Research

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The impact of new forms of large-scale general practice provider collaborations on England's NHS:

a systematic review

Abstract

Over the past decade, collaboration between general practices in England to form new provider networks and large-scale organisations has been driven largely by grassroots action among GPs. However, it is now being increasingly advocated for by national policymakers. Expectations of what scaling up general practice in England will achieve are significant.

To review the evidence of the impact of new forms of large-scale general practice provider collaborations in England.

Design and setting

Systematic review.

Method

Embase, MEDLINE, Health Management Information Consortium, and Social Sciences Citation Index were searched for studies reporting the impact on clinical processes and outcomes, patient experience, workforce satisfaction, or costs of new forms of provider collaborations between general practices in England.

A total of 1782 publications were screened. Five studies met the inclusion criteria and four examined the same general practice networks, limiting generalisability. Substantial financial investment was required to establish the networks and the associated interventions that were targeted at four clinical areas. Quality improvements were achieved through standardised processes, incentives at network level, information technology-enabled performance dashboards, and local network management. The fifth study of a large-scale multisite general practice organisation showed that it may be better placed to implement safety and quality processes than conventional practices. However, unintended consequences may arise, such as perceptions of disenfranchisement among staff and reductions in continuity of care.

Good-quality evidence of the impacts of scaling up general practice provider organisations in England is scarce. As more general practice collaborations emerge, evaluation of their impacts will be important to understand which work, in which settings, how, and why.

general practice; health services; organisation and administration; quality improvement

INTRODUCTION

New organisational forms of collaboration between general practices for the provision of care have emerged across England over the past decade. 1,2 These include general practice networks, federations, super-partnerships, and multisite practice organisations. It has been argued that they are better placed than the traditional, smaller, independent business partnerships between a small number of GPs to strengthen the workforce, improve quality of care, extend services, and generate efficiencies.²⁻⁷ Although many of the earliest collaborations emerged through grassroots initiatives, building on existing local relationships, national policies are increasingly driving collaborations. This is with a view to creating much larger 'accountable care'-type organisations, in which primary and secondary, and, in some cases, social care providers, collaborate to provide comprehensive care for defined populations, within a shared budget.6-8

Many of the expectations of what scaling up general practices will achieve appear logical, however, it is unclear what research evidence exists to support them. This article presents a systematic review of the evidence on the impact of new organisational forms of collaboration between general practices for the provision of care in England.

METHOD

This review contributed to a larger project led by the Nuffield Trust on large-scale general practice. The search strategy was developed with a health services research librarian to identify literature on the impact of collaboration between three or more general practices on clinical processes, clinical outcomes, patient experience, workforce satisfaction, and costs. The databases Embase, MEDLINE, Health Management Information Consortium (HMIC), and Social Sciences Citation Index (SSCI) were searched for literature in English, initially between January 1996 and March 2016. The database search was re-run in January 2017 to capture any subsequent peer-reviewed literature. Additional academic and grey texts were identified by screening the references of relevant publications, seeking recommendations from experts in the fields of primary care and health services research, and by examining relevant websites, GP media reports, and policy documents. These are methods known to increase yields of relevant results in systematic reviews. 10 The protocol was not registered.

The search strategy had initially aimed to capture evidence systematically from international and UK contexts. However, as a result of heterogeneity in the terminology

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How this fits in

National policy increasingly advocates the development of large-scale provider collaborations between general practices, with expectations that they will be better placed than individual practices to strengthen the workforce, improve quality of care, extend services, and generate economies of scale. A systematic review was carried out to examine the impact of new forms of provider collaborations in England to understand what evidence exists to support these expectations. Limited evidence was found that met the inclusion criteria. Five studies point to potential improvements in quality of care through scaling up. Four of these were from the same general practice networks. There is a need for realistic expectations of what scaling up may achieve in England and cautious implementation alongside evaluation to understand better what is likely to work, for whom, and in which contexts

used, as well as in the process and context of implementation of scaling up general practice, it became evident that, despite using several search strategies, such a wide systematic review was neither feasible nor likely to provide clearly transferable evidence. Therefore, the inclusion and exclusion criteria applied aimed to identify studies with greatest relevance to current developments in England and robust research methods. These criteria are outlined in Box 1.

All titles and abstracts identified were screened, with full publications being read by the same researcher if they appeared relevant. Publications were assessed using the inclusion and exclusion criteria. If there was uncertainty over whether a study met inclusion or exclusion criteria, it was discussed until consensus was reached. Critical Appraisal Skills Programme (CASP) consensus, and narrative synthesis was

Data were extracted on templates by two authors, with discussion to reach used to present the findings.12

checklists were used to evaluate the quality

RESULTS

of included studies.11

After the exclusion of duplicates, 1782 texts were screened. Literature that did not meet the inclusion criteria often described the development, rather than impact, of largescale general practice collaborations; 3-5,12 was of poor methodological quality;^{13–17} or it was not possible to disentangle the impact of the new collaboration from wider initiatives. 18-22 Evidence from initiatives with similarities to the process of formation and/or objectives of scaled-up general practice provider collaborations in England including specialist clinical networks, integrated care initiatives, GP-led commissioning, and out-of-hours cooperatives, as well as evidence from other countries, did not meet the inclusion criteria. However, it helped inform the interpretation of the findings, assessment of the implications for policy, and contributed to a wider review of the literature presented elsewhere.²³ Only five studies met the inclusion criteria (Figure 1).

Four studies examined networks of general practices in the same London borough of Tower Hamlets. These evaluations focused on quantitative assessments of the impact of intervention packages delivered by new networks of practices on quality of care processes and clinical outcomes. These were tracked over the period of implementation, and between 1 and 3 years afterwards. Performance was compared against averages in London and England. The studies provided some cost data, but no cost-effectiveness analysis (Table 1). All four studies had a moderate risk of bias based on CASP checklists.^{24–27}

One qualitative study examined a multisite general practice organisation with central ownership of 50 nationally dispersed GP practices. It used interviews and ethnographic observations to examine quality and safety processes, and to provide staff members' views on job satisfaction and on patient experience (Table 2). It had a low risk of bias based on the CASP checklist 28

Quantitative studies

In 2008–2009, Tower Hamlets Primary Care Trust (PCT) (the local NHS service commissioning organisation at that time and which is now a clinical commissioning group), established eight geographically defined, managed general practice

Box 1. Inclusion and exclusion criteria for the systematic review

Inclusion criteria

- · Study evaluates the impact of new forms of collaboration between three or more GP practices working collectively to provide routine clinical care in England, for example, general practice networks, federations, super-partnerships, or multisite practice organisations.²
- · Study reports on the impact of one or more of the following as a result of the collaboration: quality of care processes indicators, clinical outcomes, patient experience, workforce satisfaction, or costs.

- Descriptive case studies without primary data, clear methodology, and/or with only self-reported impacts.
- · Studies including new forms of collaboration, but the evaluation of the collaboration's impact is not a focus of the study and cannot therefore be identified from the rest of the initiative.
- Studies of organisations only providing out-of-hours care.

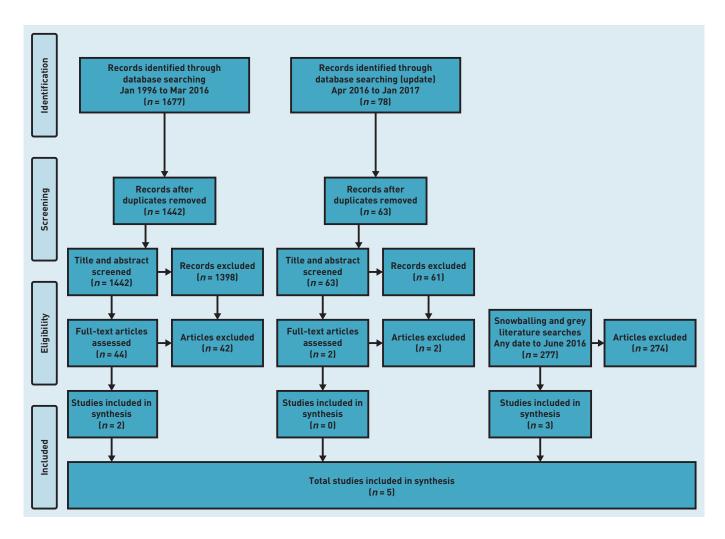


Figure 1. Flow diagram of systematic review process.

networks with a total of 36 GP practices. Each network had four or five practices and a registered population between 30 000 and 50 000. The aims of the networks at the time were to improve four clinical areas: childhood immunisations; type 2 diabetes; chronic obstructive pulmonary disease; and cardiovascular disease.

Previous local enhanced services' funding was channelled into the development of the networks and incentives for the provision of care packages were rolled out between 2008 and 2010. The PCT distributed financial incentives at network level, rather than to individual practices, to encourage peer scrutiny and the collective management of funds to achieve the PCT's key performance indicators. Approximately £10 million per annum was spent across all networks for this initiative.²⁷ Funding enabled staff education, information technology-enhanced recall systems, standardised data collection, the analysis of comparative feedback on performance, as well as management and shared clinical support teams across the networks. The interventions were developed by local GP clinical leaders, public health specialists, and PCT managers, with input from a management consultancy. The clinical effectiveness group, based at the local university and led by local GPs, developed the performance-monitoring dashboards and measurable key performance indicators. It also undertook the evaluations.

Results of observational time-series studies in the four targeted clinical areas appeared promising (Table 1). They demonstrated an improvement on most key performance indicators; with the average of the networks often doing better than other PCT, average London, or national trends. This included achieving targets on childhood and flu immunisation, 24,26 annual review and care planning, 25-27 screening, 25 and, for people with chronic obstructive pulmonary disease or cardiovascular disease, increasing the number of individuals on registers and numbers referred into community rehabilitation clinics.^{26,27} There were also improvements in measures of health outcomes, such as achieving targets

Table 1. The impacts of a large-scale general practice collaboration (Tower Hamlets Managed General Practice Network) from quantitative studies

Authors and journal	Title of paper	Study methods	Care package facilitated by Tower Hamlets Managed General Practice Network	Key performance indicators	Reported impact on processes and indicators of quality of care	Reported impact on costs
Cockman <i>et al</i> (2011), <i>BMJ</i> ^{β4}	Improving MMR vaccination rates: herd immunity is a realistic goal	Observational. Time-series study analysis. Comparison with trends in London and England. Intervention phased in Sep 2009 to Jan 2010. Period of data analysis presented quarterly between Q1 2006 and Q3 2010 (MMR1 vaccination)	Financial incentives. Standardised recording of data. Systematic call and recall with IT. Monthly dashboard feedback on performance. Training and education for clinicians. Active follow-up of defaulters. Regular meetings for peer review and ideas sharing	Achieve 95% uptake of all childhood immunisations	Uptake of first MMR1 vaccine before age 2 rose from 80% in Sep 2009 to 94% in Mar 2011. Step change in rate of increase of MMR1 compared with before and after (P<0.001), London and England	Total for eight networks: £112 000 (used as financial incentive; £14 000/network). 50% in advance, 50% dependent on performance. This was in addition to existing direct enhanced services funding for childhood immunisation
Hull et al (2014), BMJ Quality and Safety ⁵⁵	Improving outcomes for patients with type 2 diabetes using general practice networks: a quality improvement project in East London	Observational. Time-series analysis. Comparison with trends in two neighbouring PCTs, London and England Intervention phased in Oct 2009 to Apr 2010. Period of data analysis presented yearly 2007–2012 (retinopathy screen), 2006–2012 (total cholesterol), 2006–2012 (BP), 2005–2012 (HbA1c)	Financial incentives. Standardised recording of data. Systematic call and recall with IT. Monthly dashboard feedback on performance. Bimonthly MDT meetings with diabetic specialist team. Supported case management and education. Rapid access to consultants via e-mail or phone	Number of care plans completed, target: 90%. Proportion of patients attending retinal screening, target: 80%. Proportion of patients achieving BP ≤140/80 mmHg and total cholesterol ≤4 mmol/l: target 50%. Network population average HbA1c: target 7.5%	Rise in care plans from 10% in Q1 2009 to 88% in Q1 2012. Rise in retinal screening from 72% in Q1 2009 to 82.8% in Q1 2012. Step change catch-up with London and England (no P-value). Rise in joint BP and cholesterol target achieved, from 35.3% in Q1 2009 to 46.1% in Q1 2012 (did not meet target). Performed better than London and England (no P-value). Average HbA1c fell from 7.8% in 2009 to 7.66% in 2012 (did not meet 7.5% target). Trend similar to London and England (no P-value).	Total for eight networks: £1.7 million (>£200 000/ network) 70% in advance, 30% dependent on performance et).
Hull et al [2014], Primary Care Respiratory Medicine ²⁶	Improving outcomes for people with COPD by developing networks of general practices: evaluation of a quality improvement project in East London	Observational. Time-series analysis. Comparison with trends in London and England. Intervention phased in Apr 2010 to Jun 2010. Period of data analysis presented yearly 2010-2013 (annual review), 2005-2013 (influenza vaccination), 2005-2011 (COPD admissions)	Financial incentives. Standardised recording of data Including comorbidities, medication review, encourage non-pharmaceutical interventions). Systematic call and recall with IT. Active follow-up of non-attenders. Monthly dashboard feedback on performance. Regular patient review	• Increase number of COPD cases on network registers: target 10% increase in first year. • Increase in number of care plans: target 80% community-based pulmonary rehab target 75% in patients with MRC score ≥3	 COPD register increased by 21% between 2010 and 2013. Annual reviews and care planning increased from 53% in 2010 to 86.5% in 2013. Pulmonary rehab in patients from 45% in 2010 to 75% in 2013. No national comparator. Influenza vaccination high before intervention, showed 	Total for eight networks: £300 000/annum for 3 years. 70% in advance, 30% dependent on performance
						continued

Table 1 continued. The impacts of a large-scale general practice collaboration (Tower Hamlets Managed General Practice Network) from quantitative studies

	Total for all eight networks for all four packages of care (CVD, COPD, diabetes, childhood immunisations): E10 million/annum for 3 years
steady improvement'. In 2012 it was significantly higher' than rate in England. No improvement in smoking prevalence: in 2010, 39% of patients with COPD smoked; in 2013, 40.4% smoked. Emergency COPD admissions 'have fallen' but remain higher than London average. Trend suggests a step change compared with London and England trends	• Statin prescribing increased more than • Tot in two local PCTs between 2009 and 2011 (P<0.01). • Improvements in cholesterol levels im and BP took place at a faster rate than E11 London and England for patients with hypertension, stroke, CHD, and diabetes (P<0.05 to P<0.001). • Proportion of patients with a care plan increased from 42.7% in 2011 to 61.6% in 2012. • Proportion of people with a new heart attack seen <3 weeks of discharge increased from 88.9% in 2009 to 71.3% in 2012. • Attendance at cardiac rehab decreased from 34.8% in 2009 to 27.7% in 2012. • Attendance at cardiac rehab decreased from 34.8% in 2009 and 2012. • Attendance at cardiac rehab decreased from 10.2% between 2009 and 2012. • Attendance at cardiac rehab decreased from 34.8% in 2009 to 27.7% in 2012. • Attendance at cardiac rehab decreased from 34.8% in 2009 to 27.7% in 2012. • Attendance at cardiac rehab decreased from 34.8% in 2009 to 27.7% in 2012. • Attendance at cardiac rehab decreased from acute myocardial infarction between 2008 and 2012. • Daper also reported a faster rate of decline in deaths from acute myocardial infarction between 2008 and 2012. London, or England. It reduced by 43% compared with an average of 25% for the top 10 PCTs in 2008 ranked by mortality. The authors recognise association is speculative
Improve influenza vaccination flo target, not financially incentivised as already incentivised by QOF). Reduce smoking prevalence flo target, not financially incentivised as already incentivised by QOF). Reduce emergency hospital admission for COPD (no target, not financially incentivised, only tracked)	BP < 140/90 mmHg for hypertension, stroke, and CHD. Cholesterol < 4 mmol/l for stroke, CHD, and diabetes. BP < 140/80 mmHg for diabetes. From Apr 2010: proportion of new heart attacks reviewed at GP surgery < 3 weeks of hospital discharge; attendance at cardiac rehab; recording of care plan recording of care plan
Quarterly MDT meeting including respiratory consultant and community respiratory team. Supported case management and education. Community-based pulmonary rehab. Hospital admission avoidance service. Rapid access to consultants via e-mail or phone	Financial incentives. Systematic call and recall with IT. Standardised recording of data. Monthly dashboard feedback on performance. Three whole-time community specialist CVD nurses across all networks. Training for practice nurses. Clinical guidelines developed by local clinical effectiveness group
	Observational study. Comparison with trends in two local PCTs, London, and England. Intervention phased in 2008 to Apr 2010. Period of data analysis presented yearly, 2009-2011 (lipid-lowering prescribing). 2004-2012 (CHD BP <150/90 mmHg). 2004-2012 (CHD BP <150/90 mmHg), 2004-2010 (Fmyocardial infarction mortality in patients <75 years)
	Improving cardiovascular disease using managed networks in general practice: an observational study in inner London
	Robson et al (2014), British Journal of General Practice ²⁷

BP= blood pressure. CHD= coronary heart disease. COPD= chronic obstructive pulmonary disease. CVD= cardiovascular disease. HbA1c= glycated haemoglobin. MDT= multidisciplinary team. MMR= measles, mumps, and rubella. MRC= Medical Research Council. PCT= primary care trust. QOF= Quality and Outcomes Framework. Rehab= rehabilitation.

Table 2. The impacts of a large-scale general practice collaboration (multipractice organisation in England) from a qualitative study

Author and journal	Title of paper	Study methods	Reported impact on processes and indicators of quality of care	Reported impact on workforce satisfaction	Reported impact on patient experience
Baker et al (2013), Journal of Health Services Research and Policy ²⁸	Primary care quality and safety systems in the English National Health Service: a case study of a new type of primary care provider	Interviews with senior staff and owners with responsibility for policy on quality and safety. Ethnographic observation in non-clinical areas. Interviews with staff in three practices. Analysis of company documentation. Study undertaken 2011 to 2012	Standardised policies and procedures. Facilitated the implementation of systems, such as incident reporting, investigating, and sharing learning. Reduced continuity of care in some cases	Relieved some clinical staff of administrative duties Inhanced training and inter-staff support. Reports of feeling undervalued. Recruitment and retention difficulties with high staff turnover (particularly of GPs)	Patients viewed as customers with strong focus on monitoring patient experience. Overall positive, caring attitude towards patients. Indications of unpopularity of call centre. Indications of dissatisfaction with level of continuity of care. Indications of antipathy towards a commercial organisation

for blood pressure, cholesterol, and average glycated haemoglobin levels for patients with type 2 diabetes.²⁵

One study compared performance in two local PCTs, which had a similar intervention package as the networks in Tower Hamlets, including the dissemination of clinical guidelines to all staff that were reinforced at central educational meetings and by standard data entry templates.²⁷ However, the other two PCTs did not have clinical case discussions within networks or administrative target reviews, and incentives were at practice level rather than at network level. Practices in other PCTs also did not have information technologyenabled performance dashboards with traffic light ratings, and did not have network managers. Results showed that practices in the comparator PCTs did better than the national average on all measures. but not as well as Tower Hamlets.²⁷

Qualitative findings

The multisite GP practice organisation studied was founded and owned by a small number of GPs.²⁸ At the time of the study (2011-2012), it operated over 50 GP practices across England with a salaried workforce. It had a hierarchical form of governance with a small executive made up of the owners (Table 2).

The owners of the organisation interviewed reported commercial, reputational, and moral factors that drove them to aim to deliver high-quality care and ensure patient satisfaction. Multiple mechanisms to ensure the safety and quality of care were reportedly used, including: standardising processes, such as for incident reporting; enhancing training and inter-staff support; reducing administrative burden on frontline clinicians; optimising learning between practices; and comparing practice performance (for example, practices that under-reported adverse incidents were investigated, because this was considered a marker of possible lack of engagement with quality and safety issues). The organisation used patient surveys and 'mystery shoppers' to monitor performance. Feedback and benchmarking of performance were reported among member practices to create competition between practices. Authors presented a mixed picture of the ability to share learning between practices. For example, they described rapid dissemination of changes following an adverse event being common, but not all sites were maximising opportunities to improve care processes. GPs and other staff were performance managed, and if they did not meet requirements were 'performancemanaged out of the organisation', according to one GP director interviewed.

A central call centre was set up to take telephone requests for appointments. This was intended to allow more face-to-face time between receptionists and patients in practices, and to improve efficiency in the allocation of appointments. However, interviewees provided mixed views on its

effectiveness, with receptionists stating they still often had to deal with calls from the call centre, and that some patients did not like the call centre.

Patient participation groups were reported to have been involved with varying success across practices, with challenges encountered in maintaining engagement. Some staff attributed challenges in recruiting patients to antipathy towards what patients perceived as a commercial organisation providing NHS health care. One interviewee perceived that staff felt undervalued in a large company where no one local owned the practice where they worked. The recruitment and retention of staff, in particular of GPs, was problematic in some practices. This was more notable in underperforming practices that had recently been taken over by the organisation. The authors attributed some of the GP turnover to the flexibility offered by salaried or locum work compared with the 'buy-in' required by the traditional GP partnership business model. Staff turnover affected the relational continuity of care, and resulted in reports of patient dissatisfaction. It also posed a risk to the consistent implementation of the quality and safety procedures of the organisation, and increased the amount of time spent on staff induction procedures.

DISCUSSION

Summary

The very small number of studies available provided limited evidence on the impact on quality of care, costs, and workforce satisfaction of scaling up general practice in England. There was no robust direct evidence of impacts on patient experience, and no evidence identified on the costeffectiveness of scaling up general practice.

The evidence from a group of networks covering 36 general practices in Tower Hamlets indicated that such networks can enable quality improvement by clearly targeting areas for improvement, with guidelines reinforced at central educational meetings, standard data entry templates, clinical case discussions within networks, administrative target reviews, incentives at network levels, and information technology-enabled performance dashboards, alongside additional clinical and management support. This is likely to require substantial financial investment and time. In the case of Tower Hamlets, the investment was approximately £10 million per year. Evidence from one multisite general practice organisation with more than 50 GP practices in England suggested that increasing scale under a

single organisation could improve safety and quality processes, but might increase staff turnover, reduce continuity of care, and reduce perceived quality of patient experience.

Strengths and limitations

The literature search was comprehensive, with an expert librarian advising on multiple versions of keyword searches, and authors identifying further literature through snowball searching and seeking guidance from experts. The search methods and strict inclusion criteria improved the rigour and relevance of the reviewed literature, but the small number of studies, mostly from a single geographic area, limits the generalisability of the findings.

The review was undertaken when scaling up general practice was starting to be advocated by national policymakers.6,7 It highlights the limited good-quality evidence to support this approach at the time. Further work has since been undertaken, 9,29,30 and more research is underway, which may help fill some of the gaps identified.^{31–33}

This review is complemented by a review of the wider academic and grey literature examining the development and impact of national and international initiatives with similarities to large-scale general practice organisations in England, such as specialist clinical networks, GP-led commissioning, out-of-hours cooperatives, and integrated care initiatives.23

Comparison with existing literature

Despite the recent focus by national policymakers in England on increasing organisational size to improve quality of care and generate efficiencies in general practice, there is no consistent association between scale, quality of care, or the generation of efficiency savings in the healthcare literature.²³ A wide range of factors other than size alone influence performance, including the availability of resources, the quality of clinical leadership, and pre-existing relationships in the local health economy.³⁴⁻⁴⁰ The time and resources involved in health service reorganisations such as scaling up organisations have often been underestimated, and anticipated benefits have not always been delivered.^{20,41–43} Although patients may value increased routes of access through scaling up, new access routes may not be well received by all patients. 20,22,39 For example, the importance of providing continuity of care for those who most need it has frequently been identified as desirable but may be harmed by providing general practice care

through larger organisations.44

Experience from similar initiatives both in the UK and internationally highlights important trade-offs that exist in scaling up, such as between being small enough to maintain flexibility and inclusive decisionmaking processes and being of sufficient size to bear financial risks as well as exert power to influence the local health economy. 45,46 It also highlights that giving GPs autonomy and engaging them in decision making may well increase the likelihood of large-scale general practice collaborations forming successfully; however, this may also result in duplicated efforts, inequity in participation, and complexity of organisational forms. 46-49

Implications for research and practice

The pressures that GP practices are facing

at present in England are significant. Although these circumstances make finding better ways to deliver care pressing, using clinicians' time to address organisational issues represents an opportunity-cost to patient care.

There is currently little robust research to indicate with confidence that the expectations placed on larger-scale general practice provider collaborations in England will be met, or to identify with confidence the potential unintended consequences. As more GP collaborations form and mature in England, evaluation of their impacts will be fundamental to better understand which types work best, in which circumstances, for whom, how, and why. This ideally should happen before large-scale general practice is pursued as national policy across England.

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Provenance

Freely submitted; externally peer reviewed.

Competing interests

Rebecca Rosen is an external GP on Tower Hamlets Clinical Commissioning Group for primary care commissioning and Director of Greenwich Health GP Federation. The other authors have declared no competing interests.

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Discuss this article

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