General practitioner turnover and migration in England 1990–94

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SUMMARY

Background. *In tandem with fears about a GP workforce crisis, increasing attention is being focused on the supply and distribution of primary care services: on general practitioners in particular. Differential turnover and migration across health authority boundaries could lead to a maldistribution of GPs, yet comprehensive studies of GP turnover are non-existent.*

Aim. *To quantify general practitioner (GP) turnover and migration in England from 1990 to 1994.*

Method. *Yearly data from 1 October 1990 to 1 October 1994 were collected on GPs in England practising full time, including average yearly turnover, rates of entry to and exit from general practice, and net migration among GPs. All were calculated at the family health service authority (now the new health authorities) level.*

Results. *Average yearly GP turnover ranges from 2.9% in Shropshire to 7.8% in Kensington, Chelsea and Westminster; turnover is associated with deprivation and high-need areas. Migration of GPs across health authority borders was rare. Entry and exit rates were also positively related to measures of deprivation and need. Relatively underprovided health authorities lost 23 GPs over the study period as a result of migration; relatively overprovided ones gained three.*

Conclusion. *Turnover is driven primarily by exits from general practice and is related to deprivation and high need. Retention appears to be the main problem in ensuring an adequate GP supply in relatively deprived and underprovided health authorities.*

Keywords: GP statistics; workforce; GP migration; GP turnover.

Introduction

THE reduction in average list size and the equalization of general practitioner (GP) distribution since the late 1940s is a success of the NHS.[1-3] In spite of this, increasing attention is being focused on overall supply and relative distribution of primary care services,[5-9] and of GPs in particular.[3,10] Differential turnover and migration across health authority boundaries could lead to a maldistribution of GPs, may identify areas with recruitment and/or retention problems, and may complicate the planning function of health authorities. However, empirical studies of turnover among NHS employees are rare,[11-15] and comprehensive studies on GP turnover are non-existent.

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Method

This paper quantifies the rate of turnover, entry to and exit from general practice, and migration across health authority boundaries among GPs, all calculated at the family health service authority (health authority) level. The General Practitioner Census provides a comprehensive data source for studying such changes. These data are aggregated by the STATS GMS division of the NHS Executive (which collects information from health authorities) and provide information on all qualified GPs practising in the National Health Service (NHS) in England and Wales. Previous studies have found small discrepancies (3–4%) between actual address and database address.[16] We analysed data for five points in time: 1 October of each year from 1990 to 1994. The analysis focused on England because Welsh health authorities had neither high nor low rates of turnover and because several measures used to investigate the correlates of turnover and migration were not available for Welsh health authorities. The data were analysed using Paradox for Windows, Microsoft Excel, and SPSS 6.13 for Windows.

Definition of turnover

Turnover is the general concept of members of a workforce leaving their job voluntarily.[11,12] The term is defined in various ways and may not always be comparable across studies. Turnover was defined in this study as the number of GPs who left general practice plus those who migrated to another health authority divided by those who left or moved plus those who continued practising in the same health authority over a one-year period:

(GPs who left general practice + those who migrated to other health authorities)/
(Those who left practice or moved + those who stayed)

The average yearly turnover rates at the health authority level was used to provide a more stable estimate of yearly GP turnover over the entire study period.

Net migration at the health authority level was calculated over the entire study period and was defined as the net change in number of GPs in a health authority as a result of migration across health authority boundaries. Rates of GP entry to and exit from health authorities were calculated by dividing total movements in and out, respectively, over the study period by the average total of unrestricted GPs over the study period. We could not identify GPs who changed practice locations but remained in the same health authority because we did not have postal addresses. Such GPs are not included in the numerator of the turnover or migration calculations. Turnover and migration were calculated for GPs practising on a full-time basis only, as those practising part time were likely to be more unstable; this resulted in a conservative estimate of the magnitude of turnover and migration.

Results

Average yearly turnover rates varied by health authority from 2.9% in Shropshire to 7.8% in Kensington, Chelsea and Westminster (Table 1). The major factor influencing turnover was GPs leaving general practice altogether. Of the 24 107 full-time unrestricted GPs practising in England on 1 October 1990, only 319 (1.3%) had migrated to a different health authority and

Table 1. Average yearly turnover, exit and migration rates 1990–94: seven highest and seven lowest average yearly turnover rates.

Health authority	Average yearly rates 1990–94			Average full-time GPs 1990–94	Index of GPs weighted for age and need (England = 100)	Average number of patients from deprived areas 1994
	Turnover (%)	Exit (%)	Migration (%)			
Kensington, Chelsea and Westminster	7.8	7.3	0.6	176	100.5	866
Newcastle	7.5	6.1	1.4	139	92.0	416
Redbridge and Waltham Forest	7.5	6.3	1.2	215	98.1	220
Liverpool	7.2	5.9	1.3	226	83.7	400
Ealing, Hammersmith and Hounslow	6.8	5.2	1.6	350	104.0	475
Gateshead	6.8	6.1	0.7	103	88.7	198
Sefton	6.8	6.1	0.7	140	87.1	88
England average	4.7	4.0	0.6	265	98.3	212
Isle of Wight	3.3	3.3	0.0	68	101.4	0
Cornwall & Isles of Scilly	3.2	3.1	0.1	267	110.0	0
North Yorkshire	3.2	3.2	0.0	386	112.1	0
Hillingdon	3.0	2.8	0.2	115	103.2	9
Dudley	3.0	2.8	0.2	135	94.8	4
Wigan	2.9	2.6	0.4	136	81.2	0
Shropshire	2.9	2.6	0.3	201	106.8	16

Exit is the rate at which GPs were leaving general practice. Migration is the rate at which GPs were moving to other health authorities to practise. Turnover is the sume of the other two rates. The measure of under/overprovision of GP services is from Hacking.[10]

were practising there on 1 October 1994.

Average yearly turnover was positively related to several measures of deprivation and need. There was a moderate correlation between the average number of patients from deprivation bands 1 to 3 (aggregated) per full-time unrestricted GP and the average yearly turnover rate (0.419, $P = 0.000$). Average yearly turnover was positively associated with the Benzeval and Judge[3] measure of health authority need for GP services (0.367, $P = 0.000$). Hacking's[10] measure of relative under/overprovision of GP services was not related in a statistically significant manner (–0.134, $P = 0.209$) to average yearly turnover.

The health authorities with high rates of GPs exiting also tended to have high rates of GPs entering (0.697, $P = 0.000$). The entry and exit rates were also moderately correlated with the average number of total deprived patients per GP (0.366, $P = 0.000$ for the exit rate, 0.267; $P = 0.000$ for the entry rate). The average yearly rate of GPs exiting was significantly associated with the Benzeval and Judge[3] measure of need (0.214, $P = 0.04$), but the average yearly rate of entry was not (0.09, $P = 0.41$).

Table 2 shows the health authorities with the largest net change in full-time unrestricted GPs as a result of cross-health authority migration during the study period. The largest net loss of GPs by a health authority owing to migration in absolute terms was 12 both in Brent and Harrow and in Hertfordshire; the largest net gainers were Leicestershire and Kent, which gained seven GPs (not shown in Table 2). Those health authorities that were more than one standard deviation (10.1) below the mean value (98.3) on the Hacking[10] measure (showing relative underprovision of GP services weighted for need) had a net loss of 23 GPs to migration over the study period, whereas those more than one standard deviation above the mean (relative overprovision) gained three GPs.

Discussion

General practitioner turnover is of concern because it may reduce the stability of the primary care workforce in a particular practice and area,[14] may be a marker of areas likely to experience problems with recruitment and/or retention, and may complicate strategic planning in primary care. What rate of turnover is too high is not clear. In comparison with selected NHS staff, GP turnover is actually quite low.[12,13] GP turnover before the study period and turnover among consultants in the NHS over the same period are not known.

Retention appears to be the most pressing problem in relatively deprived and high-need areas. Although GPs are moving into these areas, they are also moving out at a similar rate. This shows that the Medical Practices Committee is successful in filling practice vacancies, but that this does not guarantee their long-term tenure. It is not clear whether this pattern would continue if the Medical Practices Committee did not control location decisions; it is possible that maldistribution of GPs would worsen if this were the case.

Health authorities tend to lose GPs when they leave general practice altogether, not when they move elsewhere to practice. However, the most underprovided health authorities lost 23 full-time GPs to migration, whereas the most overprovided gained three. These are not large changes, but they raise concerns, along with the findings in two recent papers,[3,10] that there is a residual maldistribution of GPs in spite of long-standing policy efforts, which have generally ensured a relatively even distribution. This situation should be monitored closely.

Special policies to increase the retention of GPs in deprived and high-need areas may be required to increase stability in primary care in these vulnerable areas. However, the long-term goal should be to build incentives into a primary care led NHS, whereby resources follow patient needs. A needs-based funding formula similar to the one used for secondary care is needed to put resources where they are most required, a step that might increase the stability of GP supply in such areas.[17,18] This is not a novel suggestion,[3] and work in this area is under way.[19,20] Developing and implementing such a methodology is crucial if retention problems in deprived and high-need areas are to be addressed comprehensively.

References

1. Medical Practices Committee. *Notes on guidance for family health services authorities*. London: MPC, 1991.
2. Butler JR. *Family doctors and public policy*. London: Royal College of Physicians, 1973.

Table 2. Net flow of GPs who migrated across health authority boundaries 1990–94: seven highest and seven lowest rates.

Health authority	% change in full-time GPs 1990–94	Net migration full-time GPs 1990–94	Average full-time GPs 1990–94	Weighted for age and need (England=100)	Patients from deprived areas 1994
South Tyneside	–7.8	–6	77.3	85.6	191
Brent and Harrow	–4.6	–12	259.3	124.2	458
Solihull	–3.8	–4	104.0	102.0	4
Greenwich & Bexley	–3.0	–6	198.3	90.3	320
Manchester	–3.0	–7	232.0	87.0	568
Salford	–2.5	–3	121.3	87.5	289
Hertfordshire	–2.4	–12	505.0	112.2	0
England average	N/A	N/A	265.3	98.3	212
Kingston and Richmond	2.0	3	146.3	107.9	0
Sandwell	2.1	3	144.5	84.2	428
Wigan	2.2	3	136.3	81.2	0
Hillingdon	2.6	8	115.0	103.2	9
Gateshead	2.9	3	102.5	88.7	198
Northumberland	3.2	5	157.8	106.7	25
Dudley	3.7	5	134.8	94.8	4

The measure of under/overprovision of GP services is from Hacking.[10]

3. Benzeval M, Judge K. Access to health care in England: continuing inequalities in the distribution of GPs. *J Public Health Med* 1996; **18:** 33-40.
4. General Medical Services Committee. *Medical Workforce Task Group report.* London: BMA, February, 1996.
5. Olsen, ND. Sustaining general practice. *BMJ* 1996; **312:** 525-526.
6. Anonymous. Report highlights recruitment crisis in general practice. *BMJ* 1996; **312:** 514.
7. Review Body on Doctors' and Dentists' Remuneration. *Twenty-fifth report, 1996.* London: HMSO, 1996.
8. Mihill C. Dwindling GPs mean crisis ahead for NHS. *The Guardian* 22 February 1996, p. 9.
9. Taylor Jr, D, Leese B. Recruitment, retention and time commitment change of general practitioners in England and Wales, 1990–4: a retrospective study. *BMJ* 1997; **314:** 1806-1810.
10. Hacking J. Weight watchers. *Health Serv J* 1996; **2 May:** 28-30.
11. Bartholomew DJ, Forbes AF. *Statistical techniques for manpower planning.* Chichester: John Wiley & Sons, 1979.
12. Gray AM, Phillips VL. Labour turnover in the British National Health Service: a local labour market analysis. *Health Policy* 1996; **36:** 273-289.
13. Gray AM, Phillips VL. Turnover, age and length of service: a comparison of nurses and other staff in the National Health Service. *J Adv Nursing* 1994; **19:** 819-827.
14. Cavanagh SJ. Nursing turnover: literature review and methodological critique. *J Adv Nursing* 1989; **14:** 587-596.
15. Barnett JR. How long do general practitioners remain in any one location?: regional and urban size variations in the turnover of foreign and New Zealand doctors in general practice, 1976–90. *N Z Med J* 1992; **105:** 169-171.
16. Sibbald B, Addington-Hall J, Brenneman D, Freeling P. Counsellors in English and Welsh general practices: their nature and distribution. *BMJ* 1993; **306:** 29-33.
17. Mays N. NHS resource allocation after the 1989 white paper: a critique of the research for the RAWP review. Community Medicine 1989; **11:** 173-186.
18. Judge K, Mays N. A new approach to weighted capitation: more sensitive indicators of need but important policy questions remain unanswered. *BMJ* 1994; **309:** 1031-1032.
19. Carr-Hill RA, Rice N, Roland M. Socioeconomic determinants of rates of consultation in general practice based on fourth national morbidity survey of general practices. *BMJ* 1996; **312:** 1008-1013.
20. Sheldon TA, Smith P, Borowitz M, *et al.* Attempt at deriving a formula for setting general practitioner fundholding budgets. *BMJ* 1994; **309:** 1059-1064.

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