Title

A systematic review of the impact of new forms of large-scale general practice provider collaborations in England's NHS

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Abstract

Background: 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 general practitioners (GPs). However it is now increasingly being advocated for by national policymakers, and expectations of what 'scaling-up' general practice in England will achieve are significant. They include strengthening the workforce, improving quality, extending services, and generating efficiencies.

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

Design: Systematic review

Method: Embase, HMIC, MEDLINE and SSCI were searched for primary research studies reporting the impact on clinical processes, clinical outcomes, patient experience, workforce satisfaction or costs of new forms of provider collaborations between three or more general practices in England.

Results: Five studies met the inclusion criteria, from 1,782 publications which were screened. Four of the studies examined the same general practice networks, limiting generalisability. Substantial financial investment was required to establish the networks and the associated interventions targeted at four clinical areas. Quality improvements were achieved in the targeted clinical areas through the use of standardised processes, incentives at network level, IT-enabled performance dashboards and local network management. The fifth study of a large-scale multi-site general practice organisation showed that it may be better placed to implement safety and quality processes than conventional practices. However, unintended consequences may arise as a result such as perceptions of disenfranchisement among staff and reductions in continuity of care.

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

Keywords

MESH terms: General practice, Primary health care, Health services, Organisation and administration, Quality Improvement

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.
- We undertook a systematic review of the evidence on the impact of new forms of provider collaborations in England to understand what evidence existed to support these expectations.
- Limited evidence was found which 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 network.
- 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.

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 multi-site practice organisations. It has been argued they are better placed than the traditional, smaller, independent business partnership between a small number of general practitioners (GPs) to strengthen the workforce, improve quality of care, extend services and generate efficiencies (2–7). Whilst many of the earliest collaborations emerged through grass-roots initiatives, building on existing local relationships, national policies are increasingly driving collaborations with a view to creating 'accountable care'-type organisations in England through their integration with other health and social care providers (6–8). Many of the expectations of what 'scaling-up' general practices may achieve appear logical, however, it is unclear what research evidence exists to support them.

This paper 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.

Methods

This review contributed to a larger project led by the Nuffield Trust on 'Large-scale General Practice' (9). The search strategy was developed with a health services research librarian (RP) 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. Embase, Medline, HMIC, and 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 academic 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 systematically capture evidence from international and UK contexts. However due to heterogeneity in the terminology 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.

Box 1 – Inclusion/Exclusion Criteria

All titles and abstracts identified were screened, with full publications being read by LP if they appeared relevant. Publications were assessed using the inclusion/exclusion criteria. If there was uncertainty over whether a study met inclusion/exclusion criteria, it was discussed with other authors until consensus was reached (SK, NM). CASP checklists were used to evaluate the quality of included studies (11). Data were extracted on templates, presented in Tables 1 and 2, by two authors (LP, SK), with discussion to reach consensus. Narrative synthesis was used to present the findings (12).

Results

After the exclusion of duplicates, 1,782 texts were screened. Literature that did not meet the inclusion criteria often described the development, rather than impact, of large-scale 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 (18–21). 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).

Figure 1: Flow diagram of review process

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 one and three years afterwards. Performance was compared to 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 multi-site 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's views on job satisfaction and their views on patient experience (Table 2). It had a low risk of bias based on the CASP checklist (28).

Quantitative studies

In 2008/09, Tower Hamlets Primary Care Trust (PCT) (the local NHS service commissioning organisation at that time, now a Clinical Commissioning Group), established eight geographically defined, managed general practice networks with a total of 36 GP practices. Each network had 4-5 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 (COPD); and cardiovascular disease (CVD).

Previous Local Enhanced Services' funding was channeled into the development of the networks and incentives for the provision of care packages 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 (KPIs). Approximately £10 million per annum was spent across all networks for this initiative (27). Funding enabled staff education, IT-enhanced recall systems, standardised data collection, the analysis of comparative feedback on performance, as well 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 McKinsey management consultancy. The Clinical Effectiveness Group (CEG), based at the local university and led by local GPs, developed the performance monitoring dashboards and measurable KPIs. They also undertook the evaluations.

TABLE 1

Results of observational time-series studies in the four targeted clinical areas appeared promising (Table 1). They demonstrated an improvement on most KPIs - 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 COPD or CVD, 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 for blood pressure, cholesterol and average HbA1c 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. 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 IT-enabled 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 multi-site 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).

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, as this was considered a marker of possible lack of engagement with quality and safety issues). The organisation used surveys of patients 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 events 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 'performance-managed 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 healthcare. An 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 under-performing practices which 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 to the 'buy-in' required by the traditional GP partnership business model. Turnover of staff 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 cost-effectiveness 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, guidelines reinforced at central educational meetings, standard data entry templates, clinical case discussions within networks, administrative target reviews, incentives at network levels, and IT-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, it was approximately £10 million per year. Evidence from one multi-site general practice organisation with over 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 (RP) 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 is starting to be advocated by national policymakers (6,7). It highlights the limited good quality evidence to support this approach. Further research is now underway, which may help fill some of the gaps identified (9,29–33).

This review is complemented by a less systematic 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 health care 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 within the local health economy (34–40). The time and resources involved in health service re-organisations such as scaling up organisations have often been underestimated, and anticipated benefits have not always been delivered (20,41–43). While 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 which exist in 'scaling-up', such as between being small enough to maintain flexibility and inclusive decision-making 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 successfully forming, 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 GP practices are facing at present in England are significant. Whilst 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 upon larger-scale general practice provider collaborations in England will be met, or to identify robustly 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.

Funding and Acknowledgements

LP was funded by a National Institute of Health Research (NIHR) In-Practice Fellowship in the Department of Health Services Research and Policy at the London School of Hygiene and Tropical Medicine. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or Department of Health. This study formed part of a larger piece of work in collaboration with the Nuffield Trust, for which we thank

Judith Smith (Professor of Health Policy and Management, and Director of Health Services Management Centre, University of Birmingham) who led on the early research project development; Natasha Curry (Senior Health Policy Fellow) who provided guidance on this literature review in its initial stages; Rod Sheaff (Professor of Health and Social Services Research, Plymouth University) who provided comments on the literature review in the final stages; Sally Hull and John Robson (Clinical Leads in the Clinical Effectiveness Group, Centre for Primary Care and Public Health, Queen Mary University of London) who reviewed an early draft of the section on Managed General Practice Networks in Tower Hamlets and provided additional information; and, Michael Kidd, Ruth Wilson and Job Metsemakers (World Organization of Family Doctors) for insights into large-scale general practice collaborations internationally.

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Box:

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 e.g. general practice networks, federations, super-partnerships or multi-site practice organisations (1).
- 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.

Exclusion criteria:

- 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 therefore cannot be identified from the rest of the initiative.
- Studies of organisations only providing out-of-hours care.

Box 1: Inclusion and exclusion criteria for systematic review

Figure:

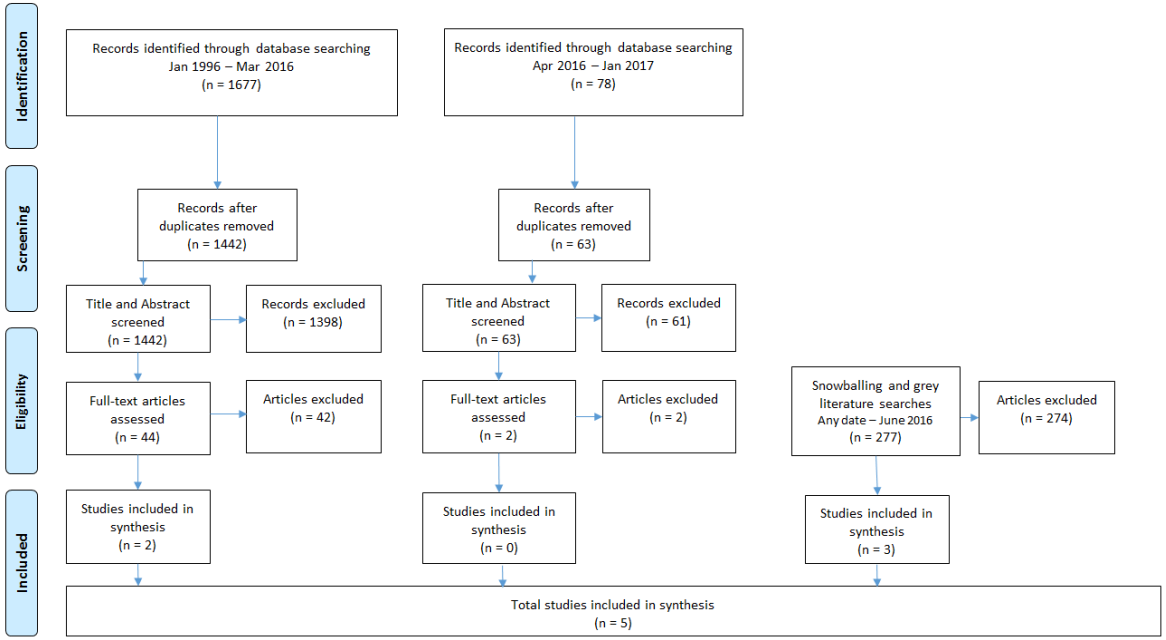

Figure 1: Flow diagram of review process

Tables:

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

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 and others (2011), *BMJ* (22)	Improving MMR vaccination rates: herd immunity is a realistic goal	Observational study. Time-series analysis. Comparison with trends in London and England Intervention phased in Sept 2009 – 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 Sept 2009 to 94% in March 2011 Step change in rate of increase of MMR1 compared to before and after (P<0.001), London and England	Total for 8 networks: £112,000 (used as financial incentive; £14,000/network) 50% in advance, 50% dependent on performance NB: this was in addition to existing direct enhanced services (DES) funding for childhood immunisation

Hull and others (2013), *BMJ Quality and Safety* (23)	Improving outcomes for patients with type 2 diabetes using general practice networks: a quality improvement project in East London	Observational study. Time-series analysis. Comparison with trends in two neighbouring PCTs, London and England Intervention phased in Oct 2009 – Apr 2010 Period of data analysis presented yearly 2007–2012 (retinopathy screen) 2006–2012 (total cholesterol) 2006–2012 (blood pressure) 2005–2012 (HbA1c)	– Financial incentives – Standardised recordingof data – Systematic call and recall with IT – Monthly dashboard feedback on performance – Bi-monthly multidisciplinary team (MDT) meetings with diabetic specialist team – Supported case management and education – Rapidaccessto consultants viaemailor phone	– Number of care plans completed,target:90% – Proportion of patients attending retinal screening, target:80% – Proportion of patients achieving blood pressure (BP) ≤140/80mmHg 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 Pvalue) Rise in joint BP and cholesterol target achieved, from 35.3% in Q1 2009 to 46.1% in Q1 2012 (did not meet target) – Perform better than London and England (noP 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 (noP value)	Total for 8 networks: £1.7 million (>£200,000/ network) 70% in advance, 30% dependent on performance

Hull and others (2014), *Primary Care Respiratory Medicine* (24)	Improving outcomes for people with COPD by developing networks of general practice: evaluation of a quality improvement project in East London	Observational study. Time-series analysis. Comparison with trends in London and England. Intervention phased in Apr 2010 – Jun 2010 Period of data analysis presented yearly 2010–2013 (annual review) 2005–2013 (flu vaccination) 2005–2011 (COPD admissions)	– Financial incentives – Standardised recording of data (including co-morbidities, 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 – 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 email or phone	– Increase number of COPD cases on network registers: target 10% increase in first year – Increase in number of care plans: target 80% – Increase in referrals to community-based pulmonary rehab: target 75% in patients with Medical Research Council (MRC) score ≥3 – Improve influenza vaccination (no target, not financially incentivised as already incentivised by Quality and Outcomes Framework; QOF) – Reduce smoking prevalence (no target, not financially incentivised as already incentivised by QOF) – Reduce emergency hospital admission for COPD (no target, not financially incentivised, only tracked)	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 with MRC score ≥3 increased from 45% in 2010 to 75% in 2013. No national comparator Flu vaccination high prior to intervention, showed '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 to London and England trends	Total for 8 networks: £300,000/annum for 3 years 70% in advance, 30% dependent on performance

Robson and others (2014), *British Journal of General Practice* (25)	Improving cardiovascular disease using managed networks in general practice: an observational study in inner London	Observational study. Comparison with trends in two local PCTs, London and England Intervention phased in 2008 – Apr 2010 Period of data analysis presented yearly 2009–2011 (lipid lowering prescribing) 2004–2012 (coronary heart disease [CHD] BP < 150/90mmHg) 2004–2012 (CHD cholesterol <5mmol/l) 2004–2010 (myocardial infarction mortality in patients <75 years)	– 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	– BP<140/90mmHg for hypertension, stroke and CHD – Cholesterol <4mmol/l for stroke, CHD and diabetes – BP<140/80mmHg 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	Statin prescribing increased more than in two local PCTs between 2009 and 2011 ($p<0.01$) Improvements in cholesterol levels and BP took place at a faster rate than London and England for patients with hypertension, stroke, CHD and diabetes ($p<0.05$ – $p<0.001$) 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 68.9% in 2009 to 71.3% in 2012 Attendance at cardiac rehab decreased from 34.8% in 2009 to 27.7% in 2012 There was no change in influenza vaccination (83%) between 2009 and 2012 Paper also reported a faster rate of decline in deaths from acute myocardial infarction between 2008 and 2012 than local PCTs, London or England. It reduced by 43% compared to an average of 25% for the top 10 PCTs in 2008 ranked by mortality. The authors recognise association is speculative	Total for all 8 networks for all 4 packages of care (CVD, COPD, diabetes, childhood immunisations): £10 million/annum for 3 years

Table 2: The impacts of a large-scale general practice collaboration from a qualitative study (multi-practice organisation England)					
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 and others (2013), *Journal of Health Services Research and Policy* (26)	Primary care quality and safety 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 2011–2012	- Standardised policies and procedures - Facilitated the implementation of systems, e.g. incident reporting, investigating and sharing learning - Reduced continuity of care in some cases	Relieved some clinical staff of administrative duties Enhanced 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