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Deprivation and primary care funding in Greater Manchester after devolution:

a cross-sectional analysis

Abstract

Background
In April 2016 Greater Manchester gained control of its health and social care budget, a devolution that aimed to reduce health inequities both within Greater Manchester and between Greater Manchester and the rest of the country.

Aim
To describe the relationship between practice location deprivation and primary care funding and care quality measurements in the first year of Greater Manchester devolution (2016/2017).

Design and setting
Cross-sectional analysis of 472 general practices in Greater Manchester in England.

Method
Financial data for each general practice were linked to the area deprivation of the practice location, as measured by the 2015 Index of Multiple Deprivation. Practices were categorised into five quintiles relative to national deprivation. NHS Payments data and indicators of care quality were compared across social deprivation quintiles.

Results
Practices in areas of greater deprivation did not receive additional funding per registered patient. Practices in less deprived quintiles received higher National Enhanced Services payments from NHS England than practices in the most deprived quintile. A trend was observed towards funding to more deprived practices being supported by Local Enhanced Service payments from clinical commissioning groups, but these represent a small proportion of overall practice income. Practices in less deprived areas had better care quality measurements according to Quality and Outcomes Framework achievement and Care Quality Commission ratings.

Conclusion
Following devolution, primary care practices in Greater Manchester are still reliant on funding from national funding schemes, which poorly reflect its deprivation. The devolved administration's ability to address health inequities at the primary care level seems uncertain.

Keywords
deprivation; devolution; financing; inequalities; primary care; quality of care.

INTRODUCTION

Individuals in areas of deprivation have more complex healthcare needs, earlier mortality, and greater multimorbidity than individuals who reside in affluent areas.[1–7] While many socioeconomic determinants of health are independent of 'medical management', health care can nonetheless attenuate their effects through reducing the severity and progression of disease.[4,6,8] Success in this arena depends on how effectively care is delivered according to need across the socioeconomic spectrum,[8] yet the availability of safe, effective health care tends to vary inversely with need.[1,7] The reasons for this are multifaceted and complex, but depend partly on health financing.[1,7]

Greater Manchester is an area of marked socioeconomic deprivation.[9] In 2010, the chance of dying early (before 75 years) in northern regions such as Manchester was 20% higher than in the south of England.[10] Socioeconomic deprivation explains up to two-thirds of this marked mortality divide.[11]

In response to these health inequities, and out of frustration at a centralised, London-focused political economy,[12] a growing devolution movement is building in England.[13,14] Greater Manchester is at the forefront of this experiment, having taken control of its £6 billion yearly health and social care budget in April 2016, as well as a Transformation Fund of £450 million.[15] The devolution, styled 'DevoManc', has two stated aims: to improve the health of the Greater Manchester population, and to reduce the existing health inequalities.[13]

In light of these ambitions, this study aimed to examine the relationship between funding allocations to primary care practices within Greater Manchester and area-level deprivation of practice location during the first year of the new Greater Manchester Health and Social Care Partnership. Given the role of primary care as the cornerstone of the healthcare system, if devolution of health and social care spending is to achieve its aim of reducing health inequalities, higher funding allocations would be expected in areas of greater deprivation.

Because of the importance of the quality of care provided, this study further aimed to describe the relationship between practice location deprivation and measures of primary care quality. Quality is examined as measured by the Quality and Outcomes Framework (QOF) and the Care Quality Commission (CQC).

Primary care funding in England

Across England, primary care funding is based on the fulfilment of contractual obligations for the provision of various agreed services.[16] Core practice funding comes from the global sum (capitation) payment. This covers the provision of

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How this fits in

There has been no previous work looking at primary care funding or quality in the context of the devolution of the health and social care budget to Greater Manchester. Styled 'DevoManc', the devolution was promoted as a way to increase local autonomy and reduce the large health inequities in Greater Manchester. This work details how local control over primary care financing in Greater Manchester following devolution is limited, and primary care practices in highly deprived areas are not receiving additional funding, despite well-described greater need.

essential services (the everyday work of seeing patients during normal working hours), as well as some additional services. The global sum payment is calculated according to the Carr-Hill formula, which attempts to account for the needs of a practice's population and the cost of providing primary care services.[17–19] Additional funding is received through Enhanced Service and QOF payments.[20]

Enhanced Service payments are for non-essential services and may be commissioned nationally (National Enhanced Service payments) by NHS England, or locally (Local Enhanced Service payments) by clinical commissioning groups (CCGs) to meet local health needs.[21] Enhanced Service payments also include Direct Enhanced Service payments for vaccinations and minor procedures. Further payments are made for premises, administration, physician seniority, and prescribing fees. Together these form the total NHS payments made to GP practices. Deductions for pensions and professional levies are excluded from these totals.[20]

The QOF is a pay-for-performance scheme where payments are provided to practices based on their performance against targets. Exception reporting, now re-termed 'Personalised Care Adjustments', permits practice staff to exclude certain patients from these pay-for-performance calculations without financial penalisation, for a variety of reasons including where care is deemed 'unsuitable' for the patient, or where the client chooses not to receive the prescribed care or does not respond to invitations.[22–24]

METHOD

Data

Publicly available financial and care quality data were accessed for all primary care practices active in Greater Manchester for the full 2016/2017 financial year ($n = 472$). Data for total NHS payments were downloaded from NHS Digital.[25] Practice postcodes were matched to English Indices of Multiple Deprivation (IMD) data 2015.[26] Practices were then ranked into deprivation quintiles according to their postcode, where 5 is the most deprived and 1 the least deprived quintile relative to national deprivation.

Quality of care ratings for practices inspected before the end of the 2016/2017 financial year were downloaded from the CQC,[27] verified using unique six-letter practice identifiers, and matched with collated financial and deprivation data. Any rating made after the end of the 2016/2017 financial year was only used where there was no previous rating. CQC data were available for only 436 (92%) practices, with 28 practices (6%) not inspected, and eight practices (2%) with unavailable data.

Analyses

To allow for varying list sizes across practices, the average payment per registered patient (total payments before deductions divided by number of registered patients)[20] and the average payment per weighted patient (total payments before deductions divided by the number of weighted patients, as calculated by the Carr-Hill formula) were examined.[20] The various main sub-payments were also examined separately as they come from different sources: National Enhanced Service payments per registered patient, Local Enhanced Service payments per registered patient, and QOF payments per registered patient.

The relationship between the practice payment variables and deprivation was estimated using a multivariable linear regression model. Confounders were decided a priori, in accordance with factors previously described to affect financial need.[19,28] All models controlled for practice contract type (General Medical Services, Personal Medical Services, or Alternative Provider Medical Services). Practice location rurality was also controlled for in the analysis of National Enhanced Service, Local Enhanced Service, and QOF payments. Rurality was not included in the analysis of the average payment per registered patient or the average payment per weighted patient because it is already accounted for in the Carr-Hill formula, which determines the global sum payment.

Whether measures of primary care quality vary by practice location deprivation was also investigated. Linear

regression models were used to quantify the association between deprivation and total QOF achievement or exception rates (clinical domain), controlling for list size, contract type, and practice location rurality. The four CQC ratings categories were dichotomised into 'Inadequate and Requires Improvement' and 'Good and Outstanding'. To dichotomise quintiles equally, IMD decile categories were used and combined (1–5 and 6–10). Fisher's exact test was then used to examine the association between CQC rating and practice location deprivation. All analyses were undertaken in SPSS (version 23).

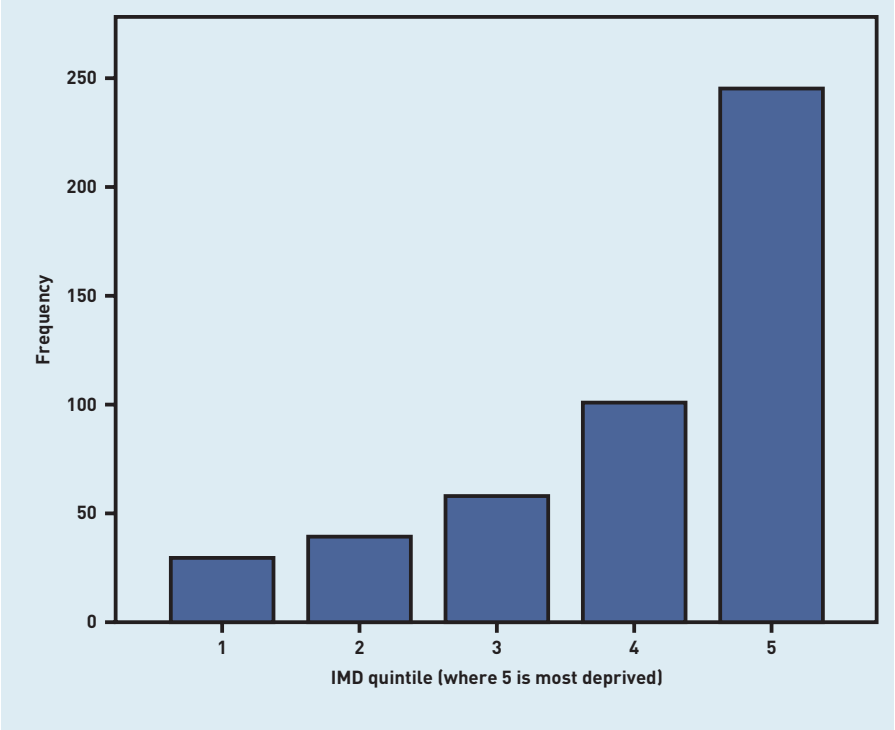
RESULTS

Overview of practice characteristics

The 472 practices active in Greater Manchester in 2016/2017 served 3 010 596 patients. When relative area-level deprivation was compared nationally, 52% (*n* = 245) of practices in Greater Manchester were located in the most deprived quintile, and 73% (*n* = 346) in the two most deprived quintiles (Figure 1).

Table 1 presents descriptive statistics for the outcomes of interest and confounders across the five social deprivation quintiles. The average list size was smallest for practices in the most deprived quintile at 5738, and increased as quintiles became less deprived, before decreasing again in quintile 1.

Figure 1. Frequency of Greater Manchester practices per national deprivation (IMD) quintile. IMD = Index of Multiple Deprivation.



Practice area deprivation and primary care funding

The average practice in the most deprived quintile (quintile 5) received £159 per registered patient. This fell to £142 for practices in quintile 4 and £136 for practices in quintile 3, before increasing slightly to £141 in quintile 2, and £142 in quintile 1 (the least deprived). Following weighting by the Carr-Hill formula, practices in both the most and least deprived quintiles received the same average payment per weighted patient of £147. This was higher than the average payment per weighted patient for practices in quintiles 4 (£136), 3 (£131), and 2 (£141) (Table 1). However, after controlling for contract type, there were no statistically significant differences in average payments per registered patient or per weighted patient by deprivation quintile in the first year of devolution (confidence intervals cross zero) (Table 2).

National Enhanced Service payments were small. The median practice payment was £394 (the mean practice National Enhanced Service payment on a per patient basis was £0.14) (Table 1) and 25 practices received no National Enhanced Service funding at all. National Enhanced Service payments per registered patient were significantly higher for practices in deprivation quintiles 2, 3, and 4, compared with practices in the most deprived quintile (Table 2). Practices in quintile 2 received the largest National Enhanced Service payments, £1000 more per practice than those in the most deprived quintile.

Local Enhanced Service payments provided more income, with the average practice receiving £100 182 (the mean practice LES payment on a per patient basis was £16.76). A trend was observed towards decreasing Local Enhanced Service payments per registered patient as practice area deprivation decreased. However, confidence intervals (CI) are wide (Table 2).

There was variation in the QOF payments per patient received by practices (£2–157), with practices receiving an average of £12.14 per registered patient (Table 1). After controlling for practice rurality and contract type, a significant relationship was not detected between QOF payments per registered patient and practice area deprivation (Table 2).

Practice area deprivation and primary care quality

Mean total percentage QOF achievement in the clinical domain was high (96.05%) (Table 1). A trend towards higher QOF

Table 1. Descriptive statistics per practice of outcomes and primary confounders split by IMD social deprivation quintiles

		Deprivation quintile					
Number of practices	**Variable**	**5 (most deprived) *n* = 245**	**4 *n* = 101**	**3 *n* = 58**	**2 *n* = 39**	**1 (least deprived) *n* = 29**	**Total or average *n* = 472**
List size	Mean (SD)	5738 (3141)	6838 (4187)	7155 (3983)	7444 (4089)	6839 (4258)	6356 (3691)
	Range	1125–21 712	1577–29 614	1772–16 760	1892–16 728	1638–20 320	1125–29 614
Practice rurality	Frequency urban (%)	245 (100)	101 (100)	58 (100)	35 (90)	29 (100)	468 (99)
Contract type	APMS frequency (%)	21 (8.6)	4 (4)	0 (0)	3 (7.7)	1 (3.4)	29 (6.1)
	GMS frequency (%)	185 (75.5)	68 (67.3)	50 (86.2)	25 (64.1)	17 (58.6)	345 (73.1)
	PMS frequency (%)	39 (15.9)	29 (28.7)	8 (13.8)	11 (28.2)	11 (37.9)	98 (20.8)
Total payments, £	Mean (SD)	803 867 (486 204)	866 973 (497 923)	846 883 (504 127)	923 717 (494 201)	854 000 (523 521)	840 056 (493 467)
	Range	116 916– 3 747 783	203 087– 3 291 125	230 638– 2 496 808	273 010– 1 887 854	201 872– 2 385 852	116 915– 3 747 783
Average payment per registered patient,[a] £	Mean (SD)	159 (95)	142 (27)	136 (16)	141 (30)	142 (65)	150 (73)
	Range	103–1155	89–247	101–179	107–272	104–474	89–1155
Average payment per weighted patient,[b] £	Mean (SD)	147 (74)	136 (26)	131 (13)	141 (30)	147 (64)	142 (58)
	Range	93–763	82–259	103–175	107–250	114–473	82–763
National Enhanced Service payments per registered patient, £	Mean (SD)	0.09 (0.122)	0.17 (0.354)	0.16 (0.275)	0.32 (0.479)	0.14 (0.183)	0.14 (0.26)
	Range	0–1	0–3	0–2	0–2	0–1	0–3
Local Enhanced Service payments per registered patient, £	Mean (SD)	18.73 (37.35)	17.49 (28.89)	13.79 (8.44)	12.27 (5.97)	9.53 (6.90)	16.76 (29.98)
	Range	1–503	1–200	2–34	2–26	0–25	0–503
QOF payments per registered patient, £	Mean (SD)	12.17 (9.75)	12.02 (2.74)	12.41 (2.58)	12.25 (1.99)	11.69 (1.98)	12.14 (7.23)
	Range	2–157	3–21	4–18	7–16	7–16	2–157
QOF achievement, %[c]	Mean (SD)	95.05 (6.64)	97.29 (3.19)	96.43 (6.37)	97.54 (3.29)	97.39 (3.18)	96.05 (5.71)
	Range	52.95–100.00	85.69–100.00	69.67–100.00	87.06–100.00	89.28–100.00	52.95–100.00
Exceptioning rate (clinical domain)[c]	Mean (SD)	8.61 (3.99)	9.07 (3.74)	7.68 (3.18)	9.56 (4.20)	6.85 (2.89)	8.56 (3.84)
	Range	0.00–21.36	3.01–21.26	3.05–17.24	2.88–24.34	2.49–13.27	0.00–24.34
Number of practices		***n* = 220**	***n* = 99**	***n* = 54**	***n* = 38**	***n* = 25**	***n* = 436**
CQC ratings	Outstanding (%)	9 (4.1)	9 (9.1)	1 (1.9)	1 (2.6)	1 (4)	21 (4.8)
	Good (%)	199 (90.5)	86 (86.9)	52 (96.3)	37 (97.4)	24 (96)	398 (91.3)
	Requires improvement (%)	5 (2.3)	4 (4.0)	1 (1.9)	0 (0)	0 (0)	10 (2.3)
	Inadequate (%)	7 (3.2)	0 (0)	0 (0)	0 (0)	0 (0)	7 (1.6)

[a]Registered patients is the number of patients registered at each practice at the end of the financial year. [b]Weighted patients is the number of patients per practice as calculated by the global sum formula to estimate patient workload. Average payments per patient describe the total payments figure (before deductions), divided by either the number of registered or weighted patients. [c]Data from QOF dataset, not NHS payments dataset. APMS = Alternative Provider Medical Services. CQC = Care Quality Commission. GMS = General Medical Services. IMD = Index of Multiple Deprivation. PMS = Personal Medical Services. QOF = Quality and Outcomes Framework.

achievement was observed moving from the most to the least deprived quintile, with practices in quintiles 1, 2, and 4 achieving significantly higher performance than practices in the most deprived quintile (Table 3); however, for quintile 1 confidence intervals cross zero. Total exceptioning rate varied between 0% and 24.3% (mean = 8.56), with three practices exceptioning 0 patients (Table 1). Practices in the least deprived IMD quintile exceptioned 1.7 percentage points fewer patients in the clinical domain than those in the most deprived quintile (IMD 5 = –1.712; 95% CI = –3.15 to –0.274) (Table 3). However, IMD quintile 2 had the highest exceptioning rate and no clear relationship was observed between the rate of exception reporting and practice area deprivation (Table 3).

Of the 436 practices with CQC ratings, most (398 practices, 91.3%) were rated 'Good'. Of the remaining 38 (8.7%), 21 practices (4.8%) were classified as 'Outstanding', 10 (2.3%) as 'Requires Improvement', and seven (1.6%) as 'Inadequate'. All seven practices deemed 'Inadequate' were in the most deprived quintile, and nine of the 10 practices requiring improvement were in the two most deprived quintiles (Table 1). There was a significant difference

Table 2. Estimated regression associations between primary care payments and practice area deprivation quintile

Dependent variable	Unstandardised coefficient, B	95% CI
Average payments per registered patient		
Quintile 4	–7.073	–22.517 to 8.371
Quintile 3	–5.234	–24.756 to 14.289
Quintile 2	–14.234	–32.379 to 3.912
(least deprived) Quintile 1	–10.483	–34.310 to 13.344
Contract type PMS	5.871	–8.088 to 19.829
Contract type APMS	162.395	138.823 to 185.967
Average payments per weighted patient		
Quintile 4	–5.352	–16.382 to 5.679
Quintile 3	–3.105	–16.691 to 10.481
Quintile 2	–5.209	–21.193 to 10.775
(least deprived) Quintile 1	5.499	–12.808 to 23.807
Contract type PMS	8.893	–1.858 to 19.644
Contract type APMS	140.780	122.777 to 158.784
NES payments per registered patient		
Quintile 4	0.072	0.013 to 0.131
Quintile 3	0.069	–0.003 to 0.142
Quintile 2	0.197	0.108 to 0.287
(least deprived) Quintile 1	0.032	–0.066 to 0.130
Practice rurality	–0.264	–0.526 to –0.002
Contract type PMS	0.065	0.008 to 0.123
Contract type APMS	–0.026	–0.123 to 0.070
LES payments per registered patient		
Quintile 4	–0.085	–7.001 to 6.832
Quintile 3	–2.856	–11.375 to 5.663
Quintile 2	–6.947	–17.437 to 3.544
(least deprived) Quintile 1	–7.895	–19.375 to 3.584
Practice rurality	–7.143	–37.774 to 23.489
Contract type PMS	–0.267	–7.017 to 6.482
Contract type APMS	24.402	13.110 to 35.694
QOF payments per registered patient		
Quintile 4	–0.026	–1.724 to 1.673
Quintile 3	0.518	–1.574 to 2.609
Quintile 2	–0.161	–2.737 to 2.415
(least deprived) Quintile 1	–0.354	–3.173 to 2.465
Practice rurality	–2.447	–9.969 to 5.074
Contract type PMS	0.187	–1.470 to 1.845
Contract type APMS	3.145	0.372 to 5.918

APMS = Alternative Provider Medical Services. CI = confidence interval. LES = Local Enhanced Service. NES = National Enhanced Service. PMS = Personal Medical Services. QOF = Quality and Outcomes Framework.

in dichotomised CQC rating (Outstanding/Good versus Inadequate/Requires Improvement) across IMD strata (Fisher's exact 2-sided test *P*-value = 0.03).

DISCUSSION

Summary

Devolution of the health and social care budget for Greater Manchester aimed to reduce the existing health inequalities present in the region. In light of these ambitions, this study aimed to examine the relationship between primary care funding and practice area deprivation in the first year of devolved funding. No relationship was found between practices' area deprivation quintile and average payments per registered patient, despite well-described greater need among patients in these more deprived areas.[2,5,6,19]

Practices in less deprived quintiles actually received higher National Enhanced Service payments from NHS England than practices in the most deprived quintile. Although a trend was observed towards funding to more deprived practices being supported by Local Enhanced Service payments from CCGs, these represent a small proportion of overall practice income. Most practice funding still comes from the global sum (capitation payment), with on average 11% of the average payment per registered patient in Greater Manchester coming from Local Enhanced Service payments, 8% from QOF payments, and <1% from National Enhanced Service payments. There was also evidence that practices in less deprived areas were of better quality according to QOF achievement and CQC ratings than practices in the most deprived quintile.

Strengths and limitations

This study analysed payments data for all 472 practices active in the Greater Manchester region during 2016/2017, covering more than 3 million patients across all 10 Greater Manchester CCGs. DevoManc aims to reduce health inequalities through local control of the health and social care budget. This study therefore examined how one key component of health and social care funding, that flowing to primary care, was allocated in relation to deprivation, a key determinant of healthcare need.

This study is based on publicly reported data, and so it is limited in terms of the information it was possible to include on known confounders, such as practice populations' ethnicity, age, sex, comorbidity, language barriers, and turnover.[4,28–31] In addition, it was only possible to analyse deprivation by practice location, not patient address. Although previous work has shown practice deprivation to be a good indicator of patient deprivation,[4] there is potential for misclassification.

Comparison with existing literature

A relationship between practice deprivation and average payment per weighted patient was not observed. This accords with previous work, which has raised concerns that national funding formulae, such as the Carr-Hill formula and the QOF, fail to sufficiently take into account the

Table 3. Estimated regression associations between QOF ratings and practice area deprivation quintile

Dependent variable	Unstandardised coefficient, B	95% CI
Total percentage QOF achievement (clinical domain)		
Quintile 4	1.990	0.678 to 3.303
Quintile 3	1.167	–0.450 to 2.785
Quintile 2	2.155	0.164 to 4.145
(least deprived) Quintile 1	2.052	–0.118 to 4.222
List size per 100 patients	0.025	0.011 to 0.040
Practice rurality	1.325	–4.464 to 7.115
Contract type PMS	0.409	–0.869 to 1.687
Contract type APMS	1.693	–0.467 to 3.852
Exception rate (clinical domain)		
Quintile 4	0.430	–0.439 to 1.300
Quintile 3	–1.003	–2.075 to 0.068
Quintile 2	0.689	–0.630 to 2.008
(least deprived) Quintile 1	–1.712	–3.150 to –0.274
List size per 100 patients	0.022	0.012 to 0.031
Practice rurality	0.044	–3.792 to 3.880
Contract type PMS	–0.604	–1.450 to 0.243
Contract type APMS	2.912	1.481 to 4.343

CI = confidence interval. QOF = Quality and Outcomes Framework.

contemporary morbidity burden associated with deprivation.[18,19,29]

Previous work has discussed the uncertainties of the devolution experiment, the effects of austerity on its motivations, and the complexities in the de-scaling of national organisational concentration to their current local assemblage in Greater Manchester.[12,32] However, no previous work has looked at primary care funding or quality in the context of the devolution. Although average payments per weighted patient are not necessarily representative of the amounts directly available for patient care, they nonetheless offer a helpful indicator of the funding available to practices.

Implications for research and practice

This analysis contributes to evidence that current financing frameworks need modification to adequately account for practice workload and patient population characteristics. Practices located in more deprived areas of Greater Manchester require additional funding, because the patients they serve have poorer health outcomes.[1–5] A crucial opportunity appears to have been missed to deliver a local scheme addressing national inequalities.

This cross-sectional analysis shows that most Greater Manchester funding following devolution is still derived from national primary care funding schemes, and not reflective of the high levels of deprivation in the region. Devolution carried emotional and political appeal as an opportunity to make in-house decisions about health and social care, and as a chance to address profound health inequities.[12,13] However, as this work shows, these inequities continue to persist in primary care funding allocation.

An explanation for this is that, behind the rhetoric, DevoManc has no statutory basis, and is not an exercise in local control or autonomy over policy, but rather over its implementation.[12] It describes an agreement for administrative delegation between the Department of Health and Social Care, NHS Improvement/England, and local authorities and care organisations in Greater Manchester.[12] For primary care, this has meant creating governance arrangements to integrate planning, delivery, and governance across already existing CCGs.[13] Certainly, this allows greater focus on relationship building and reorganisation. However, Greater Manchester remains governed by national policy. National funding schemes, such as the QOF and the global sum payment, still form the basis of general practice income in Greater Manchester despite failing to account for the additional unmet health needs of deprived populations. The £450 million Transformation Fund, established to help *'... make all the changes* [required] *to dramatically improve health and social care in Manchester ...'*,[33] appears to have had minimal contribution to improving these funding imbalances. Thus, claims about DevoManc producing much needed improvements in health inequities, particularly in light of the central government-led austerity firmly embedded in the devolution process, should be treated with caution.[32] By 2020, Greater Manchester is predicted to have a shortfall in funding of several billion pounds a year that, even with integration and improved efficiency of services,[34] will likely curtail capacity for local responsiveness.

Nevertheless, some success has been had by the new organisational structure at championing regional priorities within central government, with Greater Manchester successfully competing to gain access to limited national capital for several tailored health programmes.[32] However, as this study demonstrates, the ability of devolution to address the issues (the inequalities), on which it was promoted, remains to be questioned. Further translational investigation is clearly indicated to assess how Greater Manchester may tackle deprivation and health inequities, within its limited remit, and to investigate alternative financing structures.

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Ethical approval

Not applicable.

Provenance

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Competing interests

Dr James Matheson works for Hope Citadel Healthcare and the Shared Health Foundation as a GP. The other authors have declared no competing interests.

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