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Distribution of GPs in Scotland by age, gender and deprivation

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ABSTRACT

General practice in the UK is widely reported to be in crisis, with particular concerns about recruitment and retention of family doctors. This study assessed the distribution of GPs in Scotland by age, gender and deprivation, using routinely available data. We found that there are more GPs (and fewer patients per GP) in the least deprived deciles than there are in the most deprived deciles. Furthermore, there are a higher proportion of older GPs in the most deprived deciles. There are also important gender differences in the distribution of GPs. We discuss the implications of these findings for policymakers and practitioners.

Keywords: General practice, workforce, recruitment, retention, inequality

BACKGROUND

General practice in the UK is widely reported to be in crisis.^{1,2} GPs are struggling to cope with heavier workloads coupled with a relative reduction in resources. Demands on primary care have increased as a result of an ageing and increasingly multimorbid population, as well as a transfer of work from hospitals (and elsewhere) to general practices.³ Resources, however, have not matched this increased demand. In Scotland, the share of NHS funding spent on general practice has fallen from 9.8% in 2005/06 to a record low of 7.8% in 2012/13.³ The stakes here are high. With around 90% of patient contacts taking place in primary care, the future of the NHS depends largely on the health of general practice.

Unsurprisingly, the current situation is putting a strain on GP recruitment and retention, at a time when GPs face later retirement and smaller pensions. A recent BMA survey suggested that one in

three Scottish GPs were hoping to retire within the next five years.⁴ At the other end of the age spectrum, 19% of GP trainees and 16% of those qualified in the last 10 years said they intended to leave the UK to work overseas in the next 5 years.⁴ At present, many practices are struggling to fill vacancies or to recruit locums.⁵ Meanwhile, across the UK, applications for GP training fell for a second successive year, with many training posts unfilled.⁶

As well as concerns about a shortfall in total numbers of GPs, there are also concerns in some quarters about the so-called “feminisation” of the workforce – the increasing number of women GPs as a proportion of the total – and the effects on service provision associated with this.⁷ It is important and timely, therefore, to understand the current demographics of the GP workforce in Scotland, and to reflect on the potential implications for workforce planning and resource allocation in the years ahead. A further dimension of interest in the current context is the impact of the GP workforce on health inequalities, and the inverse care law in particular. The distribution of GPs in Scotland will, therefore, also be examined by practice deprivation.

METHODS

Information on numbers and gender of GPs for all general practices in Scotland was obtained from ISD Scotland based on data at the 1st January 2015.⁸ To assess differences in the age distribution of GPs, data on individual GPs was grouped in five year spans, which were then combined into four larger age bands (under 40, 40-49,50-59 and over 60) for analysis by deprivation. We estimated the number of whole-time equivalent (WTE) GPs using estimates taken from the Primary Care Workforce Survey for Scotland in 2013.⁹ Estimates for the ratio of the number of GPs to WTEs at health board level were given to each practice in that particular health board. The number of patients per WTE and the number of patients per GP were then calculated for each practice and compared by deprivation decile.

The Primary Care Workforce Survey, from which these estimates are taken, found that the total estimated number of WTE GPs in post in Scottish general practices (excluding Specialist Trainees)

at 31 January 2013 was 3,735. The total number of GPs included in this analysis is 4,922, which is considerably larger than the WTE estimate because many GPs do not work full-time.

Deprivation was measured using the Scottish Index of Multiple Deprivation (SIMD).¹⁰ Practices were divided into deciles based on the percentage of patients in the top 15% of the most deprived postcodes and then weighted by population and overall SIMD score.

RESULTS

Table 1 shows the distribution of general practices and GPs in Scotland by deprivation decile. The most deprived decile had the most practices with 120 (12.3% of total), but the smallest average list size of 4,595 patients, which may reflect a greater proportion of small and singlehanded practices. In contrast, the least deprived decile had fewer practices (8.5%), but the highest average list size at 6709 patients. There are more GPs in the five least deprived deciles (2640, 54%) than there are in the five most deprived deciles (2282, 46%).

Table 1: Distribution of GPs and general practices in Scotland by deprivation.

Deprivation decile	Number of practices (%)	Total Patients (%)	Average List size	Number of GPs (%)
Least deprived	83 (8.5)	556,927 (10.1)	6709	536 (10.8)
2	106 (10.9)	560,561 (10.1)	5288	551 (11.2)
3	103 (10.6)	548,009 (9.9)	5320	529 (10.7)
4	97 (10.0)	557,281 (10.1)	5745	494 (10.0)
5	99 (10.2)	551,553 (9.8)	5571	530 (10.8)
6	92 (9.5)	562,627 (10.2)	6115	466 (9.5)
7	88 (9.0)	542,200 (9.8)	6161	442 (9.0)
8	95 (9.8)	573,706 (10.4)	6039	436 (8.8)
9	91 (9.3)	534,425 (9.6)	5872	439 (8.9)
Most deprived	120 (12.3)	551,449 (9.9)	4595	499 (10.1)
Total	974	5,538,738	5666†	4922

†This is the overall average list size

Figure 1 shows the distribution of GPs by age group for males and females. The younger age groups were dominated by female GPs with the majority of female GPs aged under 45 (58.8%

compared to 41.8% of male GPs). By contrast, the proportion of older GPs who are male is considerably higher, with just under a quarter (24.8%) aged 55 and over, compared to 10.8% of female GPs. In total 53.2% of GPs were female. Female GPs were more likely to be located in less deprived practices with the three least deprived deciles averaging around 55% of GPs being female compared to 52% in the three most deprived deciles.

Figure 1: Distribution of GPs by Age group and Gender

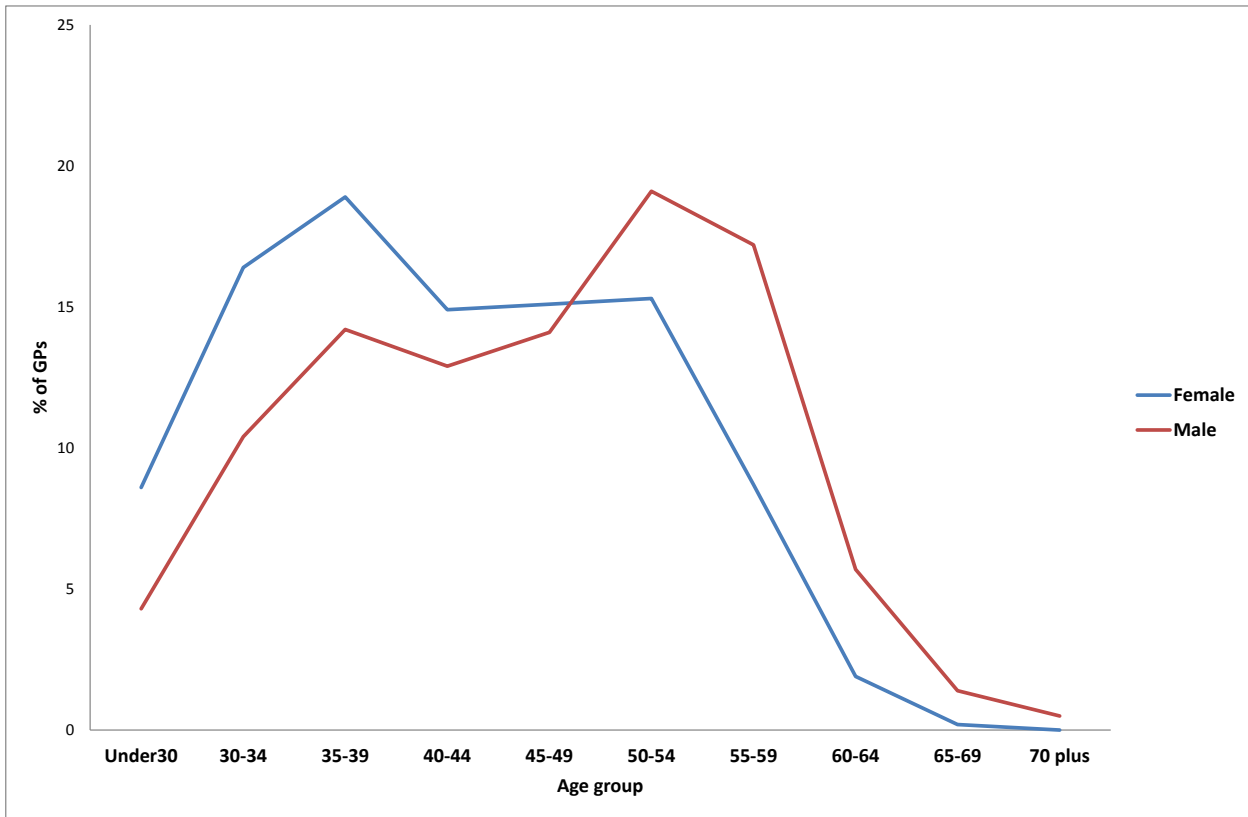


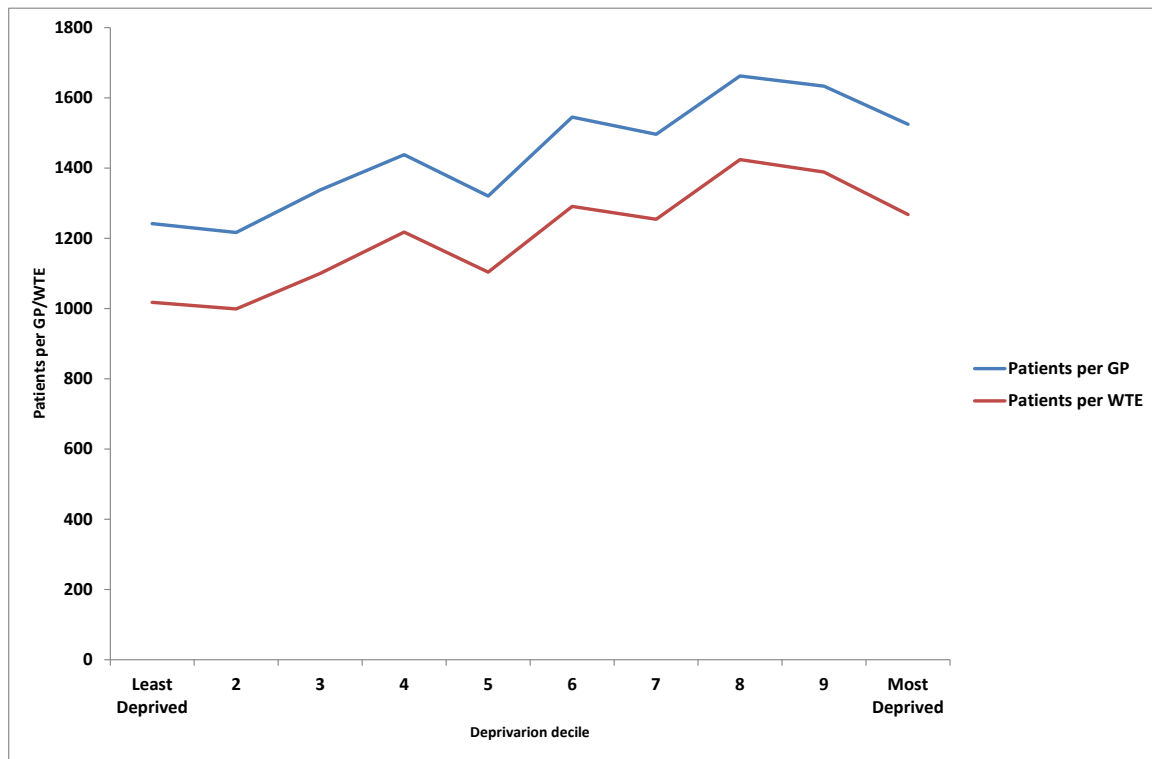
Table 2 shows the distribution of GPs for age groups by deprivation decile. Younger GPs were generally concentrated in the least deprived areas with the least deprived decile having 41.5% of their GPs aged under 40 compared to just 32.6% in the most deprived decile. The most deprived decile had the oldest GPs with 36.8% of their GPs aged 50 and over, including 5.6% aged over 60. This compared to 31.1% aged over 50 and 3.2% aged over 60 in the least deprived decile.

Table 2 Distribution of GPs for age groups by deprivation decile

	Under 40	40-49	50-59	60 plus
Least deprived	222 (41.5)	147 (27.5)	149 (27.9)	17 (3.2)
2	208 (37.0)	167 (29.7)	162 (28.8)	25 (4.4)
3	204 (38.2)	156 (29.2)	156 (29.2)	18 (3.4)
4	180 (37.3)	154 (31.9)	125 (25.9)	24 (5.0)
5	197 (37.1)	139 (26.2)	173 (32.6)	22 (4.1)
6	204 (41.9)	124 (25.5)	136 (27.9)	23 (4.7)
7	167 (37.4)	122 (27.4)	137 (30.7)	20 (4.5)
8	168 (37.9)	116 (26.2)	137 (30.9)	22 (5.0)
9	152 (34.9)	139 (32.0)	123 (28.3)	21 (4.8)
Most deprived	162 (32.6)	152 (30.6)	155 (31.2)	28 (5.6)
Total	1864 (37.6)	1416 (28.6)	1453 (29.3)	220 (4.4)

Figure 2 shows the number of patients per GP and estimated number of patients per WTE by deprivation. Both indicators show the same general trend with higher number of patients with increasing deprivation. The highest number of patients was found for decile 8 with 1662 patients per WTE and 1388 patients per GP. The most deprived decile had 1552 patients per WTE and 1268 per GP compared to 1242 per WTE and 1017 per GP in the least deprived decile.

Figure 2 Number of patients per WTE/GP by deprivation decile



DISCUSSION

Summary

This paper provides an up-to-date picture of GP demographics in Scotland. The main findings are as follows. First, the distribution of general practices and GPs is broadly flat across the social gradient, with relatively more practices, but fewer GPs, in the more deprived deciles. This is likely to reflect a greater proportion of single-handed and small practices in deprived areas compared to more affluent areas. The finding of fewer GPs in the more deprived deciles has significant implications for the ability of general practice to address the inverse care law, which has not been seriously challenged in the forty years since it was first described.¹¹ There are well recognised gradients of increasing health problems and medical need across the social spectrum from the most affluent to the most deprived communities.¹² The current distribution of GPs results in the situation, which has been well characterised by the “GPs at the Deep End” group,¹³ where GPs in

the most deprived areas are struggling to keep their heads above water, often only able to scratch the surface of patients' health problems.

The second notable finding from the present study is the relatively high proportion of older GPs in the most deprived decile. 36.8% of GPs in the most deprived decile are aged 50 and over, including 5.6% aged over 60. This compares to 31.1% aged over 50 and 3.2% aged over 60 in the least deprived decile. The reasons for this are unclear, but the implications are that there will be a number of practices in the most deprived areas who will shortly be losing very experienced GPs, with many years of knowledge of these areas (facilitated by the now historic need for GPs to live near their practice in order to cover out-of-hours commitments). Recruitment to deprived areas has previously been shown to be more challenging than recruitment to more affluent areas.¹⁴ It is not hard to imagine, therefore, that some of these practice posts may be filled by locum or salaried GPs, or may not be replaced at all. At the very least, this may lead to discontinuity as well as helping to perpetuate the inverse care law.

The third key finding relates to the gender distribution of GPs. The proportion of older GPs who are male is considerably higher, with just under a quarter (24.8%) aged 55 and over, compared to 10.8% of female GPs. The greater proportion of younger GPs who are female reflects the trend of increasing numbers of women entering the medical profession, and general practice in particular. The implications of this trend are that women are more likely to take time out of practice to have (and look after) children and are more likely to return to work part-time, if they return at all. In recognition of the difficulties faced by many GPs, particularly women, when planning a return to general practice after a period away, a national 'returners' scheme was launched in March 2015.¹⁵

Strengths and limitations

The main strength of this study is its use of the most recent available data on GP demographics and general practices in Scotland. Our findings are from a complete national health system using all Scottish practices and measuring deprivation based on patient postcodes rather than practice

postcodes.¹⁶ It provides a pragmatic snapshot of the current situation at a time when the GP workforce – and therefore the future of the NHS – is under considerable pressure.

There are a number of limitations of this study. First, it is a cross-sectional snapshot and does not attempt to chart changes in GP demographics over time, or model changes going forward. Second, the data on WTE GPs are not up-to-date and may not be accurate as they are based on estimates provided in 2013 which are limited in their scope. Since 2003/04 general practices are no longer required to report numbers of WTE GPs to ISD Scotland and though attempts have been made to continue collecting this data, the reluctance of a number of practices to supply this data means it is no longer available at practice level, This makes more informed discussion of workforce resourcing and planning very difficult.

Finally, there are important questions about the quality of the GP workforce that are not taken into account by this analysis of quantity of workforce. For instance, it is very difficult to measure the cumulative knowledge and experience that older GPs possess, though it is reasonable to assume that this cannot be replaced quickly. The NHS in Scotland does not just need GPs, it needs GPs who will lead in the development of integrated local health systems. These questions are, however, beyond the scope of the present study.

Comparison with existing literature

The findings presented in this study are supported by previous research. For instance, the flat distribution of GPs across Scotland and the implications of this for addressing the inverse care law have been reported elsewhere.^{17,18} The increasing feminisation of the GP workforce has also been well documented. Compared to other medical specialties, general practice is considered to be more flexible both in terms of the training itself, and in subsequent workplace arrangements.^{19 20} There are also sociological explanations of gender segregation of medical work.²¹

Some (usually male) commentators have expressed specific concerns about the gender imbalance in general practice and suggested that we either need to encourage more men to enter general practice, or encourage women to work longer hours.²² Others, such as Howe, have pointed out the many reasons to celebrate the rise of women in family medicine.²³ They call instead for a change to the male-dominated culture of medicine.²⁴

A more practical response might be to acknowledge the growing number of GPs – male and female – who have become accustomed to shorter (though arguably more intensive) hours and portfolio careers as being the new norm. Key questions then draw more sharply into focus: as older GPs retire, are these younger cohorts able to adequately replace them, at their current levels of service provision? What are the impacts on continuity of care and patient outcomes? Given the predicted increased needs of an ageing population and the prospect of some GPs taking early retirement, what policy options are available to address the GP shortfall?

A study on GP workforce published in 2010 from Ireland – a country with a comparable population to Scotland and a similar number of GPs – assessed possible approaches to their predicted GP shortfall by modelling 4 different policy interventions: increasing vocational training places; recruiting GPs from abroad; incentivising later retirement for existing GPs; and increasing nurse substitution to enable practice nurses to deliver more services.²⁵ The authors concluded that, *"[d]ue to the scale of the predicted shortfall in GP supply, use of a combination of interventions would be more pragmatic than adoption of a single intervention policy."*²⁴

Implications for clinicians and policymakers

There is increasing evidence that general practice in the UK is struggling at present. Concerns about increasing GP workload, lack of resources and pensions reform have led to predictions of a significant proportion of GPs emigrating or taking early retirement.²⁴ This study has drawn attention to two well recognised trends in GP demographics. The increasing feminisation of the GP workforce should be embraced not resisted, but full consideration must be given to service

provision implications. These findings also suggest that, as more GPs in the most deprived decile of practices approach retirement age than those in any other decile, it is the more deprived communities that will be most affected by this transition.

There are a number of proposed solutions to these issues. The Royal College of GPs in Scotland have recently published a “Blueprint for Scottish general practice”.³ This sets out five key strategies to secure the future of general practice in Scotland, including sustained investment in general practice and GP infrastructure. Under the strategy of ‘Expanding the number of GPs’, they urge the Scottish Government to take the following actions:

- Set a clear objective to increase the number of Whole Time Equivalent GPs in Scotland
- Launch a high profile marketing campaign to promote general practice as a career
- Incentives to attract new doctors into general practice, particularly in under-doctored areas
- A large scale campaign to promote the national GP Induction and Returner Programmes
- Increased investment in the national retainer programme, including a review to identify the most effective measures to encourage experienced GPs to remain within practice

Other suggestions to improve the so-called ‘3 Rs’ of Recruit, Retain and Return, include reviewing the GP recruitment process, developing a pre-GP year for prospective applicants, and careers advice for foundation doctors and medical students.²⁶ These are all potentially useful strategies that merit further exploration. However, the most challenging question of how you recruit and retain GPs in under-doctored areas will remain an intractable one as long as the underlying problem of under-investment in primary care in these areas persists.

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