Rose Atkins, Jon Gibson, Matt Sutton, Sharon Spooner and Katherine Checkland

Trends in GP incomes in England, 2008–2017:

a retrospective analysis of repeated postal surveys

Abstract

Background
There is widespread concern over the recruitment and retention of GPs in England. Income is a fundamental consideration affecting the attractiveness of working in general practice.

Aim
To report on trends in average incomes earned by GPs in England, adjusted for inflation and contracted time commitment.

Design and setting
Postal surveys of random samples of GPs working in England in 2008, 2010, 2012, 2015, and 2017.

Method
Trends in average reported incomes of partner and salaried GPs were directly standardised for the reported number of sessions worked per week and adjusted for inflation.

Results
Data were obtained from between 1000 and 1300 responders each year, representing response rates between 25% and 44%. Almost all responders (96%) reported the income they earned from their job as a GP. Mean nominal annual income decreased by 1.1% from £99 437 in 2008 to £98 373 in 2017 for partner GPs and increased by 4.4% from £49 061 to £51 208 for salaried GPs. Mean sessions worked decreased from 7.7 to 7.0 per week for partner GPs and decreased from 5.6 to 5.3 per week for salaried GPs. Mean income adjusted for sessions worked and inflation decreased by 10.0% for partner GPs and by 7.0% for salaried GPs, between 2008 and 2017.

Conclusion
The decrease in GP income adjusted for sessions worked and inflation over the last decade may have contributed to the current problems with recruitment and retention.

Keywords
general practice; health workforce; hours; income; recruitment and retention.

INTRODUCTION

There are major concerns over the recruitment and retention of GPs in England. Between 2017 and 2018 the percentage of trainee doctors reporting an intention to specialise as GPs fell from 21.4% to 18.7%.[1] The government commissioned the GP Taskforce to recommend how the number of GPs could be increased but current GP numbers remain below target.[2]

As of March 2018, there were 34 435 GPs (excluding registrars, retainers, and locums) working in England. This equates to 27 773 full-time equivalent GPs.[3] Between September 2015 and June 2017 the number of full-time equivalent GPs in England fell by 4.7%.[4] GPs leaving the profession cite growing workload as a key factor in their decision.[5,6] Workload pressures are also causing more GPs to work part time.[7] As of June 2018, 38% of full-time partner GPs are aged ≥50 years, adding a further strain on the workforce as many of them start considering retirement.[3]

Income and wages vary substantially between GPs,[8] and have been shown to influence doctors' choice of job and practice location.[9–11] It is therefore important to understand how GP income has fared as workload has increased.

The current evidence on GP earnings in England is produced by the national healthcare statistics agency, NHS Digital. Its 2018 report showed the average income before tax of partner GPs in England has decreased by 14.6% in real terms between 2007/2008 and 2016/2017; although income has increased by 3.1% since 2015.[12] For salaried GPs in England, NHS Digital found a decrease of 13.2% in real terms during this period. It is possible that this downward trend in GP income is contributing to the problems of recruitment and retention. This downward trend in income is not seen for doctors working in hospitals, which is reported as a more appealing career option for doctors in training.[13–15]

There are several limitations to the national statistics on GP earnings. The earnings figures produced by NHS Digital are based on the self-assessment tax database held by Her Majesty's Revenue and Customs (HMRC). They include employment income from NHS and private work. Private work can be done inside and outside the practice, and includes NHS out-of-hours services.[16] This private work is not necessarily GP-related, and therefore these figures are likely an upwardly biased representation of earnings from GP work. The NHS Digital sample excludes registrars, retainers, and locums, and GPs with incomplete information. The results are weighted up to the full population to

R Atkins, BA, MSc, PhD researcher; **J Gibson**, BA, MSc, PhD, PG Dip, research fellow; **S Spooner**, PhD, FRCGP, academic clinical lecturer; **K Checkland**, BMedSci, MA(Econ), PhD, MRCGP, professor of health policy and primary care; GP, Health Organisation, Policy and Economics (HOPE), Centre for Primary Care and Health Services Research, University of Manchester, Manchester, UK. **M Sutton**, BA, MSc, PhD, chair of health economics Health Organisation, Policy and Economics (HOPE), Centre for Primary Care and Health Services Research, University of Manchester, Manchester, UK; Melbourne Institute: Applied Economic and Social Research, University of Melbourne, Melbourne, Australia.

Address for correspondence
Rose Atkins, Health Organisation, Policy and Economics (HOPE), Centre for Primary Care and Health Services Research, University of Manchester, 6.25 Williamson Building, Oxford Road, Manchester M13 9PL, UK.
Email: rose.atkins@postgrad.manchester.ac.uk

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How this fits in

National statistics show that average GP income in England has been stable in nominal terms over the last decade and has not kept pace with inflation. The results of this study show that, in part, this reflects a decrease in average contracted time commitment. Nonetheless, average incomes adjusted for inflation and time commitment have fallen by up to 10%. This may have contributed to current recruitment and retention problems.

account for exclusions.[16] However, while the sample analysed is very large, the proportion of total GPs dropped at each stage of the sampling process is not reported. A further limitation is that these figures do not consider changes in working patterns, such as the increase in part-time work.[7]

In this article, repeated, nationally representative, cross-sectional samples are used to provide temporal trends in incomes earned by GPs in England, taking account of changes in contracted time commitment and adjusting for inflation. This article adds to the literature by presenting figures that represent income earned solely through GP work. Furthermore, the figures are standardised for the number of sessions worked to allow for changes in part-time work.

METHOD

Data

Data were obtained from five waves of the national GP worklife survey.[17] The survey is posted to a random, cross-sectional sample of partner GPs and salaried GPs working in England approximately every 2 years. Data are collected on job satisfaction, stressors, hours of work, and intentions to quit.

Response rates to each survey were: 44.2% in 2008 (1304 of the 2953 targeted), 34.9% in 2010 (1040/2980), 39.7% in 2012 (1189/2995), 34.3% in 2015 (1172/3420), and 25.2% in 2017 (996/3953).

The responders are broadly representative of GPs in England. However, GPs who indicated that they were partners and GPs aged in their 50s are over-represented, while GPs aged <35 years are under-represented.[17]

Responders were asked: 'What is your total individual annual income from your job as a GP? This is the amount you receive before taxes but after deducting allowable expenses.' The responders were asked to select one of eight income bands (Box 1). Of the 5701 responders, 225 (3.9%) did not report their annual income and were therefore not included.

Results are presented separately for partners and salaried GPs based on responses to the question 'Which of the following types of contract/employment model do you hold (please tick all that apply)?'. A total of 69 responders for whom this information was missing or who ticked multiple categories were excluded, as were 26 responders who reported working only as a locum.

Responders were asked to indicate which sessions they worked in a typical week using a grid indicating days of the week and sessions of the day. Each day was split into three sessions (morning, afternoon, and evening). This information was missing for 71 responders so they were excluded. Fourteen responders who reported working more than 14 sessions in a week were also excluded. Fourteen sessions was used as a cut-off point because after this point the responses become very sparse and it is unlikely that a responder will regularly be working more than 14 sessions a week. Figure 1 shows how the final samples were determined.

Analysis

Interval regression models were used to obtain mean incomes within each band based on the proportions reporting each band.[18] These regression models were estimated separately for each contract type and year. The predicted mean incomes for each band and the number of responders in each income band were then used to generate the overall mean income for each contract type, in each year.

Direct standardisation was used to calculate mean income standardised for

Box 1. Income bands presented in the GP worklife surveys[18]

	Income bands, £	
Band	**2008**	**2010–2017**
1 (Lowest)	<25 000	<50 000
2	25 000 to 49 999	50 000 to 69 999
3	50 000 to 74 999	70 000 to 89 999
4	75 000 to 99 999	90 000 to 109 999
5	100 000 to 124 999	110 000 to 129 999
6	125 000 to 149 999	130 000 to 149 999
7	150 000 to 174 999	150 000 to 169 999
8 (Highest)	≥175 000	≥170 000

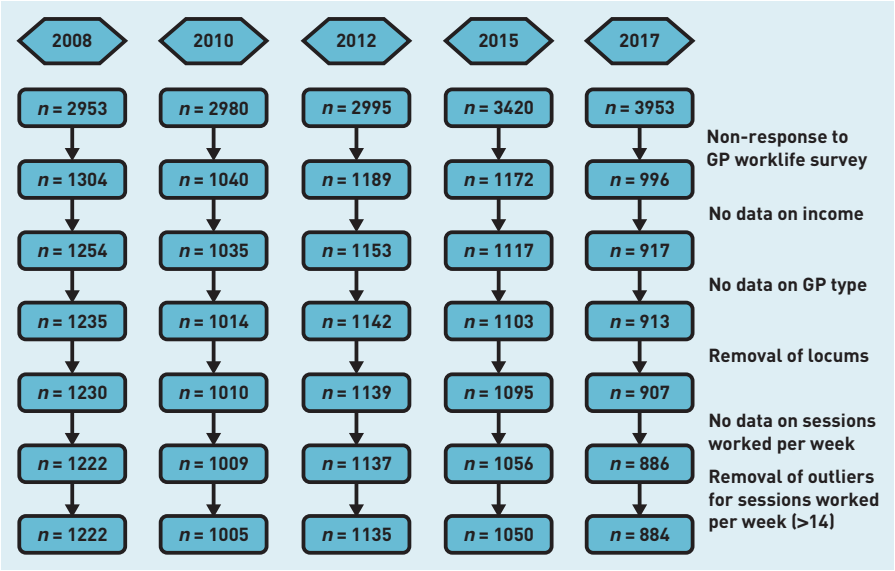

Figure 1. Process to show how final samples were determined from each GP worklife survey.

the distribution of the number of sessions worked. In each year average income was estimated for each value of the number of sessions the GP works on average in a week. These values were then applied to the distribution of sessions worked in 2017 to calculate average incomes in each year if GPs had worked the same distribution of sessions reported in 2017.

Finally, the average nominal incomes and standardised incomes were adjusted for inflation using the same GDP deflator used by NHS Digital.[12] NHS Digital uses the most recent GDP deflators published by HM Treasury; this was June 2018 for the 2016/2017 report.[16]

The entire analysis procedure was bootstrapped to generate 95% confidence intervals.[19] For each contract type in each year, observations were drawn at random (with replacement) before estimating both the interval regressions (used to obtain the predicted mean incomes within each band) and the proportion of responders in each income band. The sample drawn was equal in size to the original sample. The process was repeated 2000 times and the confidence intervals were based on the distribution of the bootstrapped means from the replications.

RESULTS

Trends in partner GP income

Mean nominal income decreased by 1.1% from £99 437 in 2008 to £98 373 in 2017, for partner GPs (Table 1). The distribution of GPs over income bands remained relatively constant between 2010 and 2017 (Figure 2). In comparison, NHS Digital found a slightly smaller decrease of 0.5%, from £110 139 in 2007/2008 to £109 600 in 2016/2017 (Table 2).

After adjusting for inflation, mean real income decreased by 15.1% from £115 911 in 2008 to £98 373 in 2017. This is similar to the 14.7% decrease in real income, from £128 386 in 2007/2008 to £109 600 in 2016/2017, found by NHS Digital (Table 1).

The mean number of sessions worked by partners decreased from 7.7 to 7.0 per week between 2008 and 2017, a decrease of 0.7 sessions (Table 1). This is evident in the changing distribution of GPs over number of sessions worked, between 2008 and 2017 (Figure 3).

Mean partner income standardised for sessions worked increased in nominal terms by 4.9%, from £93 820 (95% CI = £93 782 to £93 858) in 2008 to £98 373 (95% CI = £98 333 to £98 413) in 2017. Mean standardised real income decreased by 10.0%, from £109 363 in 2008 to £98 373 in 2017 (Table 1).

Trends in salaried GP income

For salaried GPs, average nominal income increased by 4.4%, from £49 061 in 2008 to £51 208 in 2017 (Table 2). The proportion of salaried GPs in the lowest income band

Table 1. Trends in nominal and adjusted income for partner GPs, 2008–2017[a]

Year	Mean nominal income, £	95% CI, £	Mean inflation-adjusted income, £	Mean sessions worked per week	Mean nominal income standardised for sessions, £	95% CI, £	Mean inflation-adjusted, standardised income, £	*n*	NHS Digital mean nominal income, £	NHS Digital mean inflation-adjusted income, £
2008	99 437	99 400 to 99 475	115 911	7.7	93 820	93 782 to 93 858	109 363	1057	110 139	128 386
2010	100 286	100 248 to 100 324	112 295	7.6	95 637	95 598 to 95 676	107 089	869	109 400	122 500
2012	100 399	100 362 to 100 436	108 821	7.5	96 635	96 596 to 96 674	104 741	978	106 100	115 000
2015	98 457	98 419 to 98 495	101 397	7.2	95 876	95 814 to 95 914	98 739	892	103 800	106 900
2017	98 373	98 333 to 98 413	98 373	7.0	98 373	98 333 to 98 413	98 373	763	109 600	109 600

[a]A day is split into three sessions (morning, afternoon, and evening) and sessions worked per week range from one to 14. Income standardised to 2017 distribution of sessions worked per week. Real income indexed to 2016/2017 value using NHS Digital's GDP deflator.[13] CI = confidence interval.

Figure 2. Distribution of GPs over income bands, 2010 to 2017. Data from 2008 are not included in this figure because different income bands were used.

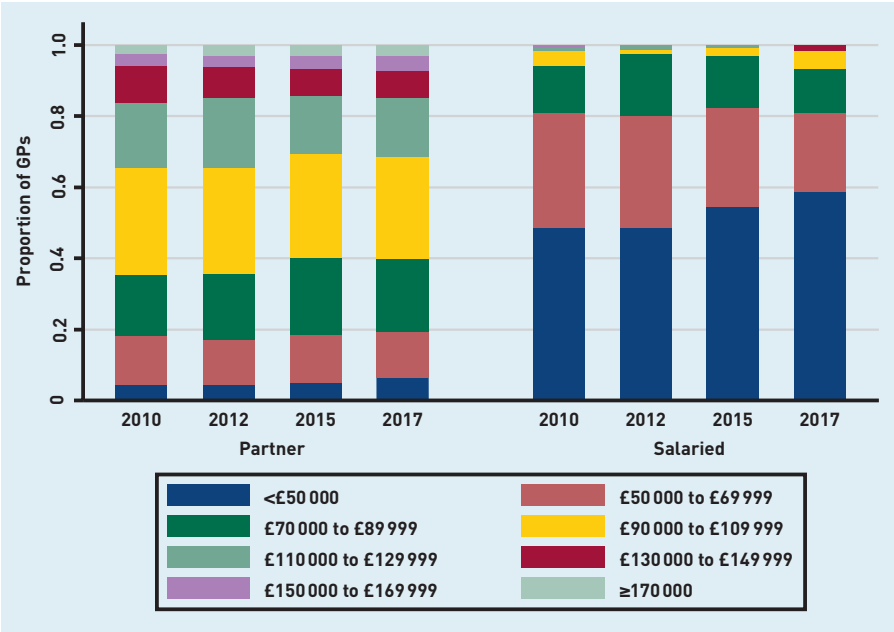

Figure 3. Distribution of GPs over number of sessions worked per week, 2008–2017.

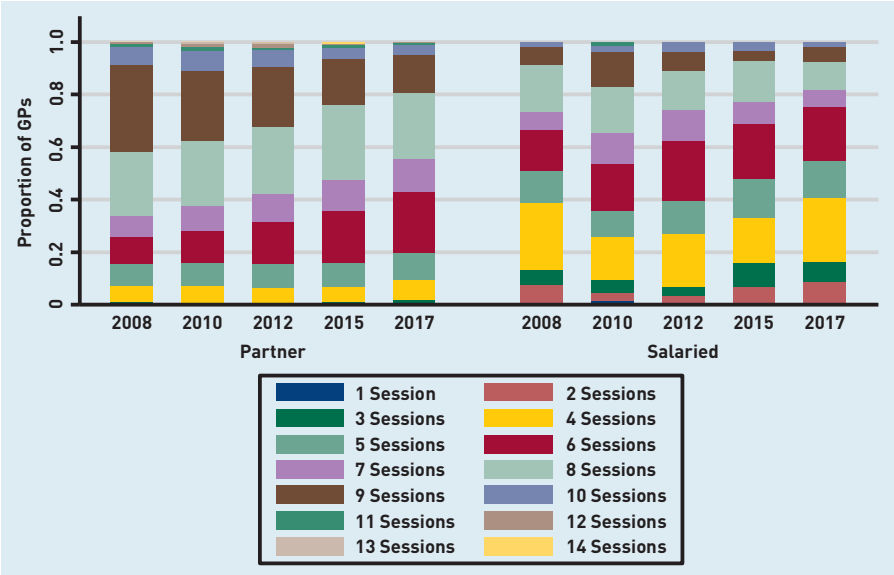

Table 2. Trends in nominal and adjusted income for salaried GPs, 2008–2017[a]

Year	Mean nominal income, £	95% CI, £	Mean inflation-adjusted income, £	Mean sessions worked per week	Mean nominal income standardised for sessions, £	95% CI, £	Mean inflation-adjusted, standardised income, £	*n*	NHS Digital mean nominal income, £	NHS Digital mean inflation-adjusted income, £
2008	49 061	49 007 to 49 115	57 189	5.6	47 252	47 202 to 47 302	55 080	165	55 931	65 197
2010	54 212	54 162 to 54 262	60 703	6.3	49 261	49 219 to 49 303	55 160	136	58 300	65 281
2012	53 688	53 637 to 53 739	58 191	6.0	51 314	51 264 to 51 364	55 618	157	57 000	61 781
2015	51 504	51 456 to 51 552	53 042	5.6	49 744	49 697 to 49 791	51 230	158	53 700	55 304
2017	51 208	51 129 to 51 287	51 208	5.3	51 208	51 129 to 51 287	51 208	121	56 600	56 600

[a]A day is split into three sessions (morning, afternoon, and evening) and sessions worked per week range from one to 14. Income standardised to 2017 distribution of sessions worked per week. Real income indexed to 2016/2017 value using NHS Digital's GDP deflator.[13] CI = confidence interval.

increased slightly between 2010 and 2017 (Figure 2). However, the proportion of salaried GPs in the higher-income bands increased over this period, helping to explain this increase in average nominal income.

In comparison, NHS Digital found an increase of 1.2%, from £55 931 in 2007/2008 to £56 600 in 2016/2017. Mean real income decreased by 10.0% from £57 189 in 2008 to £51 208 in 2017. This is slightly smaller than the 13.2% decrease in real income, from £65 197 in 2007/2008 to £56 600 in 2016/2017, found by NHS Digital (Table 2).

The mean number of sessions worked decreased from 5.6 to 5.3 per week between 2008 and 2017, a decrease of 0.3 sessions (Table 2). Average sessions worked increased between 2008 and 2010, and then decreased thereafter. This pattern is evident in the changing distribution of GPs over number of sessions worked, between 2008 and 2017 (Figure 3).

Average salaried GP income standardised for sessions worked increased in nominal terms by 8.4%, from £47 252 (95% CI = £47 202 to £47 302) in 2008 to £51 208 (95% CI = £51 129 to £51 287) in 2017. Average standardised real income decreased by 7.0%, from £55 080 in 2008 to £51 208 in 2017 (Table 2).

DISCUSSION

Summary

Average nominal incomes have increased slightly over the last decade. When nominal GP income is adjusted for contracted time commitment, mean income increased for both partner and salaried GPs between 2008 and 2017. Once these figures are then adjusted for inflation, however, average real income fell over the same period.

Strengths and limitations

Using data from large national surveys enabled reporting on income earned solely through GP-related work. It is possible to track trends in income over a long period. This study is the first to report long-term trends in GP income in England that take account of contracted time commitment.

The study found a general downward response rate over the years. However, this downward trend is in line with the international trend towards declining survey response rates.[20] As a result, there is less precision in the later waves of the survey. It also could be a source of bias; for example, if high-income GPs were now less likely to respond. The similarity of the trends from this study with those reported by NHS Digital provides some reassurance that such a bias is not caused by declining response rates. The data are self-reported and may be biased by recall error or because of a social desirability bias.[21] Comparisons over time will not be affected if these do not change over time. The trends in the unstandardised data are similar to those found by NHS Digital, suggesting the self-reported data acts as a good proxy.[12]

A limitation of the data is the small sample size of salaried GPs in some years. As of June 2018, salaried GPs represented 35% of GPs in England.[3] This suggests that salaried GPs are under-represented in the study sample. The figures for salaried GPs have larger margins of error than partners because of the smaller sample sizes. However, salaried GPs may have a much clearer idea of how much they earn because it is part of their contract and it does not vary unpredictably to the extent that partner incomes vary in line with practice revenues and costs. As a result, these larger margins of error are offset to some extent.

It was not possible to collect reliable data on GPs working solely as locums because of the method by which the survey is administered. Each survey is posted to GPs at the surgery where they are registered. It is not possible to identify GPs who are locums or their employment locations confidently because of the limitations of existing datasets, the transient nature of locum employment, and because GP locums frequently work at more than one surgery. This is an issue for future research as it might be that GPs are doing more locum work in response to having lower incomes from regular work.

A further limitation is that the income data are recorded in bands. Rather than using the midpoint of each of these income bands, interval regression models were used to predict the income values that best fit the data. Using predictions from interval regression models increases the accuracy of the figures compared with using simple midpoint values.

The recoding of the eight income bands in 2010 reduces the comparability of the 2008 data. The lowest band changed from '<£25 000' to '<£50 000', which may account for some of the increase in income of salaried GPs between 2008 and 2010. As more salaried GPs fall into the lowest income band compared with partner GPs, the recoding may have exaggerated the increase in average income for salaried GPs over this period.

Comparison with existing literature

The mean income figures found in the current study are smaller in magnitude

than those reported by NHS Digital.[12] This is because the NHS Digital figures are based on HMRC's self-assessment tax database, and include non-GP related work; NHS Digital's figures are therefore likely to have overestimated the income that GPs earn from their GP work.

For partner GPs, this study found a similar trend in mean nominal income to NHS Digital before 2015.[12] However, the study found a greater increase in mean nominal income for salaried GPs, between 2008 and 2015, due largely to the increase between 2008 and 2010.

The study's changes in nominal income between 2015 and 2017 differ from NHS Digital for both partner and salaried GPs. NHS Digital reported an increase in mean nominal and real income for all types of GPs. In comparison, the current study found a slight decrease for both partner and salaried GPs. One explanation for this is that, as more GPs opt to work part time, a greater proportion of their income is likely to come from private work.[7] The increased income from this private work may therefore be compensating for the downward trend in NHS income.

The current study found similar downward trends in mean real income to NHS Digital before 2015, for both partner and salaried GPs.[12] After 2015 the study found a continuing downward trend, whereas NHS Digital found a slight increase in mean nominal and real income. Again, this may be because an increase in private income masks the downward trend in GP income.

Implications for practice

As of December 2017, the mean annual earnings per person for consultants (including directors of public health) in the NHS was £112 040.[14] This is significantly higher than the mean income this study found for partner GPs, and over twice that of the mean income it found for salaried GPs. When comparing these 2017 figures with those reported in 2012, it is clear that this downward trend in income is not present for consultants.[13] This suggests that there is a greater financial incentive for medical students to train as consultants, as opposed to GPs. This is reflected in a 2018 survey of doctors in training, with a significantly larger proportion of responders reporting consultant as their ultimate career goal compared with GP.[15]

The results of the current study suggest that the decrease in GP income is overstated in the NHS Digital reports because it does not account for hours worked. Nonetheless, the results confirm that GP income has fallen in real terms between 2008 and 2017 for both partner and salaried GPs. The decrease in GP income adjusted for sessions worked and inflation over the last decade may have contributed to the current problems with recruitment and retention.

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Ethical approval

Ethical approval was obtained from the University of Manchester Ethics Committee following proportionate review (ref 2017-2638-3884).

Provenance

Freely submitted; externally peer reviewed.

Competing interests

Sharon Spooner and Katherine Checkland are practising salaried GPs.

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