

# Practice size and quality attainment under the new GMS contract: a cross-sectional analysis

Yingying Wang, Catherine A O'Donnell, Daniel F Mackay and Graham CM Watt

## ABSTRACT

### Background

The Quality and Outcomes Framework (QOF) of the new General Medical Services contract, for the first time, incentivises certain areas of general practice workload over others. The ability of practices to deliver high quality care may be related to the size of the practice itself.

### Aim

To explore the relationship between practice size and points attained in the QOF.

### Design of study

Cross-sectional analyses of routinely available data.

### Setting

Urban general practice in mainland Scotland.

### Method

QOF points and disease prevalence were obtained for all urban general practices in Scotland ( $n = 638$ ) and linked to data on the practice, GP and patient population. The relationship between QOF point attainment, disease prevalence and practice size was examined using univariate statistical analyses.

### Results

Smaller practices were more likely to be located in areas of socioeconomic deprivation; had patients with poorer health; and were less likely to participate in voluntary practice-based quality schemes. Overall, smaller practices received fewer QOF points compared to larger practices ( $P = 0.003$ ), due to lower point attainment in the organisational domain ( $P = 0.002$ ). There were no differences across practice size in the other domains of the QOF, including clinical care. Smaller practices reported higher levels of chronic obstructive pulmonary disease (COPD) and mental health conditions and lower levels of asthma, epilepsy and hypothyroidism. There was no difference in the reported prevalence of hypertension or coronary heart disease (CHD) across practices, in contrast to CHD mortality for patients aged under 70 years, where the mortality rate was 40% greater for single-handed practices compared with large practices.

### Conclusions

Although smaller practices obtained fewer points than larger practices under the QOF, this was due to lower scores in the organisational domain of the contract rather than to lower scores for clinical care. Single-handed practices, in common with larger practices serving more deprived populations, reported lower than expected CHD prevalence in their practice populations. Our results suggest that smaller practices continue to provide clinical care of comparable quality to larger practices but that they may need increased resources or support, particularly in the organisational domain, to address unmet need or more demanding QOF criteria.

### Keywords

health services research; practice management, medical; primary health care; quality indicators.

## INTRODUCTION

The UK government's latest white paper for England *Our Health, Our Care, Our Say* outlines a new vision for general practice in which care will be increasingly delivered through large group practices and confederations of practices.<sup>1</sup> While it has been argued that such developments will improve the ability of general practice to deliver healthcare fit for the 21st century,<sup>2</sup> current evidence suggests that small and single-handed practices provide clinical care of comparable quality to that of larger group practices.<sup>3-5</sup> In addition, patients rate smaller practices more highly in terms of access and satisfaction.<sup>6-8</sup>

Smaller practices remain a significant feature of general practice throughout the UK. In 2004, single-handed and small two or three partner practices accounted for 56% of all partnerships in England, 53% in Wales and 52% of all practices in Scotland.<sup>9</sup> The majority of these smaller practices are located in urban areas and are the most likely to be affected under the government's new vision of primary care, as small practices will continue to be the norm in remote and rural areas.<sup>10</sup>

While designed as a payment system, there is now an explicit linkage of quality attainment with financial incentives and monitoring within the new General Medical Services (GMS) contract under the

Y Wang, BSc (Medicine), MSc, CSO health services research postgraduate student, CA O'Donnell, BSc, MPH, PhD, senior lecturer in primary care R&D; DF Mackay, MA, MSc, PhD, research fellow, GCM Watt, MBChB, MD, FRCGP, FFPHM, FRCP, FMedSci, professor of general practice, Division of Community Based Sciences, University of Glasgow.

### Address for correspondence

Catherine A O'Donnell, General Practice and Primary Care, Division of Community Based Sciences, University of Glasgow, 1 Horselethill Road, Glasgow, G12 9LX.  
E-mail: Kate.ODonnell@clinmed.gla.ac.uk

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Quality and Outcomes Framework (QOF).<sup>11</sup> This raises the possibility that smaller practices<sup>12</sup> or practices serving deprived or rural areas may be disadvantaged.<sup>13</sup> Using recently released data on the points attained under the QOF, we have examined the performance of urban general practices in Scotland comparing the QOF points attained by practices according to the size of the practice.

## METHOD

We obtained data for the year 2002 from Information Services, NHS National Services Scotland on practice and GP characteristics for all general practices in Scotland. Data included practice list size, the number of GPs, the proportion of female and South Asian qualified GPs, personal medical services (PMS) practices and training practices (defined as those practices with at least one GP who is an approved trainer). The percentage of Indian, Pakistani and South Asian patients in the practice was estimated using ethnicity data at output area level from the 2001 census. To this was added a database of practices that had received Practice Accreditation (PA) or the Quality Practice Award (QPA) or who were participating in the Scottish Programme to Improve Clinical Effectiveness (SPICE), supplied by the

## How this fits in

Previous studies have demonstrated that single-handed and small practices provide clinical care of comparable quality to larger practices. However, patients rate smaller practices more highly in terms of access and satisfaction. This work shows that single-handed and small practices obtained fewer points under the QOF than large practices, but that this was attributable to lower point attainment in the organisational domain. Smaller practices performed as well as larger practices in all other domains of the QOF, including the clinical domains. Practices serving deprived populations report lower prevalence of clinical conditions, particularly CHD, than may be expected, when compared to census and mortality data.

Royal College of General Practitioners. Practices were categorised according to the number of WTE (whole time equivalents) GP principals: single-handed practice (up to 1.0 WTE GP); small practices (1.01–3.0 WTEs); medium practices (3.01–5.00 WTEs); large practices ( $\geq 5.01$  WTEs).

The level of socioeconomic deprivation in the practice population was defined using a modified measure of the Scottish Index of Multiple Deprivation, based on income, employment and education.<sup>14,15</sup> The eight category Scottish Executive Urban Rural Classification measure (SEURC)<sup>16</sup> was used to identify urban practices by assigning practices to the category which contained the

**Table 1. Characteristics of urban practices returning QOF data in September 2005 by practice size.**

	Number of WTE GP principals				P-value
	Single-handed (1.00 WTE GP)	Small practice (1.01–3.00 WTE GPs)	Medium practice (3.01–5.00 WTE GPs)	Large practice (5.01 GPs)	
Practices located in urban areas, <sup>a</sup> n (%)	70 (11)	216 (34)	212 (33)	138 (22)	
Female GPs, % (SD)	19.0 (39.3)	40.8 (26.1)	40.2 (15.5)	39.3 (12.9)	<0.001
GPs aged $\geq 55$ , % (SD)	25.2 (43.4)	14.0 (23.8)	13.0 (14.9)	13.3 (12.4)	<0.001
South Asian qualified GPs <sup>b</sup> , % (SD)	14.8 (35.5)	5.0 (17.4)	1.4 (5.9)	0.4 (2.4)	<0.001
List size per GP, mean (SD)	2033 (687)	1548 (421)	1510 (281)	1533 (268)	<0.001
List size per WTE GP, mean (SD)	2033 (687)	1655 (394)	1603 (257)	1607 (266)	<0.001
Voluntary practice-based activities					
Practice accreditation, n (%)	7 (10.0)	40 (18.5)	44 (20.8)	48 (34.8)	<0.001
Quality Practice Award, n (%)	0	2 (0.9)	11 (5.2)	15 (10.9)	<0.001
Personal Medical Service, n (%)	6 (8.6)	14 (6.5)	15 (7.1)	10 (7.2)	0.948
SPICE, n (%)	16 (22.9)	27 (12.5)	28 (13.2)	26 (18.8)	0.091
Training practice, n (%)	1 (1.4)	28 (13.0)	64 (30.2)	70 (50.7)	<0.001
Patient characteristics					
Number of registered patients	129 951	821 397	1 406 569	1 423 129	
mSIMD, mean (SD)	31.3 (14.6)	30.8 (15.7)	23.6 (11.8)	21.7 (11.7)	<0.001
Indian patients, % (SD)	0.61 (0.76)	0.50 (0.52)	0.41 (0.46)	0.29 (0.35)	0.002
Pakistani and other South Asian <sup>b</sup> patients, % (SD) (except Indian)	2.36 (4.19)	1.33 (1.83)	0.99 (1.42)	0.83 (1.77)	<0.001
Patients aged over 65 years, % (SD)	12.5 (5.1)	12.7 (3.6)	13.5 (3.2)	13.2 (3.1)	<0.001
SIR 64, <sup>c</sup> mean (SD)	122.5 (33.9)	120.2 (34.9)	104.6 (26.8)	99.9 (27.0)	<0.001
CHD mortality <70, mean SAR <sup>d</sup> (SD)	141.9 (116.0)	113.6 (84.5)	100.2 (58.4)	102.3 (51.0)	<0.001

<sup>a</sup>There were a total of 638 urban practices; data missing from two practices. All results were population weighted. <sup>b</sup>Defined as Bangladesh, India, Pakistan or Sri Lanka. <sup>c</sup>Age:sex standardised ratio. Modified Scottish Index of Multiple Deprivation. SIR 64 = Standardised limiting long-term illness for under-64s. SPICE = Scottish Programme for Improving Clinical Effectiveness. WTE = whole-time equivalents.

**Table 2. Median QOF points obtained in each domain by practice size.<sup>a</sup>**

	Number of WTE GP principals				P-value <sup>b</sup>
	Single-handed (1.00 WTE GP)	Small practice (1.01–3.00 WTE GPs)	Medium practice (3.01–5.00 WTE GPs)	Large practice (5.01 GPs)	
Total QOF points, median (range)	944.1 (709.2–1000.0)	953.6 (505.2–1000.0)	953.0 (598.2–1000.0)	970.4 (505.2–1000.0)	0.003
Clinical points, median (range)	534.3 (394.5–550.0)	531.2 (309.4–550.0)	534.9 (327.3–550.0)	534.5 (278.1–550.0)	0.382
Organisational points, median (range)	172.0 (95.5–184.0)	171.0 (70.0–184.0)	172.5 (94.0–184.0)	179.0 (70.0–184.0)	0.002
Patient experience points, median (range)	100.0 (30.0–100.0)	100.0 (30.0–100.0)	100.0 (40.0–100.0)	100.0 (30.0–100.0)	<sup>c</sup>
Additional services points, median (range)	36.0 (13.8–36.0)	36.0 (25.0–36.0)	36.0 (25.0–36.0)	36.0 (13.8–36.0)	<sup>c</sup>
Holistic care points, median (range)	96.4 (50.0–100.0)	94.2 (34.5–100.0)	96.4 (32.6–100.0)	96.5 (32.6–100.0)	0.104
Quality practice payment, median (range)	27.1 (9.3–30.0)	28.4 (10.7–30.0)	30.0 (12.4–30.0)	30.0 (9.3–30.0)	<sup>c</sup>

<sup>a</sup>There were a total of 638 urban practices; data missing from 1 single-handed practice. Not all practices returned data in every domain, thus median difference for total QOF points is greater than the sum of the individual domains. <sup>b</sup>Median was compared across practice size using the median test. <sup>c</sup>Where medians are close to being identical, or are identical, the median test incorporated in STATA 9.2 will not report a test statistic or P value. WTE = whole time equivalents.

largest proportion of their registered population as at September 2002. Patients' self-reported health was used as a proxy for healthcare need. This was captured using the 2001 census based indicator of limiting long-term illness for those aged under 64 years (SIR 64). Data on coronary heart disease mortality for under-70s was also obtained from Information Services and standardised for age and sex of the practice population.

From this dataset, we identified practices returning QOF points and disease prevalence in September 2005,<sup>17</sup> linking both datasets to obtain a comprehensive description of practice, GP and patient characteristics for every urban practice returning QOF data.

We used the  $\chi^2$  test as a measure of association between practice size and categorical variables. As the distribution of QOF data was skewed and not corrected by logarithmic transformation, the median point attainment in each domain was compared across the four practice groups using the median test incorporated in STATA 9.2. This tests the null hypothesis that the samples were drawn from populations with the same median. Comparison of QOF prevalence data was conducted using univariate ANOVA in Stata 9.2.

**RESULTS**

Single-handed and small practices accounted for 45% (n = 286) of all urban practices (Table 1). Smaller practices, in particular single-handed practices, had greater list sizes than large practices. Smaller practices were less likely to participate in voluntary quality practice schemes or

GP training. GPs in single-handed practices were significantly older, more likely to be male and to have qualified in South Asia than those working in larger practices.

Almost 1 million patients were registered with single-handed and small practices (Table 1). These patients lived in areas of greater socioeconomic deprivation, had poorer health and higher rates of premature mortality from coronary heart disease than those from group practices (single-handed practices: mean age:sex standardised ratio = 141.9; large practices: mean age:sex standardised ratio = 102.3). Smaller practices had a higher percentage of patients from minority ethnic groups.

Only one single-handed practice did not return QOF data. There was a statistically significant difference in the total number of QOF points obtained by practices, with larger practices obtaining more points than smaller practices (Table 2). When the individual domains contributing to the overall QOF points were examined, only the organisational domain showed a significant difference across the practice groups, with larger practices again obtaining more points than smaller practices (Table 2). There was no statistically significant difference in the clinical or holistic care domains. The median values of the other domains (patient experience, additional services and quality practice payments) were the same, or similar, across the four groups.

Within the clinical domain, the only statistically significant differences in median points achievement were for COPD and CHD, although the absolute differences in points were very small

**Table 3. QOF points and disease prevalence in each clinical domain by practice size.**

	Number of WTE GP principals				P-value <sup>a,b</sup>
	Single-handed (1.00 WTE GP)	Small practice (1.01–3.00 WTE GPs)	Medium practice (3.01–5.00 WTE GPs)	Large practice (5.01 GPs)	
Asthma points, median (range)	71.7 (29.9–72.0)	70.2 (19.8–72.0)	70.0 (28.8–72.0)	69.9 (24.5–72.0)	0.164
Asthma prevalence (%)	5.04	5.21	5.28	5.52	0.017
Cancer points, median (range)	12.0 (0–12.0)	12.0 (0–12.0)	12.0 (6.0–12.0)	12.0 (6.0–12.0)	<sup>c</sup>
Cancer prevalence (%)	0.50	0.46	0.50	0.51	0.087
COPD points, median (range)	44.7 (15.1–45.0)	43.2 (13.1–45.0)	44.5 (14.7–45.0)	43.9 (11.0–45.0)	0.020
COPD prevalence (%)	2.12	2.29	1.84	1.82	<0.001
Diabetes points, median (range)	98.1 (76.4–99.0)	97.6 (63.3–99.0)	97.5 (69.4–99.0)	97.0 (64.7–99.0)	0.288
Diabetes prevalence (%)	3.22	3.15	3.13	3.14	0.935
Epilepsy points, median (range)	15.0 (2.0–16.0)	14.1 (2.0–16.0)	14.4 (2.2–16.0)	14.9 (2.0–16.0)	0.112
Epilepsy prevalence (%)	0.65	0.75	0.69	0.72	0.029
Hypertension points, median (range)	105.0 (72.1–105.0)	105.0 (40.4–105.0)	105.0 (67.6–105.0)	104.9 (60.1–105.0)	<sup>c</sup>
Hypertension prevalence (%)	10.54	11.27	11.33	11.07	0.487
Hypothyroidism points, median (range)	8.0 (7.0–8.0)	8.0 (6.1–8.0)	8.0 (6.9–8.0)	8.0 (2.4–8.0)	<sup>c</sup>
Hypothyroidism prevalence (%)	2.13	2.51	2.71	2.79	<0.001
Mental health points, median (range)	38.8 (7.0–41.0)	40.8 (0–41.0)	41.0 (7.2–41.0)	41.0 (14.4–41.0)	<sup>c</sup>
Mental health prevalence (%)	0.77	0.60	0.53	0.53	0.008
Stroke points, median (range)	30.4 (15.6–31.0)	30.6 (12.3–31.0)	30.7 (14.1–31.0)	30.8 (15.2–31.0)	0.486
Stroke prevalence (%)	1.57	1.72	1.78	1.79	0.225
CHD points, median (range)	119.5 (84.2–121.0)	117.9 (72.4–121.0)	119.9 (80.9–121.0)	120.5 (63.8–121.0)	<0.0001
CHD prevalence (%)	3.76	3.74	3.70	3.75	0.960

<sup>a</sup>Median was compared across practice size using the median test. <sup>b</sup>Results for test of mean prevalence were population weighted. <sup>c</sup>Where medians are close to being identical, or are identical, the median test incorporated in STATA 9.2 will not report a test statistic or P value. CHD = coronary heart disease. COPD = chronic obstructive pulmonary disease. WTE = whole time equivalents.

(Table 3). There was a significant difference in the reported prevalence of some conditions. Smaller practices reported higher levels of COPD and mental health conditions, but lower levels of asthma, epilepsy and hypothyroidism. However, the higher rate of premature mortality from CHD shown in Table 1 was not reflected in reported CHD prevalence (Table 3).

Although the results for disease prevalence were adjusted for population size, they were not adjusted for socioeconomic deprivation within the practice population. However, as shown in Table 1, smaller practices had higher deprivation scores indicating that they have more deprived practice populations. To further explore the possible impact of socioeconomic deprivation on QOF achievement, we compared QOF point attainment and prevalence in the 120 practices located in the most deprived decile of the Scottish general practice population. A significant difference in points was still only apparent in the organisational domain (single-handed practices: median = 167.0; small practices: 170.8; medium practices: 177.0; larger practices: 179.9;  $P = 0.002$ ). There was a non-significant difference across the other domains, including the clinical domain (data not shown). Within the clinical domain, there was weak evidence of a difference in mental health points achievement, with larger

practices obtaining more points (single-handed practices: median = 33.0; small practices: 40.7; medium practices: 41.0; larger practices: 41.0;  $P = 0.045$ ). Prevalence patterns were similar to those observed with all practices, although only cancer and epilepsy achieved statistical significance with smaller practices reporting higher levels of cancer, but lower levels of epilepsy.

## DISCUSSION

### Summary of main findings

This study adds to recent work exploring the impact of the QOF,<sup>13,18</sup> but with particular reference to the relationship between point attainment and practice size. The study concentrated on urban areas, as small practices will continue to be a major feature of health care in remote and rural areas. Smaller practices received fewer QOF points compared to larger practices, due to lower points attainment in the organisational domain. There were no differences across practice size for the other elements of the QOF, including clinical care.

### Strengths and limitations of the study

There are limitations with the data. For example, the most recent data on practice and GP characteristics available to us was from 2002, thus practices returning QOF data in 2005 had to be

matched to the 2002 dataset with a resultant loss of a small number of practices from the analyses, although this was spread equally amongst the practice groups. Some practice and population characteristics, for example ethnicity and self-reported health, were derived from census-based area level data and assumed to be representative of the practice population. In some cases, patients on a practice list may not be truly representative of the general population of the area, as some patients may choose to travel to attend a particular practice. However, as there are no sources of practice-derived data for these variables, census-based area data is the accurate and available proxy.

Single-handed and small practices in urban areas continue to have larger list sizes per GP principal than larger practices and to provide care for patients living in greater socioeconomic deprivation and with poorer self-reported health. As reported in previous studies, the GPs providing this care were more likely to be male, older and to have qualified abroad.<sup>4,19</sup> Smaller practices were also less likely to participate in voluntary practice-based activities such as quality practice accreditation and GP training, perhaps related to their location in more deprived areas.<sup>15</sup>

#### Comparison with existing literature

While smaller practices obtained fewer QOF points than larger practices overall, there was no evidence to suggest that this was due to poorer clinical care. Single-handed and small practices performed as well as larger practices in the clinical care and patient experience domains, as well as in holistic care (as defined in the QOF), additional services and quality practice payments. This observation remained true after controlling for socioeconomic deprivation and indicates that while, as previously reported,<sup>3-5</sup> single-handed and small practices provide clinical care of comparable quality to larger practices, they may lack the organisational resources and structures required to fully maximise their QOF point attainment.

The lack of effect of deprivation is at odds with a recent study, which found that incentivised quality increased with deprivation.<sup>18</sup> However, that study was based on data from only one area of Scotland and did not include the large socioeconomically deprived conurbation of greater Glasgow, which accounts for 50% of the 10% most deprived areas in Scotland.<sup>20</sup> A study utilising data from 8569 practices in England demonstrated that deprivation was inversely related to QOF achievement, with the most deprived practices receiving around 11% fewer QOF points compared to the most affluent.<sup>13</sup>

Prevalence figures for Scottish urban practices

were generally similar to those recently reported for practices in England.<sup>21</sup> There was an unexpected flatness in the reported prevalence of most of the clinical conditions in smaller practices, given that smaller practices had higher levels of deprivation within their practice populations. Overall, smaller practices reported a higher prevalence of mental health problems and COPD. The finding that there was no gradient in the reporting of either hypertension or CHD contrasts with data presented in Table 1 on CHD mortality for patients aged under 70 years, where the mortality rate was 40% greater for single-handed practices compared with large practices. Possible explanations include unmet need and differential exception reporting of patients in practices serving different types of population. However, as no data were available on the levels of exception reporting within practices, this could not be explored. It was also not possible to explore the impact of a practice's population in terms of age and sex, as QOF prevalence data were aggregated to practice level and could not be standardised for these variables. If smaller practices have different populations compared with larger practices in terms of demographics, this may also contribute to the flatness observed due to unmet need in particular types of practice.

#### Implications for clinical practice

While there were statistically significant differences in point attainment across different domains, the absolute difference was often very small. We also acknowledge that quality, as measured by the QOF, may be as likely to reflect quality in data recording as quality in delivered care. There may also be a ceiling effect, which will not become clear until at least 1 or 2 more years of data are analysed. We conclude that small practices generally performed as well as larger practices in this first exercise of the QOF but the suggestion of organisational weaknesses may make it more difficult for them to repeat this success, for example with larger caseloads of CHD patients, or with more demanding QOF criteria.

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#### Competing interests

The authors have stated that there are none.

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