision in these two areas is linked, with London providing some specialist care for surrounding regions in the South East. The level of provision for London and the South East combined was one WTE per 115,114 or 75% of optimal provision. This is comparable with other regions of England. It therefore appears that inequalities at the subnational level within England have been addressed between 2007 and 2009, as the largest increases in provision have been in areas with the poorest provision in 2007.

The proportion of consultants combining rheumatology with acute medicine has fallen from 17% in 2007 to 15% in 2009, while the proportion combining rheumatology with a specialty other than acute medicine (most commonly rehabilitation and sports medicine) increased to 13%. The proportion of consultants combining rheumatology with acute medicine was higher in Scotland (32%), Wales (36%) and Northern Ireland (32%) than in England (14%). Since the 2007 update, the proportion of pure rheumatologists in the UK has fallen from 77% to 73%; in Wales this dropped from

Table 4. Number of whole-time equivalent (WTE) consultants and population per WTE.

	Number of consultants		Population per consultant		Number of WTE		Population per WTE		% optimal provision (ie one WTE per 86,000)			
NHSE region	2007	2009	2007	2009	2007	2009	2007	2009	2007	2009	Rank 2009 (2007)	% increase
Northern and Yorkshire*	60	66	105,717	96,106	49	54	129,448	117,463	66	73	7 (4)	7
Trent*	43	53	119,953	97,321	37	44	139,405	117,227	62	73	7 (7)	11
West Midlands*	55	56	97,000	95,268	48	48	111,146	111,146	77	77	5 (2)	0
North West*	67	69	98,657	95,797	54	55	122,407	120,182	70	72	9 (3)	2
Eastern*	48	55	113,750	99,273	41	48	133,171	113,750	65	76	6 (6)	11
London*	115	123	64,130	59,959	83	90	88,855	81,944	97	105	1 (1)	8
South East*	76	83	115,013	105,313	57	62	153,350	140,984	56	61	11 (9)	5
South and West*	43	58	115,698	85,776	36	50	138,194	99,500	62	86	2 (7)	24
England**	507	563	100,027	90,750	406	451	124,911	113,286	69	76	-	7
Scotland**	45	53	113,511	97,057	30	37	170,267	139,027	50	62	10 (11)	12
Wales**	28	33	106,321	90,303	23	28	129,435	106,429	67	81	3 (4)	14
North Ireland**	15	20	115,533	87,950	11	16	157,545	109,938	54	78	4 (10)	24
UK**	595	669	101,736	91,143	470	531	128,793	114,831	67	75	-	8

* Based on resident population estimates calculated in 1999 for mid-year 2000, by age, persons and Department of Health Regional Office areas.[4,5]

** Based on 2006 and 2007 populations taken from Health Statistics Quarterly 43 Autumn 2009.[14] NHSE = NHS Executive.

91% to 64% between 2007 and 2009. In total, 106 (21%) consultants reported having academic sessions. The working hours of an average UK full time consultant have reduced slightly from 41 hours per week (IQR 37, 45) in 2007 to 40 hours per week (IQR 37.5, 44) in 2009. Similarly, the median number of PAs has reduced from 11 (IQR 10–11) to 10.5 (IQR 10–11). The ratio of direct clinical care to supporting activities remained 3.1:1, a level consistent since the introduction of the new contract in 2005 and across the UK. The proportion of consultants working part time has decreased slightly from 30% to 26% between 2005 and 2009.

Since 2007, the proportion of consultants with sessions in primary care has increased from 9% (2007) to 15% (2009) (Table 5). There have been no changes in the proportion of consultants linked with ISTCs (<7%), or working in (<7%) CATs, although running services in conjunction with CATS has, in England, increased from 13% in 2007 to 17% in 2009. The median time from referral to a new patient appointment has reduced considerably across UK, most notably in Northern Ireland from 24 weeks (IQR 20, 26) in 2007 to nine weeks (IQR 9, 13) in 2009. England continues to have the shortest wait; the median wait is now six weeks (IQR 4, 8) compared with 9 (IQR6, 12) weeks in 2007. Waiting times in Scotland (median 14 weeks, IQR 11, 18) and Wales (median 12, IQR 10, 15) are at least twice as long as those in England. The reported waiting time in England meets the target outlined by the MSF, and this has been achieved in all regions.

The mean level of perceived job threat has decreased throughout the UK between 2007 and 2009 by 13 points (SD 27) (Fig 1). The median level of job threat for all regions is now below a quarter of the maximum score. The largest decreases in perceived job threat were seen in London (mean change −19, SD 29) and the North West (mean change −16, SD 26), areas with higher levels of provision in 2007. As levels of provision have become more homogenous across England, so too has perceived job threat. However, at the national level, consultants in England perceive greater job threat than those in Wales, Scotland and Northern Ireland, and despite large increases in consultant and WTE numbers and levels of optimal provision in Northern Ireland, median perceived job threat has decreased from 19 (IQR 1, 49) to nine (IQR 4, 34) between 2007 and 2009. At baseline (2007) consultants on part-time contracts perceived higher job threat (mean 40.7 *v* 34.9, p=0.073), but over time the perceived job threat reduced by a greater amount in part-time consultants (mean change -17.1 *v* -11.5, p=0.096), although neither was statistically significant.

Levels of reported job satisfaction are good for consultants across the UK, with a median score for overall perception of the job of 5 (on a scale ranging from 1 'extremely dissatisfied' to 7 'extremely satisfied') (Table 2). The lowest levels of satisfaction were for 'recognition for good work' (median 5 for England, 4 for Scotland, Wales and Northern Ireland), and highest scores for 'satisfaction with colleagues and fellow workers' and the 'amount of responsibility'. Consultants in Northern Ireland reported lowest levels for all specific aspects of satisfaction, although the overall rating of perception of the job was consistent with the rest of the UK. Consultants reported low likelihoods of changing their working life over the next five years, other than a slight likelihood of reducing work hours.

Table 5. Service delivery reflecting the musculoskeletal services framework by regional office of England, n (%).

	n†	Northern and Yorkshire	Trent	West Midlands	North West	Eastern	London and South East	South West
Service run in conjunction with local CAT centre	405	4 (8)	1 (3)	5 (12)	14 (25)	8 (21)	32 (23)	3 (7)
Consultants working in a CAT centre	407	0 (0)	0 (0)	3 (7)	4 (7)	0 (0)	4 (3)	2 (5)
Service run in conjunction with an ISTC	401	1 (2)	1 (3)	3 (7)	4 (7)	1 (3)	8 (6)	2 (5)
Consultants working in an ISTC	407	0 (0)	1 (3)	3 (7)	1 (2)	0 (0)	2 (1)	0 (0)
Asked to move sessions into primary care	404	5 (10)	5 (14)	13 (34)	8 (14)	7 (18)	19 (14)	3 (7)
Able to make consultant to consultant referrals	406	43 (84)	34 (89)	33 (83)	53 (93)	25 (66)	108 (78)	34 (79)
Consultant has a clinical nurse specialist	412	51 (96)	38 (100)	41 (100)	57 (100)	37 (97)	137 (96)	42 (98)
Consultant works with a GPwSI	415	10 (19)	11 (28)	11 (28)	7 (12)	5 (13)	37 (26)	4 (10)
New outpatient appointment wait (weeks)**	398	6 (4–8)	5 (4–6)	4.5 (4–6)	6 (5–8)	6 (5–8)	6 (5–8)	6 (4–8)

* for consultants replying; ** median (IQR), †for England. CAT = clinical assessment and treatment; GPwSI = GP with a special interest in rheumatology; ISTC = Independent sector treatment centre.

Discussion

The continued improvements seen in workforce provision over the past decade were evident in this latest update of the BSR/Arthritis Research UK Consultant Rheumatology Workforce Register. Moreover the pattern of inequalities seen previously now appears to be disappearing. The population served by a WTE rheumatologist continues to approach the recommended 86,000, shrinking to one per 114, 831 from one per 128,793 in 2007 and one per 191,913 in 1997.[5] However, provision in Scotland remains lower than the other three countries of the UK, despite having increased by 12% in the past two years, and waiting times in Wales and Scotland greatly exceed those in England. Within England, inequalities appear to have reduced; the largest gains in provision were seen in areas with the lowest provision in 2007. Similarly, levels of provision in 2009 (range 72–86%) are higher than in 2007 (range 65–81%[5]), despite changes in recommended levels of provision. Patient waiting times have reduced from nine weeks in 2007 to six weeks, meeting the targets set out in the MSF and suggesting that the policy has been effective in this regard.

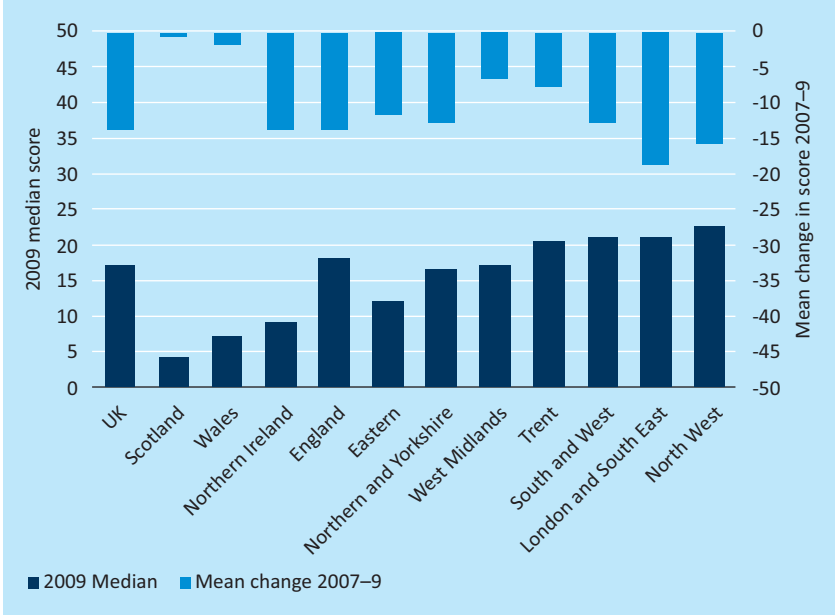

Fig 1. Concern that current job is under threat (0=not at all, 100=extremely).

The period between 2007 and 2009 has also seen an increase in service shifted towards primary care in England, which was a focus of the MSF. However, anxieties that rheumatology would be adversely affected by this development do not appear to have been expressed in dissatisfaction in working practices. Consultants in all regions of England have reported a reduction in their perceived job threat and also high levels of satisfaction within their job, although the latter are cross-sectional data which preclude insights into any correlation between levels of satisfaction and changes in working practices. The current economic climate is expected to lead to a drive towards austerity in the NHS and the impact of this may be evident in future reviews. It is anticipated that economic pressure may restrict future

consultant expansion but do not expect any reduction or increased threat to consultants who are already in post; the number of patients will not be reduced and the burden of rheumatological conditions is expected to increase as the age structure of the UK population increases. It is possible that levels of provision may regress if consultants who retire are not replaced due to recruitment freezes, and our results suggest that up to 13% of the consultant workforce may become eligible to retire over the next four years.

As levels of rheumatology provision increase, waiting times decrease, and levels of job satisfaction appear high, it would be reassuring to be able to document whether patient outcome and satisfaction have also increased. There are moves towards routine collection of patient-reported outcome measures (PROMs) throughout the NHS. For example, the Department of Health in the document *High quality care for all* proposes systematic measurement of patients' views on the success of their treatment through collection of PROMs.[16] It is anticipated that this will make healthcare providers more accountable, allow patients to choose where they receive treatment, and allow payments to healthcare provider to be conditional on quality measures, including PROMs, through the Commissioning for Quality and Innovation Framework.[17]

In summary, rheumatology service provision is moving towards the recommended WTE per 86,000 population. With dramatic changes in the scope of investigations and treatments available, it is important that the training, experience and numbers of the consultant workforce should match the needs of patients and general practitioners.

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