

Large-scale general practice in England: What can we learn from the literature?

Literature review

*Luisa Pettigrew, Nicholas Mays, Stephanie Kumpunen,
Rebecca Rosen and Rachel Posaner*

September 2016

In collaboration with

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



About this report

Traditional general practice is changing. Three-quarters of practices are now working collaboratively in larger-scale organisations – albeit with varying degrees of ambition and organisational integration. Policy-makers and practitioners have high hopes for these organisations and their potential to transform services both within primary care and beyond. But can we be confident that they can live up to these expectations? This report presents findings of an extensive literature review on the subject of large-scale general practice, and contributes to a stream of work by the Nuffield Trust in this area, details of which can be found at: www.nuffieldtrust.org.uk/large-scale-general-practice.

Acknowledgements

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 and provided comments on an early draft of the principal research study by Rosen and others (2016); Natasha Curry (Senior Health Policy Fellow) who provided guidance on this review of the literature in its initial stages; Rod Sheaff (Professor of Health and Social Services Research, Plymouth University) for his review in the final stages and helpful comments; 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 sections 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 internationally.

We also thank Nuffield Trust staff who reviewed the report in its near-final stages: Candace Imison (Director of Policy), Mark Dayan (Policy and Public Affairs Analyst), Rowan Dennison (Editorial Manager) and Sarah Wilson (Digital Content Editor).

Luisa Pettigrew is 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.



Contents

1. Introduction	4
2. Methods	6
3. Findings	8
1. Which organisational forms have large-scale collaborations of GP practices adopted in England?	8
2. What are they expected to deliver?	10
3. What evidence is available on their impact in England?	11
4. What can we learn from initiatives with similarities?	18
4. Discussion	31
Key messages	34
Strengths and limitations of this literature review	35
5. Conclusion	38
References	39
About the authors	46

1. Introduction

Reforms over the last 20 years that have encouraged collaboration among general practitioners (GPs) in England have largely focused on GPs commissioning NHS care. With the exception of out-of-hours cooperatives, general practice services have tended to be delivered by small professional partnerships, financially and administratively independent of other GP practices. Yet over the past decade GPs have started to come together in England to create new larger-scale collaborations between practices. The reasons given for this are diverse, as are the expectations placed upon them.

The medical profession has played a significant role in encouraging the development of networks and federations of GP practices in England (British Medical Association, 2013; Imison and others, 2010; National Association of Primary Care, 2015; Royal College of General Practitioners, 2007, 2008 and 2013). This has come about, in part, as a result of professional objections to policy proposals, such as ‘Darzi polyclinics’, which some in the profession felt put traditional general practice at risk (Royal College of General Practitioners, 2008; Sheaff, 2013). Likewise health think tanks have emphasised the potential of scaled-up general practice groups to improve financial sustainability, extend the scope of general practice and improve the quality of care (Addicott and Ham, 2014; Goodwin and others, 2011; Rosen and Parker, 2013; J Smith and others, 2013).

More recently, the potential role of enhanced collaboration within primary care and across the rest of the health sector has been recognised officially in NHS England’s *Five Year Forward View* (NHS England, 2014) and through the New Models of Care programme’s Vanguard sites, which include 14 multispecialty community providers (MCPs) involving large-scale collaborations between GP practices (NHS England, 2015b). An additional pilot scheme devised by the National Association of Primary Care (NAPC) and the NHS Confederation, and funded by NHS England, the Primary Care Home programme, is providing funding and support in kind to facilitate collaboration among general practices and other primary care services (National Association of Primary Care, 2015). The Prime Minister’s GP Access Fund has also catalysed the formation of general practice collaborations into legal entities in order to take on funding to improve access to general practice (MacDonald and SQW, 2015). Finally, the *General Practice Forward View* recently included support for federations and super-partnerships (NHS England, 2016a), and a new optional contract for multispecialty community providers involving scaled-up general practice groups with a population size greater than 30,000 is expected to be introduced in 2017 (Department of Health, 2015; NHS England, 2016b).

This push for the development of larger groups of GP practices has taken place in the context of: growing patient demand in general practice and beyond; financial pressures on the NHS as a whole; increasing expectations of demonstrating quality and addressing variations in general practice care; recruitment and retention problems in general practice; and new opportunities for GPs to work differently, enabled by the policies designed to encourage general practice to play a more central role in shaping how and where services are delivered. This has also happened during a period when traditional GP practices in

England have perceived a threat from non-GP-owned private companies tendering for general practice services contracts through the ‘alternative provider of medical services’ (APMS) NHS contractual route that was introduced in 2004, and through the ‘any willing provider’ option for community health services which came into play in 2011 (this later changed to ‘any qualified provider’). Scaled-up general practice is expected to deliver a more sustainable model of general practice than the traditional ‘corner-shop’ model.

In this paper we present the findings of a review of the literature which contributes to the Nuffield Trust’s stream of work on large-scale general practice, including the recently published findings of a 15-month mixed methods research study, *Is Bigger Better? Lessons for Large-Scale General Practice* (Rosen and others, 2016).

We aim to answer the following questions:

1. Which organisational forms have large-scale collaborations of GP practices adopted in England?
2. What are they expected to deliver?
3. What evidence is available on their impact in England?
4. What can we learn from initiatives with similarities?

2. Methods

An iterative process was used to identify relevant literature to answer each of the four questions set out on the previous page. Initially, a scoping review was undertaken of NHS England policy documents, health think tank publications, and guidance published by professional bodies about new forms of collaboration between GP practices in England in order to identify which organisational forms were described and what they were expected to achieve (Questions 1 and 2). We also searched for evaluations of clinical networks commissioned by the Department of Health (England), and the National Institute of Health Research, Health Services and Delivery Research programme. References in these documents were screened for relevance, and experts in primary care and health services research were asked for advice on potentially relevant sources of information. During these processes, 135 relevant texts were reviewed, covering academic articles, grey literature (for example reports, policy documents and professional guidance), news articles and websites.

Based on the information gathered during the initial scoping review, a search strategy was developed with the help of a librarian who specialises in health services research (Rachel Posaner). This aimed to capture literature evaluating forms of large-scale general practice provider collaborations (Question 3). By 'large scale' we refer to new collaborations typically of more than three GP practices, which, with the exception of out-of-hours care, would previously have worked largely independently of one another in order to provide care. Four databases were searched – Medline, SSCI, Embase and HMIC – between 1996

Box 1: Inclusion and exclusion criteria used for Question 3

Inclusion criteria:

- Study evaluates the impact of new forms of collaboration between GP practices in England focused on the provision of care (for example general practice networks, federations, super-partnerships or multi-site practice organisations).
- Study evaluates actions of three or more GP practices working collectively.
- Study reports on the impact of one or more of the following as a result of the collaboration: processes and indicators of quality of care, clinical outcomes, patient experience, workforce satisfaction, or costs.

Exclusion criteria:

- Study includes new forms of collaboration between GP practices at scale in England, but evaluation of the collaboration's impact is not a focus of the research (for example integrated care initiatives and the Prime Minister's GP Access Fund where the impacts of new forms of general practice collaboration cannot be disentangled from the impact of the rest of the initiative).
- Study does not contain primary data.
- Descriptive case studies without clear methodology and/or with only self-reported impacts.

and 2016. After the exclusion of duplicates, the titles and abstracts of 1,442 articles were screened and 46 of these were read in full. References from relevant academic articles identified in this search were screened. In order to address Question 3, on the impact of new forms of large-scale general practice collaboration in England, the inclusion and exclusion criteria outlined in Box 1 were used to identify evidence. These criteria aimed to identify studies which were methodologically robust.

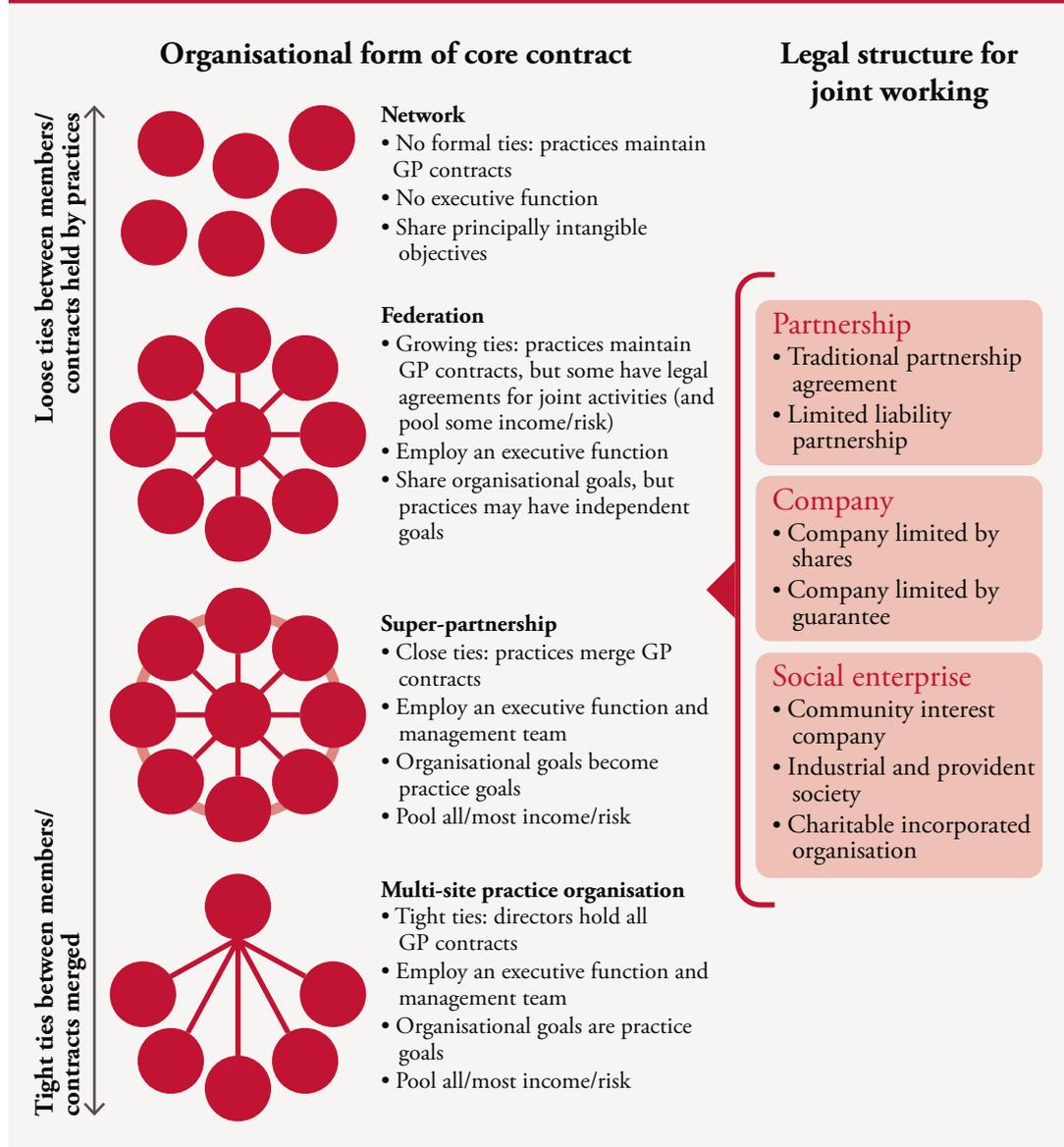
Further academic and grey literature were identified through further iterative searching, including the recommendation of experts in the fields of primary care and health services research. This enabled the capture of additional evaluations of new models of general practice which may not have been picked up by the database search. In reviews of complex evidence, this process of 'snowball' searching and seeking guidance from experts has been shown to increase the yield of relevant results (Greenhalgh and Peacock, 2005). This process also aimed to identify further major evaluations or reviews of GP-led commissioning, clinical networks, integrated care initiatives and out-of-hours general practice cooperatives in England which were identified to have similarities with the processes required to form new general practice provider collaborations and/or their objectives, as well as relevant international literature which contributed to the evidence in order to answer Questions 4. In this process, a further 159 texts were reviewed, including academic papers and grey literature. Systematic collection and assessment of the quality of the literature was not undertaken to answer Question 4, which looked at literature in England and other countries. However, greater consideration was given to systematic reviews, peer-reviewed empirical research, and government-commissioned independent evaluations of relevant national programmes. A narrative approach was taken to synthesise the literature. Thematic analysis was used to identify recurrent themes which emerged in the literature on initiatives with similarities, in order to answer Questions 4 and to draw key lessons in the discussion.

3. Findings

1. Which organisational forms have large-scale collaborations of GP practices adopted in England?

Various terms have been used to describe new forms of large-scale collaboration between GP practices focused on the provision of care in England, including: GP groups, clusters, consortia, family care networks, networks, federations, alliances, joint ventures, super-partnerships, multi-practice organisations and community health organisations (Addicott and Ham, 2014; British Medical Association, 2015a; Care Quality Commission, 2015; Curry and Kumpunen, 2015; Imison and others, 2010; J Smith and others, 2013).

Figure 1: Spectrum of forms of large-scale general practice collaborations



Source: Rosen and others, 2016, who built on the typology originally developed (J Smith and others, 2013).

The terms have not always been used consistently, and the governance structures underlying the various models are notably heterogeneous. However, in essence, they can be considered to be a spectrum of forms of collaboration between GP practices that exhibit different degrees of financial and administrative interdependency, as shown in Figure 1.

Conceptually the models can be differentiated in terms of what they do with their core general practice contract, and/or what legal form they adopt to undertake other activities. With regard to the core contract, at one end of the spectrum there are loosely associated **networks** of GP practices with goals that are largely intangible, such as the informal exchange of information. The participating GP practices remain independent of one another. Next are **federations**, which are still considered networks from the organisation perspective of organisational theory, but they have growing ties and more formal agreements between practices to undertake joint activities than networks. Federations often pool part of their existing income in order to support back-office functions, or set up a new legal entity in order to tender for community health services contracts. In **super-partnerships**, a new partnership agreement is put in place between partners of existing practices – and partners form part of the board of the new organisation. A small number of partners may be nominated to form an executive group to make day-to-day decisions and guide strategic decisions to be approved by the larger group. General practice contracts may continue to be managed by each individual practice, although responsibility for these will lie ultimately with the new partnership via the partnership agreement. Alternatively, the GP contracts may be handed over to a designated executive with agreement regarding how the funds will be redistributed and how partners will be paid. In **multi-site practice organisations (MPOs)**, the organisation grows through taking over practices, often where partners are retiring or NHS contracts have been put out to tender. In this case, the partnership or company may hold more GP contracts than would traditionally have been the case, and is likely to have a central leadership and management team making all strategic decisions. Although a network of practices exists within a super-partnership or an MPO, arguably they are no longer considered a ‘network’ from the organisation perspective of organisational theory, but would instead be regarded as a single organisation.

These different forms of general practice collaborations are not mutually exclusive. For example, federations can take on new practices, as MPOs typically would, through setting up a separate legal entity. The same group of GP practices, who may or may not have merged their core GP contracts into a single organisation, may have more than one governance arrangement or legal structure for different activities. Legal structures include various forms of partnership agreements, private companies and social enterprises. Each provides different limits to liability, profit status and re-investment/distribution requirements; opportunities to hold General Medical Services, Personal Medical Services or APMS NHS contracts; and access to the NHS pension scheme (British Medical Association, 2015b).

It also is possible for a GP practice to be part of a local general practice network, for example, but also belong to an MPO that has practices that fall into different clinical commissioning group (CCG) areas – resulting in complex governance structures. The majority of collaborations are currently reported to be at the network-federation end of the spectrum, with super-partnerships and MPOs currently estimated to represent under five per cent of these new forms of large-scale general practice collaboration (Kumpunen and others, 2015).

2. What are they expected to deliver?

Review of NHS England policy documents, and publications from GP professional organisations and health think tanks identified wide-ranging expectations for new forms general practice collaborations. These documents outline how these collaborations are expected to enable changes through a number of mechanisms, which would ultimately improve the sustainability of general practice and patient outcomes. Theoretical expectations of what large-scale general practice may deliver, and how, are presented below under four headings, although some mechanisms, such as investing in information technology (IT) or improving patient and public involvement, are cross-cutting:

- **Strengthen the workforce**, for example through: developing joint standardised training and education in particular for ongoing professional development; enabling peer support and competition; investing in a more diverse workforce; sharing staff when needed; and improving opportunities for career progression for all staff.
- **Increase access and extend services**, for example through: extending opening hours; introducing new routes of access; enhancing the capacity of practices to offer specialist services in the community; improving clinical pathways; delivering integrated care in partnership with other actors, including secondary care, social care, and private and/or voluntary sectors, through joint contracting or capitated budgets; and improving patient and public involvement.
- **Improve clinical quality and reduce variation**, for example through: strengthening clinical governance; standardising procedures; investing in technology; stronger performance monitoring and feedback; spreading best practice; and adopting a population-based approach to services.
- **Improve financial sustainability of practices by creating efficiencies and economies of scale**, for example through: common back-office functions; shared training and staffing; task shifting within the workforce; joint investment in technology; better integration of care; and purchasing, providing and commissioning at scale.

(Addicott and Ham, 2014; Goodwin and others, 2011; Imison and others, 2010; National Association of Primary Care, 2015; NHS England, 2014 and 2016b; Roland and others, 2015; Royal College of General Practitioners, 2007, 2008 and 2013; Rosen and Parker, 2013; J Smith and others, 2013).

Ultimately, these changes aim to modernise the traditional ‘corner shop’ model of general practice and provide a stronger collective voice for general practice in the local health care system. The expectations placed on these new forms of collaboration are significant and ambitious; therefore it is important to understand what evidence there is that they will be able to deliver.

3. What evidence is available on their impact in England?

Various health think tank publications were identified that describe new models of general practice collaboration via a selection of case studies (Addicott and Ham, 2014; Imison and others, 2010; Rosen and Parker, 2013; J Smith and others, 2013). These reports are largely designed to provide guidance on the formation of the new models and describe potential or real innovations in workforce, technology or quality improvement, but do not offer a robust evaluation of their impact. Grey literature such as news articles were also identified which provide self-reports of the development and impact of these new models of general practice collaboration (Barr, 2016; Evans, 2016; Royal College of General Practitioners, 2016b and 2016c; M Smith, 2015). However, grey literature did not meet our inclusion/exclusion criteria for this question, which aimed to identify studies which analysed primary data and were methodologically robust (see Box 1 on page 6).

Recent papers evaluating integrated care initiatives in England also indirectly examined the impacts of new general practice collaborations since these were present in some of the sites studied; however, it was not possible to disentangle the impact of larger-scale general practice collaborations in these studies from the impact of the wider integration of care initiatives (Erens and others, 2015; RAND Europe and Ernst & Young LLP, 2012; Sheaff and others, 2015). Similarly, evaluations of the first wave of the Prime Minister's GP Access Fund (which provided £50 million in 2014 to improve access to general practice across 20 pilot sites in England) involved new forms of collaboration between GP practices as networks, federations and/or new legal entities in around half of the pilots (MacDonald and SQW, 2015). The first evaluation report outlined how the GP Access Fund catalysed the development of several of these new forms of collaboration and acknowledged their contribution in increasing access for patients through, for example, shared extended-hours clinics. However, this initial evaluation report only provides aggregated results across all the pilot sites. It was therefore not possible with the report which is currently available to unpick the impact of the larger-scale general practice collaborations from the effects of various other interventions which took place across sites. Evaluations of these initiatives therefore did not meet the inclusion criteria to answer Question 3. They have, however, helped inform the answer to Question 4, because they offer a degree of proof-of-concept of various large forms of networks or organisations.

Only five research studies were identified that met the inclusion/exclusion criteria for Question 3. Four used quantitative methods in the same managed general practice networks in the London Borough of Tower Hamlets to evaluate the impact of intervention packages on quality of care and clinical outcomes. They also reported some cost data (see Table 1; Cockman and others, 2011; Hull and others, 2013 and 2014; Robson and others, 2014). One qualitative study examined a nationally-dispersed MPO with 50 GP practices (Baker and others, 2013). This study evaluated quality and safety processes, and provided staff views on their job satisfaction and staff views on patient experience (see Table 2).

Quantitative studies: Tower Hamlets Managed General Practice Network

In 2008/09, Tower Hamlets Primary Care Trust (PCT) (population approximately 260,000) established eight geographically defined, managed general practice networks with 4–5 GP practices each (population approximately 30,000–50,000). Through these networks, packages of care in four clinical areas were delivered between 2009 and 2012: childhood immunisations; type 2 diabetes; chronic obstructive pulmonary disease (COPD); and cardiovascular disease (CVD). Tower Hamlets was also one of the Integrated Care Pilots and later Integrated Care and Support Pioneer sites evaluated (Erens and others, 2015; RAND Europe and Ernst & Young LLP, 2012). Each network employed a manager, clerical staff (for example a recall coordinator) and had an educational budget. Care packages were rolled out between 2008 and 2010, with all eight networks functioning by April 2010. Previous local enhanced services' funding was channelled into the development of the networks and incentives for packages of care. This came to approximately £10 million per annum in total across all networks. Funding for incentives was distributed at network level by the PCT rather than to individual practices, in order to encourage peer scrutiny and the collective management of funds. Each network had autonomy to use funds to achieve their key performance indicators (KPIs) and decide how these would reach individual practices (Robson and others, 2014). It should be noted that although referred to as networks, the shared financial rewards and collaboration needed to achieve these, meant that the collaboration of GP practices in Tower Hamlets are conceptually more similar to federations than networks, as illustrated in Figure 1 on page 8.

The four studies examined the impact of the implementation of the four care packages across the networks. The packages of care involved complex interventions which partly depended on the existence of the network, including education for staff, financial incentives distributed at network level, IT-enhanced recall systems, standardised data collection, comparative feedback on performance and management across the networks. The programmes were developed by local GP clinical leaders, public health teams, PCT managers and had input from McKinsey management consultancy. The Clinical Effectiveness Group (CEG) based at the local university and led by local GPs developed the dashboards and measurable KPIs. They also undertook the evaluation of the interventions. Findings of the research studies are presented in Table 1.

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), <i>BMJ</i>	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)	<ul style="list-style-type: none"> – 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 	<ul style="list-style-type: none"> – Achieve 95% uptake of all childhood immunisations 	<p>Uptake of first MMR1 vaccine before age 2 rose from 80% in Sept 2009 to 94% in March 2011</p> <p>Step change in rate of increase of MMR1 compared to before and after (P<0.001), London and England</p>	<p>Total for 8 networks: £112,000 (used as financial incentive; £14,000/network)</p> <p>50% in advance, 50% dependent on performance</p> <p>NB: this was in addition to existing direct enhanced services (DES) funding for childhood immunisation</p>
Hull and others (2013), <i>BMJ Quality and Safety</i>	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)	<ul style="list-style-type: none"> – Financial incentives – Standardised recording of 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 – Rapid access to consultants via email or phone 	<ul style="list-style-type: none"> – 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% 	<p>Rise in care plans from 10% in Q1 2009 to 88% in Q1 2012</p> <p>Rise in retinal screening from 72% in Q1 2009 to 82.8% in Q1 2012</p> <ul style="list-style-type: none"> – Step change catch-up with London and England (no P value) <p>Rise in joint BP and cholesterol target achieved, from 35.3% in Q1 2009 to 46.1% in Q1 2012 (did not meet target)</p> <ul style="list-style-type: none"> – Perform better than London and England (no P value) <p>Average HbA1c fell from 7.8% in 2009 to 7.66% in 2012 (did not meet 7.5% target)</p> <ul style="list-style-type: none"> – Trend similar to London and England (no P value) 	<p>Total for 8 networks: £1.7 million (>£200,000/network)</p> <p>70% in advance, 30% dependent on performance</p>

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
Hull and others (2014), <i>Primary Care Respiratory Medicine</i>	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)	<ul style="list-style-type: none"> – 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 	<ul style="list-style-type: none"> – 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) 	<p>COPD register increased by 21% between 2010 and 2013</p> <p>Annual reviews and care planning increased from 53% in 2010 to 86.5% in 2013</p> <p>Pulmonary rehab in patients with MRC score ≥ 3 increased from 45% in 2010 to 75% in 2013. No national comparator</p> <p>Flu vaccination high prior to intervention, showed ‘steady improvement’. In 2012 it was ‘significantly higher’ than rate in England</p> <p>No improvement in smoking prevalence: in 2010 39% of patients with COPD smoked; in 2013 40.4% smoked</p> <p>Emergency COPD admissions ‘have fallen’ but remain higher than London average. Trend suggests a step-change compared to London and England trends</p>	<p>Total for 8 networks: £300,000/annum for 3 years</p> <p>70% in advance, 30% dependent on performance</p>

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
Robson and others (2014), <i>British Journal of General Practice</i>	Improving cardiovascular disease using managed networks in general practice: an observational study in inner London	<p>Observational study. Comparison with trends in two local PCTs, London and England</p> <p>Intervention phased in 2008 – Apr 2010</p> <p>Period of data analysis presented yearly</p> <p>2009–2011 (lipid lowering prescribing)</p> <p>2004–2012 (coronary heart disease [CHD] BP < 150/90mmHg)</p> <p>2004–2012 (CHD cholesterol <5mmol/l)</p> <p>2004–2010 (myocardial infarction mortality in patients <75 years)</p>	<ul style="list-style-type: none"> – 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 	<ul style="list-style-type: none"> – BP <140/90mmHg for hypertension, stroke and CHD – Cholesterol <4mmol/l for stroke, CHD and diabetes – BP <140/80mmHg for diabetes <p>From Apr 2010:</p> <ul style="list-style-type: none"> – Proportion of new heart attacks reviewed at GP surgery < 3 weeks of hospital discharge – Attendance at cardiac rehab – Recording of care plan 	<p>Statin prescribing increased more than in two local PCTs between 2009 and 2011 (p<0.01)</p> <p>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)</p> <p>Proportion of patients with a care plan increased from 42.7% in 2011 to 61.6% in 2012</p> <p>Proportion of people with a new heart attack seen < 3 weeks of discharge increased from 68.9% in 2009 to 71.3% in 2012</p> <p>Attendance at cardiac rehab decreased from 34.8% in 2009 to 27.7% in 2012</p> <p>There was no change in influenza vaccination (83%) between 2009 and 2012</p> <p>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</p>	<p>Total for all 8 networks for all 4 packages of care (CVD, COPD, diabetes, childhood immunisations): £10 million/annum for 3 years</p>

Results of the observational before-and-after studies in four targeted clinical areas (see Table 1) appear promising. They demonstrate a step-change improvement in most, although not all, areas. This includes achieving immunisation targets, proactive care planning targets and screening targets (see Cockman and others, 2011; Hull and others, 2013) – and, for people with COPD or cardiovascular disease, increasing the number of individuals on registers and numbers referred into community rehabilitation clinics (see Hull and others, 2014; Robson and others, 2014). There were also improvements in measures of health outcomes, such as achieving agreed targets for blood pressure, cholesterol and average HbA1c levels for patients with type 2 diabetes (see Hull and others, 2013).

Achievements were made primarily through the use of network-wide financial incentives (some tied to the NHS general practice contract, Quality and Outcomes Framework (QOF), but others locally agreed with the PCT/CCG); standardised recording of data; systematic call and recall using a shared clinical system; peer review using a monthly dashboard; and regular multidisciplinary team meetings. Other enablers included the introduction of new services, such as a community-based pulmonary rehabilitation unit and a hospital admission avoidance service, which involved a same-day home assessment by a respiratory nurse specialist, and aimed to improve both patient and GP confidence in managing patients at home; or new staff, such as clinical nurse specialists across the network who offered clinics, as well as trained practice nurses.

Robson and colleagues (2014) used two comparator PCTs to demonstrate their progress on cardiovascular disease in Tower Hamlets. They reported that GP practices in the other two local PCTs had the same intervention package as the networks in Tower Hamlets, including the dissemination of clinical guidelines to all staff that were also 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 as was the case in Tower Hamlets. Practices in other PCTs also did not have IT-enabled performance dashboards with traffic light (red, amber, green; RAG) ratings, and did not have network managers who, over time, developed sophisticated and locally tailored solutions to achieve targets. Results showed that practices in the comparator PCTs did better than the national average on all measures, but not as well as Tower Hamlets. Robson and colleagues (2014) highlighted that Tower Hamlets and the other two PCT areas used as comparators had already performed better in QOF than other areas in London and England prior to 2008. For example, Tower Hamlets was the top prescriber of statins in England.

Qualitative study: Multi-site Practice Organisation, England

The MPO studied was founded and owned by a small number of GPs. At the time of the study 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. The study was a qualitative analysis of the organisation's quality and safety systems, and processes. It examined the workforce's views on job satisfaction and patient experience (although the value of the evidence on patient experience was limited as patients were not directly interviewed) (see Table 2).

Table 2: The impacts of a large-scale general practice collaboration from a qualitative study (MPO 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), <i>Journal of Health Services Research and Policy</i>	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

The owners of the company who were interviewed reported commercial, reputational and moral reasons for working to deliver high-quality care and ensure patient satisfaction. Multiple mechanisms to ensure the safety and quality of care were reportedly enabled though the organisation including: standardising processes such as incident reporting; enhancing training and inter-staff support; reducing administrative burden on frontline clinicians; optimising learning between practices; and comparing practices (for example practices under reporting 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 in order to create competition between practices. There were mixed views on the ability to share learning between practices, with some examples of rapid dissemination of changes following an incident; but other opportunities to learn from one another, such as how to improve processes of care, were not necessarily being maximised. 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.

A central call centre was set up to take all telephone requests for appointments. This was intended to allow more face-to-face time between receptionists and patients at practice level, and to improve efficiency in the allocation of appointments. However, there were mixed views on this, with receptionists stating they still often had to deal with calls from the call centre and reports from staff that some patients did not like the new call centre.

Patient participation groups were reported to have been utilised 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. Some staff reported feeling undervalued as 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 affected the relational continuity of care, and resulted in reports of patient dissatisfaction. This also posed a risk to the consistent implementation of quality and safety procedures, and increased the amount of time spent on staff induction processes.

In summary, the evidence available appears to suggest that there are key enabling actions of GP practices working collaboratively at scale in the provision of care that could lead to improved performance. A large part of this is related to new management interventions. There are also indications of challenges and unintended consequences related to maintaining continuity of care, workforce turnover and perceived patient experience with an MPO model of large-scale general practice. Overall, however there is limited evidence, and what evidence there is is suggestive rather than definitive.

4. What can we learn from initiatives with similarities?

In the absence of much methodologically robust empirical evidence on new forms of general practice collaboration in England, we have drawn on evidence from a wider range of research and evaluations of initiatives with similarities to the process of formation and/or objectives of scaled-up general practice provider collaborations in England. The similarities are:

- **Common goals:** initiatives share similar clinical and administrative goals (for example improving clinical outcomes, patient experience and/or reducing expenditure).
- **Collaboration needed:** initiatives have a similar need for new forms of inter-organisational collaboration among members to achieve goals.
- **Inter-dependency:** initiatives require varying degrees of joint financial and/or administrative responsibilities between members, resulting in lesser or greater levels of inter-dependency subject to the development of their chosen organisational form.
- **Similar expectations:** the expectations placed upon initiatives, by policy-makers, in terms of what they can achieve (for example better utilisation of technology, increasing patient access, influencing the local health economy and/or improving patient and public engagement) are similar to those placed on large-scale general practice collaborations.

Literature on **clinical networks** provides opportunities to learn about their development, structure and functions. These have parallels with large-scale general practice collaborations because of the collaboration that occurs among professionals and different provider organisations in order to improve quality of care, share learning and address complex problems. Experiences in which **GP-led commissioning** in England has been the core purpose of bringing GPs together also provide insights into how GPs collaborate between practices and manage joint responsibilities. Likewise, in **out-of-hours cooperatives**, GPs from different practices need to work together to offer access to care outside routine working hours.

Recent **integrated care initiatives** in England where there has been both ‘horizontal’ integration within primary care and between GP practices, as well as ‘vertical’ integration across primary care and secondary care services, have involved new forms of large-scale general practice collaborations. Likewise, many of the **Prime Minister’s GP Access Fund** pilot sites involved large-scale general practice collaborations. Although it is not possible from the reports which are currently available to disentangle the impact of the inter-practice collaboration from the rest of the initiative and/or other external factors, evaluations of these national pilots still provide opportunities to understand how collaborations between general practices evolve and may perform.

Similarly, there are opportunities to learn from experiences in **other countries**. New forms of large-scale general practice collaborations are emerging in Scotland (referred to as clusters) and Northern Ireland (referred to as federations), and have been in place in Wales (referred to as clusters) for around four years. The literature search also identified new forms of collaboration that have arisen over recent decades between GPs (who had previously largely worked independently or in small groups) in other countries including Australia, Canada, New Zealand and the United States. There is also a pool of literature on **organisational management** in health care and research on specific topics, such as the use of **telephone access** or **task-shifting in the workforce**, which offer insights into some of the challenges large-scale general practice collaborations may face in achieving their goals and meeting expectations.

The following section presents the key findings of the literature described above and provides reflections on this, in particular highlighting the decisions and challenges that may be encountered when trying to achieve the objectives outlined in Question 2. It is divided into two parts:

- The first part explores evidence that can inform the formation and **development** of large-scale general practice collaborations. It is grouped under themes that were frequently identified in the wider literature as relevant: mandated or voluntary formation; governance and ownership; and size.
- The second part examines the evidence of **impact** from research and evaluations relevant to the four areas that new large-scale general practice collaborations are expected to address: strengthening the workforce; increasing access and extending services; improving quality of care and reducing unwarranted variation; and creating efficiencies and economies of scale.

Development

Mandated or voluntary formation

Networks and other forms of inter-organisational collaborations can be broadly considered in terms of whether they emerge voluntarily, ‘bottom-up’, or are mandated, ‘top-down’. Some evidence suggests that if the objectives of mandated networks are closely aligned with those of the health professionals in them, they can stimulate opportunities for working together and offer legitimacy to what they do (Guthrie and others, 2010). Mandated initiatives may also provide greater clarity of purpose and guidance on development. Largely, however, mandated networks are more likely to result in the disengagement of clinicians and stifle innovation (Goodwin and others, 2004). Evidence from various forms of GP-led commissioning and integrated care initiatives

echo these findings, where enforced practice participation and statutory responsibilities appear frequently to result in clinician disenfranchisement and disillusionment (Erens and others, 2015; Miller and others, 2016; Smith and Mays, 2007 and 2012).

Yet not mandating participation in a local collaboration of general practices, in a context where there is limited direction as to the structure and priorities for these new groups, may result in inequities and inefficiencies. Allowing new general practice provider collaborations to emerge organically may also further cloud matters around conflicts of interests since local clinical leaders often participate in both the commissioning and provision of services. Research into English CCGs, which are now mandated statutory bodies but were allowed scope for discretion in their initial stages of development, illustrates how complexity in structure and lack of uniformity has potentially clouded channels of accountability (Checkland and others, 2013; McDermott and others, 2016).

Experiences over the past two decades in Australia (Divisions of General Practice), New Zealand (Independent Practitioner Associations) and Canada (various forms of Family Physician networks in Alberta, Ontario and Quebec), where participation in a GP network has been incentivised through a number of mechanisms but not mandated, suggests that while voluntary membership can help harness clinician engagement, 15–30 per cent of GPs will never join a network voluntarily and it can be difficult to bring about focused change through such networks (Carne, 2013; Gauld and Mays 2006; HealthForceOntario, 2015; Horvath, 2014; Hutchison and others, 2011; Primary Health Care Research and Information Service, 2016; Smith and Sibthorpe, 2007). Looking at collaborations between general practices in Australia in more detail, Divisions of General Practice were originally set up in the 1990s to help implement public health initiatives. These were replaced by Medicare Locals in 2011, focusing on other primary care services as well as general practice. Medicare Locals were allowed to develop organically. However, this was reported to result in geographic misalignment between these primary care groups and local public hospital networks, as boundary agreements had been left to local negotiation. How the Medicare Locals networks evolved also resulted in significant variation in the extent to which they engaged with local hospital networks, often lacking the power and authority to effectively negotiate. There was progressive disengagement of GPs, reported to be as a result of changes in governance structures, and an overall absence of clarity in what many Medicare Locals were trying to achieve. With considerable variability in both the scope of activities performed and delivery strategies, the new government replaced them after only four years in existence with Primary Healthcare Networks, in the hope of addressing these issues (Booth and others, 2016; Horvath 2014; Javanparast and others, 2015; Primary Health Care Research and Information Service, 2016).

Mandating collaboration between GP practices in England is likely to be met with resistance and professional disengagement, at a time when the morale of general practice is already low, and the relationship between health professionals and the government strained. Yet, if national and local commissioners do not effectively ‘force’ GP practices into large-scale place-based collaborations, potential inequalities and duplications of efforts are likely to emerge across areas where collaborations do not include practices that are perceived to not fulfil membership criteria or where practices have no interest in collaborating with a group. It should be noted, however, that the distinction between voluntary and mandated networks is not always clear cut (Ferlie and others, 2010; Guthrie and others, 2010). While there is no current mandate for the development of large-scale general practice collaborations, there are clearly growing policy, peer

and financial pressures, as well as incentives, driving GP practices to become part of larger groups in England; the most recent example of which is the anticipated 2017 multispecialty community provider contract (British Medical Association, 2013 and 2015a; Gerada, 2009; Imison and others, 2010; National Association of Primary Care, 2015; NHS England, 2014 and 2016a; Royal College of General Practitioners, 2007, 2008 and 2013). Whether voluntary or mandated, or perhaps a hybrid model of evolution somewhere in between, the importance of clinical engagement, the need for GP practices to have a sense of ownership and autonomy at both practice and organisational level, for the success of organisational change is consistent throughout the literature.

Governance and ownership

Previous initiatives that have brought GP practices together to commission services have often shaped relationships and trust among GP practices in local areas, which can influence how, and if, new provider collaborations evolve (Checkland and others, 2012; Miller and others, 2016; Zachariadis and others, 2013). In particular, they can influence the level of trust that exists between GPs as they embark on what may involve significant joint administrative and financial commitments. Four factors have been proposed to shape the development and governance arrangements of networks: the number of members of a network; levels of trust; degree of consensus on goals; and dependency of members on the network to achieve their goals. Areas of potential tension after formation include differing views on governance processes, such as: efficiency and speed in decision making versus inclusiveness; the desire to achieve legitimacy primarily within the organisation or external to it; and having organisational flexibility versus stability. If agreement is not reached on the fundamental values and the form of governance is not well aligned to the combination of factors outlined above, it can result in ineffectiveness or the dissolution of the network. If the network survives, over time it is likely to evolve from a shared, participant-driven form of governance, to a brokered, externally driven form of governance (Provan and Kenis, 2008).

The use of networks in health and social care has been proposed in policy as an alternative form of governance to markets and hierarchies. Whilst hierarchical organisations can offer a degree of order and predictability, networks have the potential to improve innovation and responsiveness through collaboration based on trust and reciprocity among a diverse range of members, without having to become a single organisation. Networks have been used to address complex health and social issues across professional boundaries (Ferlie and others, 2010). The majority of emerging general practice provider collaborations in England to date have come together as networks or federations of GP practices, retaining local practice ownership. These organisational forms may be considered well suited to GPs, who share a 'clan' based culture in which shared norms, participative approaches and professional autonomy are familiar and highly valued (McDonald and others, 2010). Therefore, while evidence from other sectors points to the importance of the formalisation and standardisation of operating procedures in multi-site organisations (Crump and Edwards, 2014), trying to implement these in general practice may create significant challenges. Likewise, tensions may emerge when goals become dependent on relationships outside the network, which may need to rely on more hierarchical forms of governance internally, in particular, as the collaboration grows in size.

Changing to a more hierarchical form of governance is likely to mean some GPs relinquishing some control over their practice and professional autonomy. While this is a departure from the 'soft' governance traditionally seen in GP partnerships, it is

not necessarily different to that which already exists between GP partners and other employed staff, and was seen when PCTs emerged (McDonald and others, 2010). Such a shift has also already begun to happen between GPs within practices, with a downward trend in the number of GP partners, and the proportion of salaried GPs growing from eight per cent in 2003 to 25 per cent in 2014 (British Medical Association, 2015c). Some of the more developed large-scale general practice collaborations have evolved from networks, into federations, and then into super-partnerships, and have an agreed internal hierarchy with standardised pay packages and career ladders (Rosen and others, 2016). Arguably, this has greater similarities, at least in terms of organisational structure, to a corporate MPO than to a traditional GP partnership.

A research study examining how the degree of organisational integration in primary care affects the coordination of care for older people with multiple chronic conditions concluded that combining general practice and community health services within one organisation was more likely to enable care coordination and continuities of care, than coordination by a network. It found that networks more frequently encountered barriers to good governance than single organisations, such as: weak information flows and organisational links; unaligned financial incentives and targets; limited power to generate accountability; and decisions being influenced by considerations of income allocation between members (Sheaff and others, 2015). In the same study, Sheaff and colleagues (2015) highlighted that there are various ownership models for integrated organisations that could combine general practice and community health services which could be managed and, where applicable, owned, by doctors, nurses, other clinicians, or a mixture. Models included publicly owned polyclinics; corporate primary care providers; polyclinics operated by a cooperative, clinician-owned or other 'third-sector' organisations; or professional partnerships of larger scale and scope than has until now been usual in the NHS.

Other research by Sheaff and colleagues (2012) suggests that professional partnerships and non-hierarchical organisations tend to compete on quality rather than price, as they try to maintain their members' incomes and working conditions. This puts them at a disadvantage when competing against corporate providers. However, they largely pursue quality of care goals that are more closely aligned to NHS objectives than those of for-profit corporations which tend to be more financially driven. Therefore, in commissioning health services from professional partnerships and non-hierarchical organisations, commissioners are likely to be less dependent on complex incentive schemes, but they need to provide sufficiently long contracts (for example, greater than five years) for potential returns on investment in activities designed to improve quality of care to be realised (Sheaff and others, 2012).

The role of private companies in the provision of health care has always been controversial (Braithwaite and others, 2011; Salisbury, 2008). The sale of out-of-hours general practice cooperatives in England by the original GP founding members to corporate private provider companies illustrates how contentious the issue of perceived differences in private interests in NHS general practice can be (Ramesh, 2012; Silverman, 2012). Findings of a study that looked at changes in quality of care following the introduction of APMS contracts for the delivery of general practice services in England concluded that the use of APMS contracts had not led to improvements in quality and may have resulted in worse care (Greaves and others, 2015). Further research using the general practice patient survey suggested that commercial providers of out-of-hours GP care were associated with poorer patient experiences of care (Warren and others, 2015). Yet, while there has

been a diversification of who can hold contracts for the provision of general practice services, less than five per cent of general practice contracts are APMS and only around half of these are run by limited companies (Greaves and others, 2015; Sheaff, 2013). Therefore, the scale of corporate 'privatisation' in general practice service provision is still small. Evidence on how types of ownership affect types and quality of services and associated costs in general practice points to trade-offs between better quality and lower costs, at least in the short-term; but longer-term initial savings on costs may not be sustained due to less favourable effects on quality of care. Overall, however, the impact of ownership type and governance models in general practice remains unclear and is an under-researched area (Baker and others, 2013; Sheaff, 2013). The size of general practice and primary care organisations on the other hand has been the focus of more research.

Size

The optimal size of general practice provider groups is likely to depend on their functions. There are a number of issues related to size, including the size of organisation needed for efficient management and decision-making in a style that appeals to GPs and maintains their engagement; and the size of population needed to manage variations in clinical risk and related costs. The size of collaboration can be measured by the number of registered patients across practices, the number of GP practices or the number of partners involved. The relationship between the size of individual practices within the larger-scale collaboration and performance is also a relevant consideration.

Evidence suggests that in professional partnerships and non-hierarchical organisations where there are ten or more partners, dis-economies of scale start to emerge due to challenges in coordinating decisions and diminishing returns from external incentives being felt by partners (Sheaff and others, 2012). With caution, this evidence could theoretically be applied to new forms of large-scale general practice collaborations, such as super-partnerships, where one GP practice could be considered as one partner. There are clearly factors which limit the transferability of this evidence, such as differences of opinion between partners within individual practices. However, it suggests that large-scale general practice organisations that wish to function as a form of partnership similar to traditional GP partnerships, may struggle to do so with more than ten GP practices. This is particularly likely if member practices are large and differences between partners within practices already exist.

In terms of the size of population needed to manage clinical risks and associated costs, the previous literature on GP-led commissioning does not indicate a precise population size for managing clinical risk and associated costs in a capitated environment, as this depends largely on the range of services that the organisation is responsible for (Bojke and others, 2001; Greaves and others, 2012; J Smith and others, 2004). However, a minimum population of 25,000 rising to around 100,000 – the minimum depending on the level of financial risk involved in the services commissioned – is generally regarded as necessary to enable adequate risk sharing of pooled budgets across primary and secondary care (Ham, 2010).

The NAPC/NHS Confederation pilots have set the lower limit at 30,000 registered patients per Primary Care Home, but propose an upper limit of 50,000. They report that these figures are based on evidence from GP fundholding in the 1990s regarding financial risk bearing for elective services and general practice pharmaceuticals, as well as evidence from social network theory, which suggests that there may be cognitive constraints on a network with more than 150 people – which in the case of the Primary Care Home

means that the upper limit of staff per collaboration should be around 150 in order to increase the likelihood that all staff develop familiarity with one another (Ham, 2010; Hill and Dunbar, 2003; National Association of Primary Care, 2015). In Scotland, 'GP clusters' are proposed to cover populations of 30,000–50,000, although initial pilots cover up to 80,000 (Royal College of General Practitioners Scotland, 2015; Scottish Government, 2016). In Wales, 'GP clusters' cover populations in the region of 30,000–70,000 (NHS Wales, 2016; Public Health Wales NHS Trust, 2013).

Based on an average GP practice list size of 7,000 patients, general practice collaborations of the population sizes outlined above are likely to involve fewer than ten practices. Meanwhile, the populations of multispecialty community provider pilots (referred to as New Models of Care or Vanguards) in England are mostly in the region of 100,000–300,000; some up to 800,000 (NHS England, 2015a). These represent a much greater number of GP practices and partners, although multispecialty community 'building blocks' are described as 'care hubs' with integrated teams covering communities of 30,000–50,000 people (NHS England, 2016b). In Northern Ireland, 'GP federations' are also emerging that will include all local GP practices, with each federation covering about 100,000 patients and about 20 GP practices (British Medical Association Northern Ireland, 2016).

Despite the frequent focus on organisational size, there is generally a lack of consistent association between organisational size and performance throughout the literature. A review of organisational factors and performance across different forms of health care organisations concluded that there was no consistent or strong relationship between performance and organisational size, ownership, leadership style, contractual arrangements for staff, or whether there is competition between providers or performance management of providers (Sheaff and others, 2003). Another review of integrated primary care organisations found no consistency between the size of the organisation and its productivity or transaction costs (Simoens and Scott, 2005). However, without adequate evolution of governance arrangements, it is acknowledged that professional collaborations can become too big, succumbing to internal tensions, becoming bureaucratic and resulting in health professional disengagement (Bojke and others, 2001; Goodwin and others, 2004).

Evidence on the size of individual GP practices and quality of care through indicators such as clinical processes and/or outcomes (for example QOF or unscheduled admissions), and patient-reported outcomes is conflicting. Practices with less than ten doctors have been found to have fewer unscheduled admissions in the US, but this is not a consistent finding internationally or in the UK (Casalino and others, 2014; Huntley and others, 2014; Kelly and Stoye, 2014). A systematic review of the effect of GP practice size on quality of care found better patient satisfaction with access in smaller practices, but limited evidence to support other associations (Ling Ng and Ping Ng, 2013). A review by the Institute of Fiscal Studies identified significant variation between the performance of practices of a similar size across a number of indicators, but found generally poorer performance in single-handed practices. On the other hand, while practices with more than six full-time equivalent GPs tended to have better QOF scores, they had lower patient satisfaction scores than smaller practices (Kelly and Stoye, 2014).

The general lack of relationship between size and performance points to the interaction of a much wider range of factors playing a more influential role than size alone. There are, however, trade-offs between being small enough to maintain more flexible, inclusive and non-hierarchical decision-making processes, and being of sufficient size to bear financial

risk and having the power to influence the local health economy. In scaling-up, it appears to be important to retain what is good about smaller GP practices, which evidence suggests tends to provide better patient satisfaction. This is likely to be associated with a greater ability to provide relational continuity of care for patients. It should be noted, however, that being small in size does not always equate to greater relational continuity of care, nor does being large necessarily result in poorer continuity. For example, a large number of part-time clinicians can disturb continuity regardless of organisation size. As can be seen in emerging models, such as in the London Borough of Tower Hamlets, smaller networks can exist within larger collaborations, and ways to develop teams within teams or micro-teams to enable better continuity of care have been described (Freeman and Hughes, 2010; Royal College of General Practitioners, 2016a).

Impact

Strengthening the workforce

New forms of large-scale collaborations between GP practices are expected to provide opportunities to improve the workforce, such as through developing joint standardised training and education; peer support and competition; investing in a more diverse workforce and task shifting; staff sharing when needed; and providing career progression opportunities.

Evidence indicates, however, that anticipated improvements in organisational learning through professional exchange do not always materialise simply on the basis of becoming a larger or networked organisation (Ferlie and others, 2010). It takes time for exchanges and learning to happen, time for health professionals to gain confidence that their performance is being fairly assessed, and time for leadership to develop that fosters a culture of learning and improvement in the organisation (Rushmer and others, 2004).

There is currently a shortage of GPs in the NHS and a large proportion of existing GPs report that they are planning to leave the NHS or reduce their hours of clinical work (Dale and others, 2015). The Primary Care Workforce Commission has acknowledged that various forms of larger-scale general practice collaborations could enable the delivery of a wider range of services, offer better opportunities for staff development and training, and allow more effective relationships with commissioners, specialists, hospitals and social services (Roland and others, 2015). However, the Commission, while positive about the potential of such new groups, was cautious with many of its recommendations, largely advocating pilots with evaluations, highlighting that many of these assumptions are untested.

Introducing greater diversity in the general practice workforce may help spread the workload more efficiently and improve care, while maintaining quality of care and being acceptable to patients (Laurant and others, 2005). However, there may be unintended outcomes. For example, task shifting may increase costs rather than reduce them. This can be due to requirements for training, supervision, increased length or number of appointments and referrals, or simply due to meeting previously unmet demand. Cross coverage and greater skill mix may inadvertently also contribute to fragmentation of care and a loss of continuity of care, as illustrated by a study of a 50-practice MPO in England by Baker and colleagues (2014). Crucially, there are major factors that are beyond the power of new GP practice collaborations to address, such as the national shortage of GPs and nurses.

Increasing access and extending services

Extended opening hours, patient overflow hubs, centralised telephone triage, and routine telephone and video-call appointments are some of the proposed mechanisms through which access to core general practice services can be improved and that large-scale general practice is theoretically well placed to deliver. Aggregated data from across the first year of all 20 Prime Minister's GP Access Fund pilot sites show an increase in access routes and availability of appointments, with around one million additional appointments across 1,100 GP practices and 7.5 million patients (MacDonald and SQW, 2015). This was achieved through a wide range of initiatives, such as access to GPs in settings outside their regular practice, telephone access, video consultations, and multidisciplinary team working. Many of these new forms of access were possible due to GP practices working together. However, despite a 15 per cent reduction in minor, self-presenting A&E attendances in the first year of evaluation, there were no measurable improvements in patient satisfaction, or reductions in emergency admissions or GP out-of-hours contacts. Other research in this area offers possible explanations as to why this may be the case.

The ESTEEM cluster randomised trial of telephone triage for managing same-day consultations in general practice found that telephone triage can redistribute the workload, but may increase the overall number of patient contacts. And while it was generally safe, the costs both for GP-led and nurse-led computer-supported triage were similar to usual care, and nurse triage seemed less acceptable to patients. The study also highlighted the complexity associated with introducing triage and found no consistency between GP practices regarding what worked or did not work in order to implement it (Campbell and others, 2015). The evidence on whether the use of telephone triage in primary care – and in fact other forms of access such as community health centres, walk-in clinics, minor injuries units, and urgent care centres – actually reduce A&E attendance is inconclusive (Ismail and others, 2013), and evidence on the advantages and limitations of video consultations is still sparse (Greenhalgh and others, 2016). Importantly, an increase in access may come with a trade-off in terms of reduced relational continuity of care, which is known to have a negative impact on care, in particular in patients with more complex needs (Freeman and Hughes, 2010).

Large-scale general practice collaborations are expected to be able to expand services beyond core general practice, for example by offering specialist services in the community and improving clinical pathways across primary, community and secondary care. Longer term, there are expectations that general practice collaborations will be able to deliver integrated, population-oriented care in partnership with others including secondary care, social care, and the private and/or voluntary sector through joint contracting and the receipt of wide-ranging capitated budgets (NHS England, 2016b). However, evidence suggests that GPs have been most comfortable modifying services on the outskirts of general practice; that is, those that are most relevant to their daily practice. A review of commissioning involving GPs in the English NHS between 1991 and 2010 concluded that GP-led commissioning focused largely on activities felt to be most relevant to general practice, such as prescribing, and developing general practice and community health services. There was little evidence that GPs' involvement in commissioning had improved the delivery of secondary care services or overall outcomes (Miller and others, 2016). This GP-led commissioning evidence suggests a limited ability of GP groups to make meaningful system-wide change, despite working together, without significant additional expertise, financial investment to help bear risks, and cultural change within the organisation. It may also indicate that hospitals have little room for manoeuvre,

irrespective of how general practice services are organised or what commissioners try to do, without major organisational and cultural change.

Increasing access and extending services in and around GP practices are expected to improve patient experience. However, perceptions of the impact of changes to how health services are organised and delivered on quality of care may differ between policy-makers, professionals and patients. Evaluation of the integrated care pilots in England showed that while staff perceived a sense of improvement derived from new ways of working across professional groups, patients did not always share this, in particular where contact with their regular GP or with other well-known and trusted professionals was restricted (RAND Europe and Ernst & Young LLP, 2012). The evaluation of the first year of the Prime Minister's GP Access Fund noted little change in patients' levels of satisfaction, despite the introduction of initiatives which had improved their opportunities for access (MacDonald and SQW, 2015). Misalignment between policy-maker-driven initiatives, such as seven-day access to routine general practice services, and what patients want is potentially illustrated by the Prime Minister's GP Access Fund's evaluation which found that, despite advertising, there was such low demand for Sunday appointments that Sunday access was discontinued in a number of sites. In fact, there may be a fall in patient satisfaction associated with new ways of delivering care that may not meet patients' expectations. For example, a systematic review of the effect of different models of out-of-hours primary medical care found that the increased use of telephone consultations, as opposed to face-to-face consultations, was associated with a fall in patient satisfaction (Leibowitz and others, 2003). Over time, alternative forms of access may gain patient support as familiarity and confidence in them increases, and as the service improves, however unexpected responses by patients to changes in access are not uncommon in the literature. This mismatch has been proposed to come about because health service organisational changes are often driven by professionals' or policy-makers' priorities, rather than those of patients (Guthrie and others, 2010; RAND Europe and Ernst & Young LLP, 2012). This raises the question of the nature of patient and public involvement in service change.

Lay involvement was reported to be a key feature in the design and governance of recent integrated care initiatives in North West London, with the aim of co-designing the programme and encouraging local ownership by patients, service users and carers. However, in the evaluation, individual lay partners expressed frustration at the slow pace of change. This risked their disengagement and providers interviewed felt that there was still insufficient involvement with a wider range of community and voluntary sector stakeholders (Wistow and others, 2015). Despite recognition of the importance of patient and public involvement in shaping the NHS, evaluations of GP-led commissioning and integrated care pilots indicate that, even though often stating good intentions, meaningful patient and public involvement has been variable and often absent in shaping decisions (RAND Europe and Ernst & Young LLP, 2012; Sheaff and others, 2011; J Smith and others, 2000 and 2004; Zachariadis and others, 2013).

Improving quality of care and reducing unwarranted variation

It has been proposed that larger-scale general practice collaborations will be better placed to improve clinical quality and reduce unwarranted variation in care by, for example, investing in technology, strengthening clinical governance, standardising procedures, performance monitoring and benchmarking, peer review and feedback, spreading best practice, and having a population-based approach to services.

Evaluation of the integrated care pilots in England reported that there were reductions in outpatient attendances and elective admissions, although the mechanism through which the latter had been achieved was not clear. However, there were no reductions in emergency admissions, as had been anticipated (RAND Europe and Ernst & Young LLP, 2012). As indicated above, evidence available from evaluation of the first year of the Prime Minister's GP Access Fund noted reductions in minor self-presenting A&E attendances, but no discernible changes in emergency admissions or in out-of-hours GP contacts at programme level (MacDonald and SQW, 2015).

A forthcoming systematic review of clinical networks by Brown and colleagues (2016) concludes that they can be effective vehicles for improving the delivery of health care across a range of disciplines, though there is a lack of rigorous quantitative research on the impact of networks. There was variation in networks' abilities to make meaningful network or system-wide change. This was largely contingent on credible leadership, efficient management, effective communication, a trusting culture, sufficient resourcing and decision-making power in the local health economy (Brown and others, 2016). Emerging GP practice networks in England are expected by policy-makers and GPs themselves to improve care much more widely than the clinical networks studied in this review (for example, cardiac services or care of the elderly), as well as address workforce and financial sustainability issues. Given that more specialised clinical networks often do not bring about desired changes, it will be vital for GP practice networks to set clear and realistic goals, paying sufficient attention to developing organisational management as they work towards these.

Significant expectations have been placed by both policy-makers and the profession on the ability of large-scale general practice in England to make better use of technology to improve access, as well as to improve quality of care through the use of more widely shared electronic records and through greater sharing of performance data. The potential benefits of sharing clinical records, even just among health professionals, has been well described (Mold and others, 2015). However, experience highlights that important information governance issues, incompatible information systems, as well as anxiety of the implications on privacy, result in resistance from both clinicians and patients, which may limit the potential of IT to improve quality of care. Some of these challenges relate to national policies and systems beyond the control of local groups, and the costs of implementing new IT often exceed initial estimates, with a drop in efficiency likely during the initial stages as people learn to use new systems. These challenges have been seen in evaluations of GP-led commissioning, clinical networks, integrated care initiatives and the Prime Minister's GP Access Fund (Erens and others, 2015; Ferlie and others, 2010; MacDonald and SQW, 2015; Sheaff and others, 2015; J Smith and others, 2000; Wistow and others, 2015). Therefore, while large-scale general practice may provide a setting where changes in IT can be rolled out at scale and technology offers significant opportunities for GP groups to help address issues around quality of care in the long-term, NHS experience to date suggests caution about the anticipated speed and cost at which these can be achieved.

Even after adjusting for case-mix, variation in care (for example referral rates and prescribing behaviour) has been well documented between GPs, both within the same GP practice and between different practices (Brookes-Howell and others, 2012; O'Donnell, 2000). The reasons for this are not always clear. So, although the use of, for example, organisation-wide protocols and inter-practice learning or benchmarking, may help reduce unwarranted variation, there are still likely to be challenges related to

differences in clinical behaviour, which may be beyond the power of influence of large-scale general practice to address. Also as highlighted in the evidence above, organisations that emerge voluntarily, without being fully inclusive of all GP practices in a locality, may accentuate unwarranted variation between GP practices which form part of the collaboration and those which do not. Striking a balance between individual autonomy over care delivery and standardisation of practice can be challenging, and flexibility at GP practice level in order to tailor care to meet local population needs is important.

Evidence suggests that the current financial pressures in general practice have resulted in CCGs having reduced running-cost budgets which is making it difficult for them to deliver high-quality commissioning and is making them take prioritisation decisions they feel uncomfortable with, due to the potential impact on quality of care and public support (Robertson and others, 2016). Large-scale general practice collaborations emerging in this same context are likely to encounter these challenges related to a lack of resources impacting on the quality of care that they can provide.

Creating efficiencies and economies of scale

Larger scale collaborations between GP practices are expected to create efficiencies and economies of scale through, for example, sharing common back-office functions, sharing training and staffing, task shifting within the workforce, joint investment in technology, purchasing at scale and better integration of care. Being larger may also increase the power of GPs in their local health economy, through having a stronger collective voice and bargaining power, though this will be altered if there are competing groups of GP practices in the same locality.

Some of the potential issues regarding efficiencies expected to be made through changes to the workforce and technology have already been discussed above. Evidence from GP-led commissioning prior to the establishment of CCGs suggested that if groups of GP practices had some influence over budgets of local hospitals, they could improve the responsiveness of hospital services, resulting in shorter waiting times and quicker feedback to GPs on their patients' hospital care. However, their power to move care out of hospital and truly influence funding flows was not substantiated, with there being limited evidence that this would offer a more cost-effective way to deliver care (Miller and others, 2016; J Smith and others, 2004; Smith and Mays, 2007 and 2012). Since this evidence was collected, groups of GP practices throughout England have been given a large part of the NHS budget to commission secondary care and community services through CCGs, and more recently also commissioning general practice services through 'co-commissioning'. However, research into CCGs has identified significant variation and complexity in functioning forms, as well as around the level of engagement with providers, patients and local authorities (McDermott and others, 2015; Zachariadis and others, 2013). Evidence points to potentially wasted opportunities, doubling of efforts and failure to best utilise GPs' time and expertise across CCGs in England (McDermott and others, 2015).

In New Zealand, the development of Independent Practitioner Associations (privately owned autonomous networks of GPs) in the 1990s was in part driven by ambitions of creating greater efficiencies. Evidence suggests that they were typically able to make 5–10 per cent savings over the first two years on laboratory and pharmaceutical expenditure, which they previously had not been responsible for (Smith and Mays, 2007). In most cases they were allowed to retain these savings. This points to some short-term gains to

be made to areas where GPs previously did not have responsibility over budgets, and possible gains through purchasing at scale (for example vaccines and dispensable supplies). But it also raises the question of how much, if any, cost savings/profits made can GPs keep and if there are any conditions regarding how this is spent. The ability to use cost savings, as well as wider issues of ownership of new organisations – for example, whether it will be possible to buy and sell shares in these organisations, or, in fact, sell the entire organisation in the future – are likely to influence the motivation of GPs to invest time and resources in developing new forms of collaborations and creating efficiencies. This has implications for the sustainability of these models and what general practice may look like in the future in England.

In the US, large independent primary care medical groups have also formed with ambitions similar to those described in England for large-scale general practice collaborations. Case-study reports describe successful quality improvement initiatives through working together and greater use of technology (Emswiler and Nichols, 2009a and 2009b). However, it has been highlighted that these groups are often capital poor in comparison to hospitals and corporate buyers of primary care physician practices. They must, therefore, continually decide whether to remain independent or sell, which may provide capital for development as well as one-off income for the leading physicians (Casalino and others, 2016). As hospital-led organisations in the US have acquired independent primary care physicians, as well as groups of primary care physicians, some are questioning if the anticipated cost savings through the integration of services will be passed on to patients through such a model (Kocher and Sahni, 2011). Indeed, evidence is starting to show that hospital-owned physician organisations may increase some forms of care coordination, but this seems to be associated with higher rather than lower total expenditure (Robinson and Miller, 2014). It has also been found that hospital-owned practices had more preventable admissions than physician-owned primary care practices (Casalino and others, 2014). This points to the potential importance of payment incentives between primary and secondary care being aligned to minimise the risk of supplier induced demand – which both primary and secondary care can generate if incentives are conducive to this.

Economies of scale from larger organisations may not always outweigh dis-economies of scale which can emerge due to new more complex governance and management processes. This has been seen in GP-led commissioning and integrated care initiatives (Bojke and others, 2001; Sheaff and others, 2012; Wistow and others, 2015). There is little evidence that integrated care organisations can reduce use of services or generate cost savings; in some cases the opposite has happened (Nolte and Pitchforth, 2014; RAND Europe and Ernst & Young LLP, 2012). Nolte and Pitchforth (2014) describe the concept of ‘integrated care’ as ‘polymorphous’ in nature and conclude that it should not be assumed that the integration of services is a straightforward intervention which will improve cost effectiveness or save money. Rather, it should be viewed as a range of complex interventions aiming to achieve long-term changes in the way health services are delivered. There are parallels here with large-scale general practice.

4. Discussion

Solid evidence that large-scale general practice collaborations – whether networks, federations, super-partnerships or multi-site practice organisations – can achieve the expectations placed on them is limited. This is inevitable in part, given the fact that the vast majority of them have only been in existence for a few years. Evidence from the wider literature on initiatives with similarities suggests that while the expectations seem plausible regarding larger-scale general practice collaborations being better placed to strengthen the workforce, improve quality of care, extend services and generate efficiencies, it is not a given that these will be achieved simply because of scale, nor that they will automatically result in better clinical outcomes, cost savings, or improved patient experience.

In this review, evidence from the Tower Hamlets Managed General Practice Networks provided the best quantitative evidence available on the potential impact of such a form of large-scale general practice collaboration. However, methodological challenges associated with observational studies, few time-points after the interventions being implemented, contextual differences between Tower Hamlets and the rest of England, and the multiple components of the complex interventions that took place may limit the transferability of findings from this experience. In Tower Hamlets, there was also an additional investment of £10 million per annum into primary care which supported the activities of the networks, and while there is some more detailed analysis of spending available (McKinsey & Company 2014), the overall cost effectiveness of the interventions, including the development of the networks, is unclear.

Two further studies were identified which evaluated interventions in Tower Hamlets and in neighbouring PCTs/CCGs at the same time as the evaluations of interventions delivered through the managed general practice networks. These observational studies did not meet the inclusion criteria as the interventions were not part of the principal remit of the managed networks. However, their findings are worth noting. One paper evaluated the implementation of the NHS health check programme (Robson and others, 2015a). The other evaluated an intervention aiming to reduce unnecessary self-monitoring of blood glucose (SMBG) (Robson and others, 2015b). In the case of the NHS health checks programme, overlap with the objectives of the diabetes and CVD packages of care managed by the networks existed, and it was noted that the managed general practice networks in Tower Hamlets brought about greater improvements in performance compared to neighbouring areas. However, reductions in SMBG were similar between Tower Hamlets and another borough of similar demographic profile which had not had the same level of prior investment in network management, but did receive the same intervention (a locally developed guideline, IT support and peer feedback of performance) to reduce unnecessary SMBG. This result would suggest that the existence of the managed networks had little spill-over effect on the impact of this intervention, which was not a core activity of the networks and their managers. This points to the likely requirement of clearly designed packages of care which aim to maximise the use of the network, rather than expecting, at least in the initial stages of organisational development, that simply working in a network will have positive spill-over effects on unspecified areas of clinical practice.

Contextually, Tower Hamlets potentially distinguishes itself from some of the other types of general practice collaborations emerging in England, such as MPOs, as it is geographically inclusive and mirrors the area covered by the local PCT/CCG, which supported its activities. Also, despite it being in one of the most ethnically diverse and socio-economically deprived boroughs in the country, it was already achieving good scores on QOF indicators prior to the establishment of the networks. The Clinical Effectiveness Group (CEG) led by local academic GPs has been funded by three PCTs in East London for over 20 years before the establishment of the networks in Tower Hamlets. This group had worked in collaboration with GP practices and local PCTs/CCGs in order to provide support and evaluate quality initiatives. This helped 'build relationships in challenging circumstances' (Robson and others, 2014). The ability of the CEG to understand local needs and influence local GP behaviour is thus likely to have played a major role in the success of the programmes. Likewise, evidence from initiatives with parallels which have brought GPs together for other reasons, such as the commissioning of services, point to how the strength of previous relationships, and pre-existing collaborations in local areas will influence how and if new ways of working together are successful (Checkland and others, 2012; Zachariadis and others, 2013). Building on relationships, the general practice network in Tower Hamlets became a Community Interest Company (CIC) in 2015. Through this it has formed a collaborative partnership with the local acute and community health services trust, mental health trust, local council and social care, and has become one of the NHS England Vanguard multispecialty community provider sites (NHS England, 2015a). This illustrates the organisational evolution of this large-scale general practice collaboration that has taken place over more than a decade, and may be replicated elsewhere in England. It highlights the significant level of prior investment and experience of collaboration needed to reach this stage of organisational maturity and, importantly, provide evidence of its impact.

The theory that large-scale general practice collaborations may provide a better environment through which to do things such as standardise care, diversify and strengthen the workforce, increase peer support/pressure for change, invest in technology and improve access is supported both by the evidence from Tower Hamlets managed networks and Baker and colleagues' (2014) study of an MPO in England. Yet there is still insufficient evidence to understand to what degree characteristics of large-scale general practice provider models, such as their size, governance, ownership, or other internal characteristics, are making the difference. Larger-scale organisations may offer opportunities for portfolio careers and for some GPs and nurses to spend more of their time on management and leadership roles, while freeing up others. There are, however, indications in the literature of potential unintended consequences to continuity of care, public perception and workforce motivation with a corporate MPO. A shift towards a largely salaried GP workforce has implications for the future culture of general practice, including needing to re-focus attention on how to motivate GPs beyond payment mechanisms.

Scaled up general practice is expected to deliver a more financially sustainable model of general practice than the traditional 'corner-shop' model. However, achieving and demonstrating cost savings are perhaps the most ambitious of the expectations placed on general practices in the current financial environment. The pressures GPs are facing are significant, and using more clinical time to address organisational issues as well as meeting pre-existing commitments (for example, CCG participation, QOF targets, Care Quality Commission assessments, patient participation groups, and teaching and supervision) is

likely to be challenging. The evidence from GP-led commissioning and integrated care initiatives suggests that achieving cost savings through organisational change may not be as easy as theory suggests. Aside from whether they are achievable, measuring overall cost-effectiveness is often hard to do, and particularly if organisations operate as businesses and sharing of information is seen as commercially sensitive.

The literature does not point towards consistent or marked improvements in patient experience as a result of scaling up. While patients may value greater coordination of care, evidence indicates that changes in routes of access, even if they increase opportunities to access care, may not always be well received by all patients. It emphasises the importance of providing continuity of care for those who most need it, and warns of the risks of professionally driven changes in how care is delivered. There are examples throughout the integrated care initiatives, clinical networks and GP-led commissioning of difficulties in meaningfully involving patients and the public in decision-making.

The number of initiatives over the last 20 years that have aimed to ‘transform’ various parts of the English NHS is significant. The overwhelming pace of reforms in the NHS has been suggested to contribute to low morale and to hinder innovation in general practice (Bojke and others, 2001; Thomas and others, 2005). Evaluation of emerging CCGs in 2012 concluded that GPs and managers found the number of changes taking place in the NHS disruptive and confusing, and that many GPs were struggling to understand what membership of the group would mean in practice (Checkland and others, 2012). The benefits of NHS re-organisations have not always outweighed the costs. Mergers, in particular, whether in secondary or primary care, have often failed to deliver the anticipated benefits on cost savings and have resulted in important unintended consequences, including negative effects on the delivery of services because of a focus away from these during the merger process (Bojke and others, 2001; Fulop and others, 2002; Greaves and others, 2012; J Smith and others, 2004). Credible and competent leaders are repeatedly highlighted in the literature as essential to help overcoming some of these challenges and to creating environments where organisational change can take place (Baeza and others, 2008; Checkland and others, 2012; Guthrie and others, 2010; Robertson and others, 2016; Thorlby and others, 2011). Goodwin and colleagues (2004) described the development of a successful network as ‘craftsmanship’ and the literature emphasises the fundamental importance of clinical-managerial hybrid leaders with good ‘soft’ skills. While leadership programmes have become increasingly common in the NHS in recent years, historically the primary care workforce has been relatively unengaged in opportunities for leadership training (Roland and others, 2015). It is therefore pressing that this is addressed.

The emergence of large-scale general practice collaborations in England is, in most part, the result of a ‘bottom-up’ movement, but increasingly appears to be being driven ‘top-down’ by official policies, financial and demand pressures in practices, and new levers to work at scale such as the upcoming NHS England multispecialty community provider contract (NHS England, 2016b). If the pace of NHS re-organisations to date continues, there is a risk that fully fledged, scaled-up general practice collaborations will not evolve in time to deliver on expectations before the NHS organisational landscape changes again. Experience from other countries, including Divisions of General Practice in Australia or integrated managed care organisations in the US such as Kaiser Permanente and Group Health, suggests that to bring together separate primary care providers in order to collaborate effectively with one another and/or with secondary care takes decades.

Even then they do not always deliver on what may seem intuitive assumptions about what working at scale and in an integrated manner should achieve.

An increasingly heterogeneous landscape for the provision of general practice and primary care has already been described over the past 15 years (Sheaff, 2013). As seen with dentistry in England or other non-health, non-public professional services such as accountancy or legal services, a mixed economy from the single-hander or small partnerships to the large corporate chain can exist. However, the impact of this in general practice, in particular on patient experience, continuity of care, equity of access and in minimising unwarranted variations in quality of care, is unclear.

If new forms of scaled-up general practice provider collaborations are to become an integral part of the NHS in England, a careful balance needs to be struck between providing sufficient guidance to minimise wasted efforts and creating an environment which harnesses GPs' voluntary participation. Significant GP time and resources to develop relationships and leadership skills are likely to be needed. The further use of clinical time and energy on non-clinical activities when there is a national shortage of GPs, growing responsibilities for CCGs, and notable financial constraints, is unfortunate to say the least, but also makes finding better ways to deliver care more pressing. However, the specific factors and contexts which produce benefits from scaling up general practice, and those which do not, remain largely unknown. This points to the need for more research in these areas and cautious implementation of any innovations alongside ongoing evaluation. Ultimately, which model(s) of large-scale general practice will predominate in England will depend on the funding mechanisms and contractual opportunities made available by NHS England and CCGs; how conflicts of interest are managed between commissioners and these new large-scale provider groups; and what balance between public and private interests will be tolerable to all stakeholders.

Key messages

The literature available to help understand the likelihood that the new forms of general practice collaborations in England will achieve the increasingly ambitious objectives set for them is limited and not conclusive. It is not straightforward to generalise. However, it is possible to identify a number of recurrent themes, as summarised below.

- Voluntary general practice collaborations will emerge for different reasons, subject to the local context. By their nature, they are heterogeneous and may not always be inclusive. This may result in inequities and complexity in organisational form.
- If general practice collaborations are mandated, this may make their activities more legitimate, provide an opportunity for new relationships and may result in more inclusive collaborations. However, this risks stifling innovation and disengaging clinicians.
- Pre-existing relationships, (lack of) trust and (non-) alignment of values can make or break the development of a new collaboration. Significant time and effort are needed to establish and strengthen local relationships.
- Having clear and realistic goals is essential to guide direction and focus efforts for new inter-practice collaborations. These need to align with those of the clinicians involved in order to engage them.

- Ongoing patient and public involvement is hard to do well. Sufficient resources and careful planning are needed to do this meaningfully. Not doing so may result in changes to services that will not meet local needs and expectations.
- Tensions can emerge as a result of conflicting priorities – some internally focused (for example improving the core activities of general practice) and others externally focused (for example integration with secondary care). Whilst these can co-exist, they may generate organisational dysfunction.
- Credible and competent leaders, particularly clinical-managerial hybrids, who are able to engage members within and outside the group are key. It is important to ensure support and succession planning for these pivotal roles.
- Integration of different organisations takes time, often decades, to deliver benefits. These benefits are often hard to measure.
- Size does not always matter. There are, however, likely to be trade-offs in terms of different aspects of organisational durability and performance between larger and smaller-scale collaborations, as well as between voluntary and mandated formation; networks and single organisations; and different forms of ownership.
- Not all efforts to collaborate will be fruitful and not all stakeholders will benefit equally from efforts to collaborate. Therefore, careful consideration should be given to the opportunity costs involved in their development and compromises that will need to be made.

Several of these themes align with Best and colleagues' (2012) conclusions from a realist review of large-system transformation in health care which identified five 'simple rules' that were likely to enhance success and can help guide new general practice collaborations: blend designated leadership with distributed leadership; establish feedback loops; attend to history; engage physicians; and include patients and families (Best and others, 2012).

Strengths and limitations of this literature review

There is a lack of rigorous research on the impacts of large-scale general practice collaborations in England, which has limited this review. It is clear that further research is needed, in particular to understand the long-term impact of scaled-up general practice on the workforce, patient experience, clinical outcomes and costs.

Though the evidence is limited, this review is the result of a comprehensive search of a complex evidence base. Searching of the published academic literature was undertaken with an expert librarian examining the results of multiple versions of keyword searches. Large amounts of grey literature were identified through extensive 'snowball' searching and seeking guidance from experts, many of whom were the authors of seminal research on GP-led commissioning and integrated care initiative evaluations. This review has attempted to extract useful learning from analysis of similar collaborative initiatives in England and elsewhere, and draw from other sources of relevant research. It is therefore as comprehensive a literature review on the topic of large-scale general practice in England as is feasible at present. It provides a base to which further evidence could be added, as more empirical research is undertaken on the topic, such as the Nuffield Trust's research report *Is Bigger Better? Lessons for Large-Scale General Practice* (Rosen and others, 2016). This review cannot, however, be guaranteed to be exhaustive since the terminology

used to describe different forms of general practice collaborations is so varied and the collaborations that are emerging are heterogeneous, with many being in their early stages. Therefore, it is possible that some evidence, in particular grey literature, may not have been picked up by the methods used for this review.

Drawing on the literature from a range of other similar initiatives has strengths, as mentioned above, but also limitations. For example, the majority of clinical networks which have been studied have been specialised (for example focusing on elderly care or cardiac services) and, as with the integrated care pilots, often also depended on the participation of secondary care services, which may be less relevant to many of the principal activities of large-scale general practice collaborations. Much of the evidence on collaboration between GP practices in the past has focused on GPs' commissioning activities. By contrast, the majority of the currently emergent large-scale general practice collaborations, although principally focused on the provision of general practice and related services, are forming with a much more diffuse and ambitious set of objectives, and, until now, have not been overtly driven by government policy. Above all, the majority of the literature that this review has been able to draw on is observational, often without comparison organisations or populations, and in a context of frequent policy changes. This limits the strength and transferability of findings.

It is important to also highlight that most of the English initiatives found in the literature received special status. They often received national or regional recognition and additional funding alongside access to decision-makers and experts that would routinely not be available. The Prime Minister's GP Access Fund, integrated care pioneers and now Vanguard initiatives have supported the development of some new general practice collaborations to date, and have in fact been catalysts to the formation of new legal entities to take on new funding contracts. While GP practices can continue to form new large-scale organisations, the support provided to the early adopters is unlikely to be available to all practices in the future. This has implications for the formation and evolution of new forms of general practice collaborations nationally.

The literature in general, and thus this review, is notably biased towards English-speaking countries, but there are further opportunities to learn from other countries which have similarities to general practice in the UK (Kringos and other, 2015; NHS European Office, 2016; J Smith and others, 2013). Using experience from other settings, however, comes with a warning. The transferability of evidence from other countries and sectors is limited due to marked contextual and cultural differences. These include important differences in the history of the health system, how it is funded, to what degree choice and competition are important features, what role primary care and general practice play, what financial and non-financial incentives exist for GPs, as well as important differences in culture, values and expectations. International experiences therefore should be applied with caution, and not automatically assumed to be transferable.

Finally, it should be emphasised that the lack of solid evidence does not suggest that large-scale general practice collaborations cannot achieve expectations placed on them; arguably it is more illustrative of the challenges of proving the benefits, the significant number of contextual variables that may influence their success or otherwise, and the fact that many of these collaborations are still in their early stages. Applying what can be considered as rigorous research methods, such a randomised controlled trial, in a dynamic policy environment and across different local contexts is extremely unlikely to prove feasible. While there are gains to be made by making the period of observation longer (that is, more than the 1–3 years, which has been the case with most of the evaluations of

pilots discussed in this paper), observational and quasi-experimental studies will always be at risk from unmeasured confounding variables, and regression to the mean. Care should be taken when interpreting the results of such studies and efforts made to identify confounders as best as possible, as studies may erroneously generate both positive and negative results. Only more recently are research methods such as realist evaluation and realist synthesis becoming mainstream, aiming to better capture what forms of service re-organisations work for whom, in what contexts and why (Greenhalgh and others, 2009; Lamont and others, 2016; Wong and others, 2014).

It is important to be aware of these methodological challenges as further research is undertaken in this field. Efforts to share learning through, for example, the Royal College of General Practitioners' Supporting Federations programme, and to evaluate new forms of general practice collaboration are evident, including the evaluation of the second wave of the Prime Minister's GP Access Fund, the evaluation of Vanguard sites underway and of the upcoming evaluation of the NAPC/NHS Confederation-led Primary Care Home rapid test sites. The Nuffield Trust research report *Is Bigger Better? Lessons for Large-Scale General Practice* is the first piece of research that has evaluated different types of large-scale general practice collaborations in England using mixed methods (Rosen and others, 2016).

5. Conclusion

We can broadly see four models of large-scale general practice provider collaborations emerging in England: networks, federations, super-partnerships and multi-site practice organisations. Depending on their functions and the goals of the GPs and practices participating in them, each may adopt one or more different legal forms and governance structures. Currently, the majority of collaborations are in the form of networks and federations.

Expectations of what these groups may be able to achieve are ambitious and include harnessing opportunities to strengthen the workforce, improve quality of care, extend services and create efficiencies. There is, however, little good quality research into these new forms of collaboration to confirm or refute whether these expectations are realistic. What evidence exists shows promising results for managed general practice networks acting on specifically targeted areas of care for improvement which received significant financial investment and management support. Research evidence from a large multi-site practice organisation in England suggests that it was well placed to improve safety and quality processes, but pointed to unintended consequences affecting workforce turnover and continuity of care. The views of patients regarding the impact of new forms of large-scale general practice collaborations are largely unknown. Similarly the overall impact on costs remains unclear.

At present, we are reliant on evidence from other initiatives which have parallels and that offer potential insights into the development and anticipated impacts of large-scale general practice collaborations in England. This evidence points to trade-offs in terms of sustainability and performance between mandated or voluntary forms of collaboration, networks and single organisations, small and large collaborations, and between different types of ownership. The quality of clinical leadership and pre-existing relationships within the local health economy can make or break new organisations. Importantly, the time and resources to achieve the anticipated expectations are very likely to have been underestimated, and are often difficult to measure. Achieving meaningful patient and public involvement in the planning and implementation of changes to health services has proven to be recurrently challenging. Overall, large-scale re-organisations to how health services are delivered have not always delivered their anticipated benefits.

National and international experience underlines that the engagement of GPs is essential to increase the likelihood of large-scale general practice collaborations succeeding. For this, GPs must feel they have sufficient autonomy and influence over the new groups. Yet such flexibility may result in failed attempts, duplicated efforts and inequity in participation. How local and national contracting arrangements evolve and how emerging general practice groups respond to these may represent a tipping point for general practice away from the small partnership model to that of large-scale organisations. This may have a long lasting effect on the make-up of the general practice workforce, the contractual arrangements under which practices work for the NHS and the overall culture of general practice. The full implications of this are not yet clear.

References

- Addicott R and Ham C (2014) *Commissioning and funding general practice: making the case for family care networks*. The King's Fund.
- Baeza JI, Fitzgerald L and McGivern G (2008) 'Change capacity: the route to service improvement in primary care', *Quality in Primary Care* 16(6), 401–7.
- Baker R, Willars J, McNicol S, Dixon-Woods M and McKee L (2013) 'Primary care quality and safety systems in the English National Health Service: a case study of a new type of primary care provider', *Journal of Health Services Research and Policy* 19(1), 34–41.
- Barr F (2016) 'How providing general practice at scale can benefit patients'. www.medeconomics.co.uk/article/1382460. Accessed 9 August 2016.
- Best A, Greenhalgh T, Lewis S, Saul JE, Carroll S and Bitz J (2012) 'Large-system transformation in health care: a realist review', *Milbank Quarterly* 90(3), 421–56.
- Bojke C, Gravelle H and Wilkin D (2001) 'Is bigger better for primary care groups and trusts?', *BMJ*, 322(7286), 599–602.
- Booth M, Hill G, Moore MJ, Dalla D, Moore MG and Messenger A (2016) 'The new Australian primary health networks: how will they integrate public health and primary care?', *Public Health Research and Practice* 26(1), e2611603.
- Braithwaite J, Travaglia JF and Corbett A (2011) 'Can questions of the privatization and corporatization, and the autonomy and accountability of public hospitals, ever be resolved?' *Health Care Analysis* 19(2), 133–53.
- British Medical Association (2013) 'Collaborative GP alliances and federations: guidance for GPs'.
- British Medical Association (2015a) 'Collaborative GP networks: a step-by-step guide to setting up a GP network'. www.bma.org.uk/support-at-work/gp-practices/gp-networks/setting-up-a-gp-network. Accessed 9 August 2016.
- British Medical Association (2015b) 'Collaborative GP networks: guidance for GPs on basic legal structures'. www.bma.org.uk/support-at-work/gp-practices/gp-networks/basic-legal-structures. Accessed 9 August 2016.
- British Medical Association (2015c) '2014 UK Medical Workforce Briefing'.
- British Medical Association Northern Ireland (2016) 'General practice in Northern Ireland: the case for change'. www.bma.org.uk/collective-voice/committees/general-practitioners-committee/gpc-northern-ireland. Accessed 9 August 2016.
- Brookes-Howell L, Hood K, Cooper L, Little P, Verheij T, Coenen S and others (2012) 'Understanding variation in primary medical care: a nine-country qualitative study of clinicians' accounts of the non-clinical factors that shape antibiotic prescribing decisions for lower respiratory tract infection', *BMJ Open* 2(4), e000796.
- Brown B, Patel C, McInnes E, Mays N, Young J and Haines M (2016) 'The effectiveness of clinical networks in improving quality of care and patient outcomes: a systematic review of quantitative and qualitative studies', *BioMed Central Health Services Research*, forthcoming.
- Campbell J, Fletcher E, Britten N, Green C, Holt T, Lattimer V and others (2015) 'The clinical effectiveness and cost-effectiveness of telephone triage for managing same-day consultation requests in general practice: a cluster randomised controlled trial comparing general practitioner-led and nurse-led management systems with usual care (the ESTEEM Trial)'. *Health Technology Assessment*, National Institute for Health Research. 2015 Feb;19(13):1-212, vii-viii. doi: 10.3310/hta19130.
- Care Quality Commission (2015) 'Registration requirements for GP practice collaborating to provide a greater range of services (federations)'. https://www.cqc.org.uk/sites/default/files/20151104_GP_federations_registration_advice_revised_20160425.pdf. Accessed 9 August 2016.
- Carne A (2013) 'Summary data report of the 2011–2012 annual survey of divisions of general practice. Adelaide: primary health care research and information service, discipline of general practice, Flinders University, and Australian government Department of Health and Ageing'. www.phcris.org.au/products/asd/results/11_12.php. Accessed 9 August 2016.

- Casalino LP, Chen MA, Staub CT, Press MJ, Mendelsohn JL, Lynch JT and Miranda Y (2016) 'Large independent primary care medical groups', *Annals of Family Medicine* 14(1), 16–25.
- Casalino LP, Pesko MF, Ryan AM, Mendelsohn JL, Copeland KR, Ramsay PP and others (2014) 'Small primary care physician practices have low rates of preventable hospital admissions', *Health Affairs* 33(9), 1680–8.
- Checkland K, Allen P, Coleman A, Segar J, McDermott I, Harrison S and others (2013) 'Accountable to whom, for what? An exploration of the early development of clinical commissioning groups in the English NHS', *BMJ Open* 3(12), e003769.
- Checkland K, Coleman A, Segar J, McDermott I, Miller R, Wallace A and others (2012) *Exploring the early workings of emerging clinical commissioning groups: final report*. Policy Research Unit in Commissioning and the Healthcare System.
- Cockman P, Dawson L, Mathur R and Hull S (2011) 'Improving MMR vaccination rates: herd immunity is a realistic goal', *BMJ* 343, d5703.
- Crump H and Edwards N (2014) *Provider chains: lessons from other sectors*. Nuffield Trust.
- Curry N and Kumpunen S (2015) *Network, federation, super-partnership or multi-practice organisation? A guide to GP provider organisation terminology*. Nuffield Trust.
- Dale J, Potter R, Owen K, Parsons N, Realpe A and Leach J (2015) 'Retaining the general practitioner workforce in England: what matters to GPs? A cross-sectional study', *BioMed Central Family Practice* 16(1), 140.
- Department of Health (2015) 'Prime Minister pledges to deliver 7-day GP services by 2020'. www.gov.uk/government/news/prime-minister-pledges-to-deliver-7-day-gp-services-by-2020. Accessed 9 August 2016.
- Emswiler T and Nichols LM (2009a) *Baylor Health Care System: high-performance integrated health care*. Commonwealth Fund.
- Emswiler T and Nichols LM (2009b) *Hill Physicians Medical Group: independent physicians working to improve quality and reduce costs*. Commonwealth Fund.
- Erens B, Wistow G, Mounier-Jack S, Douglas N, Jones L, Manacorda T and Mays N (2015) *Early evaluation of the integrated care and support pioneers programme: final report*. Policy Innovation Research Unit.
- Evans R (2016) 'Case study: the benefits of being a larger practice.' www.medeconomics.co.uk/article/1400910. Accessed 9 August 2016.
- Ferlie E, FitzGerald L, McGivern G, Dopson S and Exworthy M (2010) *Networks in health care: a comparative study of their management, impact and performance*. National Institute for Health Research Service Delivery and Organisation Programme.
- Freeman G and Hughes J (2010) *Continuity of care and the patient experience*. The King's Fund.
- Fulop N, Protosaltis G, Hutchings A, King A, Allen P, Normand C and Walters R (2002) 'Process and impact of mergers of NHS trusts: multicentre case study and management cost analysis', *BMJ* 325(7358), 246.
- Gauld R and Mays N (2006) 'Are New Zealand's new primary health organisations fit for purpose?', *BMJ* 333(7580), 1216–8.
- Gerada C (2009) *Changing partnerships*. Discussion Paper, Royal College of General Practitioners.
- Goodwin N, Dickson A, Poole T and Raleigh V (2011) *Improving the quality of care in general practice – report of an independent inquiry commissioned by The King's Fund*. The King's Fund.
- Goodwin N, Perri 6, Peck E, Freeman T and Posaner R (2004) *Managing across diverse networks of care: lessons from other sectors*. National Coordinating Centre for the Service Delivery and Organisation.
- Greaves F, Laverty AA, Pape U, Ratneswaren A, Majeed A and Millett C (2015) 'Performance of new alternative providers of primary care services in England: an observational study', *Journal of the Royal Society of Medicine* 108(5), 171–83.

- Greaves F, Millett C, Pape UJ, Soljak M and Majeed A (2012) 'Association between primary care organisation population size and quality of commissioning in England: an observational study', *British Journal of General Practice* 62(594), e46–54.
- Greenhalgh T, Humphrey C, Hughes J, Macfarlane F, Butler C and Pawson RAY (2009) 'How do you modernize a health service? A realist evaluation of whole-scale transformation in London', *Milbank Quarterly* 87(2), 391–416.
- Greenhalgh T and Peacock R (2005) 'Effectiveness and efficiency of search methods in systematic reviews of complex evidence: audit of primary sources', *BMJ* 331 (7524), 1064–5.
- Greenhalgh T, Vijayaraghavan S, Wherton J, Shaw S, Byrne E, Campbell-Richards D and others (2016). 'Virtual online consultations: advantages and limitations (VOCAL) study', *BMJ Open* 6(1), e009388.
- Guthrie B, Davies H, Greig G, Rushmer R, Walter I, Duguid A and others (2010) *Delivering health care through managed clinical networks (MCNs): lessons from the North*. National Institute for Health Research, Service Delivery and Organisation Programme.
- Ham CJ (2010) 'GP budget holding: lessons from across the pond and from the NHS'. University of Birmingham, Health Services Management Centre, Policy Paper 7.
- HealthForceOntario (2015) *Family practice models in Ontario, Canada*. Ontario Government. www.healthforceontario.ca/en/Home/Physicians/Training_%7C_Practising_in_Ontario/Physician_Roles/Family_Practice_Models. Accessed 9 August 2016.
- Hill RA and Dunbar RIM (2003) 'Social network size in humans', *Human Nature* 14(1), 53–72.
- Horvath J (2014) *Review of Medicare Locals: report to the Minister for Health and Minister for Sport*. Australian Government Department of Health. www.health.gov.au/internet/main/publishing.nsf/Content/review-medicare-locals-final-report. Accessed 9 August 2016.
- Hull S, Chowdhury TA, Mathur R and Robson J (2013) 'Improving outcomes for patients with type 2 diabetes using general practice networks: a quality improvement project in East London', *BMJ Quality and Safety* 23(2), 171–6.
- Hull S, Mathur R, Lloyd-Owen S, Round T and Robson J (2014) 'Improving outcomes for people with COPD by developing networks of general practices: evaluation of a quality improvement project in East London', *Primary Care Respiratory Medicine* 24, 14082.
- Huntley A, Lasserson D, Wye L, Morris R, Checkland K, England H and others (2014) 'Which features of primary care affect unscheduled secondary care use? A systematic review', *BMJ Open* 4(5), e004746.
- Hutchison B, Levesque J-F, Strumpf E and Coyle N (2011) 'Primary health care in Canada: systems in motion', *Milbank Quarterly* 89(2), 256–88.
- Imison C, Williams S, Smith J and Dingwall C (2010) *Toolkit to support the development of primary care federations*. Royal College of General Practitioners, The King's Fund, Nuffield Trust and Hempsons Solicitors.
- Ismail SA, Gibbons DC and Gnani S (2013) 'Reducing inappropriate accident and emergency department attendances', *British Journal of General Practice* 63(617), e813–20.
- Javanparast S, Baum F, Barton E, Freeman T, Lawless A, Fuller J and others (2015) 'Medicare Local – local health network partnerships in South Australia: lessons for primary health networks', *The Medical Journal of Australia* 203(5), 219.
- Kelly E and Stoye G (2014) *Does GP practice size matter? GP practice size and the quality of primary care*. Institute for Fiscal Studies.
- Kocher R and Sahni NR (2011) 'Hospitals' race to employ physicians – the logic behind a money-losing proposition', *New England Journal of Medicine* 364(19), 1790–3.
- Kringos DS, Boerma WGW, Hutchinson A and Saltman RB (2015) *Building primary care in a changing Europe*. World Health Organization, European Observatory on Health Systems and Policies.

- Kumpunen S, Curry N, Edwards N, Holmes M, Price H and Ballard T (2015) *Collaboration in general practice: surveys of GPs and CCGs*. Nuffield Trust.
- Lamont T, Barber N, de Pury J, Fulop N, Garfield-Birkbeck S, Lilford R and others (2016) 'New approaches to evaluating complex health and care systems', *BMJ* 352, i154.
- Laurant M, Reeves D, Hermens R, Braspenning J, Grol R, Sibbald B and others (2005) 'Substitution of doctors by nurses in primary care', *Cochrane Database Systematic Reviews* 2, CD001271.
- Leibowitz R, Day S and Dunt D (2003) 'A systematic review of the effect of different models of after-hours primary medical care services on clinical outcome, medical workload, and patient and GP satisfaction'. *Family Practice* 20(3), 311–7.
- Ling Ng CW and Ping Ng K (2013) 'Does practice size matter? Review of effects on quality of care in primary care', *British Journal of General Practice* 63(614), e604–10.
- MacDonald M and SQW Ltd (2015) 'Prime Minister's Challenge Fund: improving access to general practice'. Independent evaluation of the first wave of the Prime Minister's Challenge Fund. www.england.nhs.uk/ourwork/futurenhs/pm-ext-access/wave-one/wave-one-eval/. Accessed 9 August 2016.
- Mathers N (2012) 'From cottage industry to post-industrial care? The RCGP response to the King's Fund report on the quality of care in general practice', *British Journal of General Practice* 62(599), 326–8.
- McDermott I, Checkland K, Coleman A, Osipovič D, Petsoulas C and Perkins N (2016) 'Engaging GPs in commissioning: realist evaluation of the early experiences of clinical commissioning groups in the English NHS', *Journal of Health Services Research and Policy*, forthcoming.
- McDermott I, Coleman A, Perkins N, Osipovič D, Petsoulas C and Checkland K (2015) *Exploring the GP 'added value' in commissioning: what works, in what circumstance, and how? Final report*. Policy Research Unit in Commissioning and the Healthcare System.
- McDonald R, Cheraghi-Sohi S, Tickle M, Roland M, Doran T, Campbell S and others (2010) *The impact of incentives on the behaviour and performance of primary care professionals*. National Institute for Health Research, Service Delivery and Organisation Programme.
- McKinsey & Company (2014) 'Transforming primary care in Tower Hamlets: A story of collaborative success as a precursor to broader integration'.
- Miller R, Peckham S, Coleman A, McDermott I, Harrison S and Checkland K (2016) 'What happens when GPs engage in commissioning? Two decades of experience in the English NHS', *Journal of Health Services Research and Policy* 21(2), 126–33.
- Mold F, de Lusignan S, Sheikh A, Majeed A, Wyatt JC, Quinn T and others (2015) 'Patients' online access to their electronic health records and linked online services: a systematic review in primary care', *British Journal of General Practice* 65(632), e141–51.
- National Association of Primary Care (2015) 'The primary care home'. www.napc.co.uk/primary-care-home. Accessed 9 August 2016.
- NHS England (2014) *Five Year Forward View*. www.england.nhs.uk/ourwork/futurenhs/nhs-five-year-forward-view-web-version/5yfv-ch3/. Accessed 9 August 2016.
- NHS England (2015a) 'New care models – vanguard sites: multispecialty community provider vanguards'. www.england.nhs.uk/ourwork/futurenhs/new-care-models/community-sites/. Accessed 9 August 2016.
- NHS England (2015b) 'NHS England: new care models – vanguard sites'. www.england.nhs.uk/ourwork/futurenhs/new-care-models/. Accessed 9 August 2016.
- NHS England (2016a) *General Practice Forward View*. www.england.nhs.uk/ourwork/gpfov/. Accessed 9 August 2016.
- NHS England (2016b) 'The multispecialty community provider (MCP) emerging care model and contract framework.' www.england.nhs.uk/wp-content/uploads/2016/07/mcp-care-model-frmwrk.pdf. Accessed 9 August 2016.

- NHS European Office (2016) 'EU models of care – NHS Confederation'. www.nhsconfed.org/regions-and-eu/nhs-european-office/eu-knowledge-sharing/eu-models-of-care. Accessed 9 August 2016.
- NHS Wales (2016) 'Clusters'. www.gpone.wales.nhs.uk/clusters. Accessed 9 August 2016.
- Nolte E and Pitchforth E (2014) *What is the evidence on the economic impacts of integrated care?* European Observatory on Health Systems and Policies.
- O'Donnell CA (2000) 'Variation in GP referral rates: what can we learn from the literature?', *Family Practice* 17(6), 462–71.
- Primary Health Care Research and Information Service (2016) 'Getting started guide: primary health networks'. www.phcris.org.au/guides/intro_phns.php. Accessed 9 August 2016.
- Provan KG and Kenis P (2008) 'Modes of network governance: structure, management, and effectiveness', *Journal of Public Administration Research and Theory* 18(2), 229–52.
- Public Health Wales NHS Trust (2013) GP cluster profiles. NHS Wales. www.wales.nhs.uk/sitesplus/922/page/67714. Accessed 9 August 2016.
- Ramesh R (2012) 'Healthcare sell-off makes GPs millions'. *The Guardian*. www.theguardian.com/society/2012/nov/09/healthcare-sell-off-gps. Accessed 9 August 2016.
- RAND Europe and Ernst and Young LLP (2012) *National evaluation of the Department of Health's integrated care pilots*. Final Report. Prepared for the Department of Health. www.gov.uk/government/publications/national-evaluation-of-department-of-healths-integrated-care-pilots. Accessed 9 August 2016.
- Robertson R, Holder H, Ross S, Naylor C and Machaqueiro S (2016) *Clinical commissioning, GPs in charge?* The King's Fund and Nuffield Trust.
- Robinson JC and Miller K (2014) 'Total expenditures per patient in hospital-owned and physician-owned physician organizations in California', *Journal of the American Medical Association* 312(16), 1663–9.
- Robson J, Dostal I, Madurasinghe V, Sheikh A, Hull S, Boomla K and others (2015a) 'The NHS Health Check programme: implementation in East London 2009–2011', *BMJ Open* 5(4), e007578.
- Robson J, Hull S, Mathur R and Boomla K (2014) 'Improving cardiovascular disease using managed networks in general practice: an observational study in inner London', *British Journal of General Practice* 64(622), e268–74.
- Robson J, Smithers H, Chowdhury T, Bennett-Richards P, Keene D, Dostal I and others (2015b) 'Reduction in self-monitoring of blood glucose in type 2 diabetes: an observational controlled study in East London', *British Journal of General Practice* 65(633), e256–63.
- Roland M, Barber N, Imison C, Howe A, Rubin G and Storey K (2015) *Primary care workforce commission – the future of primary care: creating teams for tomorrow*. Health Education England.
- Rosen R, Kumpunen S, Curry N, Davies A, Pettigrew L and Kossarova L (2016) *Is bigger better? Lessons for large-scale general practice*. Nuffield Trust.
- Rosen R and Parker H (2013). *New models of primary care: practical lessons from early implementers*. Nuffield Trust.
- Royal College of General Practitioners (2007) *The future direction of general practice – a roadmap*. www.rcgp.org.uk/policy/rcgp-policy-areas/future-direction-of-general-practice-a-roadmap.aspx. Accessed 9 August 2016.
- Royal College of General Practitioners (2008) 'Primary care federations – putting patients first'. www.rcgp.org.uk/policy/rcgp-policy-areas/primary-care-federations-feedback-from-the-consultation.aspx. Accessed 9 August 2016.
- Royal College of General Practitioners (2013) 'The 2022 GP: a vision for general practice in the future NHS.' www.rcgp.org.uk/policy/rcgp-policy-areas/general-practice-2022.aspx. Accessed 9 August 2016.
- Royal College of General Practitioners (2016a) 'Continuity of care in modern day general practice'.

- Royal College of General Practitioners (2016b) 'July clinical news articles – the working at scale edition'. www.rcgp.org.uk/clinical-and-research/clinical-news.aspx. Accessed 9 August 2016.
- Royal College of General Practitioners (2016c) 'Can working at scale deliver for patients?'. *GPFrontline*, July, 4.
- Royal College of General Practitioners Scotland (2015) 'Promoting general practice: a manifesto for the 2016 Scottish Parliamentary Election'.
- Rushmer R, Kelly D, Lough M, Wilkinson JE and Davies HTO (2004) 'Introducing the learning practice – III. Leadership, empowerment, protected time and reflective practice as core contextual conditions', *Journal of Evaluation in Clinical Practice* 10(3), 399–405.
- Salisbury C (2008) 'The involvement of private companies in NHS general practice', *BMJ* 336, 400.
- Scottish Government (2016) 'Major GP test pilot launched in Inverclyde'. <http://news.scotland.gov.uk/News/Major-GP-test-pilot-launched-in-Inverclyde-2198.aspx>. Accessed 9 August 2016.
- Sheaff R (2013) 'Plural provision of primary medical care in England, 2002–2012', *Journal of Health Services Research and Policy* 18 (Suppl 2): 20–8.
- Sheaff R, Child S, Schofield J, Pickard S and Mannion R (2012) *Understanding professional partnerships and non-hierarchical organisations*. National Institute for Health Research Service Delivery and Organisation Programme.
- Sheaff R, Halliday J and Øvretveit J (2015) 'Integration and continuity of primary care: polyclinics and alternatives: a patient-centred analysis of how organisation constrains care co-ordination', *Health Services and Delivery Research* 3, 35.
- Sheaff R, Schofield J, Charles N, Benson L, Mannion R and Reeves D (2011) *The management and effectiveness of professional and clinical networks*. National Institute for Health Research Service Delivery and Organisation Programme.
- Sheaff R, Schofield J, Mannion R, Dowling B, Marshall M and McNally R (2003) *Organisational factors and performance: a review of the literature*. National Coordinating Centre for the Service Delivery and Organisation.
- Silverman R (2012) 'GPs cash in on sale of out-of-hours provider'. *Telegraph*. www.telegraph.co.uk/news/health/news/9668756/GPs-cash-in-on-sale-of-out-of-hours-provider.html. Accessed 9 August 2016.
- Simoens S and Scott A (2005) 'Integrated primary care organizations: to what extent is integration occurring and why?', *Health Services Management Research* 18(1), 25–40.
- Smith J, Holder H, Edwards N, Maybin J, Parker H, Rosen R and Walsh N (2013) *Securing the future of general practice: new models of primary care*. Nuffield Trust.
- Smith J and Mays N (2007) 'Primary care organizations in New Zealand and England – tipping the balance of the health system in favour of primary care?', *The International Journal of Health Planning and Management* 22(1), 3–19.
- Smith J and Mays N (2012) 'GP led commissioning: time for a cool appraisal', *British Medical Journal* 344, e980.
- Smith J, Mays N, Dixon J, Goodwin N, Lewis R, McClelland S and others (2004) *A review of the effectiveness of primary care-led commissioning and its place in the NHS*. Health Foundation.
- Smith J, Regen E, Shapiro J and Baines D (2000) 'National evaluation of general practitioner commissioning pilots: lessons for primary care groups', *British Journal of General Practice* 50(455), 469–72.
- Smith J and Sibthorpe B (2007) 'Divisions of general practice in Australia: how do they measure up in the international context?', *Australia and New Zealand Health Policy* 4(1), 15.
- Smith M (2015) 'How a GP federation is cutting A&E workload'. www.medeconomics.co.uk/article/1366707. Accessed 9 August 2016.

Thomas P, McDonnell J, McCulloch J, While A, Bosanquet N and Ferlie E (2005) 'Increasing capacity for innovation in bureaucratic primary care organizations: a whole system participatory action research project', *Annals of Family Medicine* 3(4), 312–7.

Thorlby R, Rosen R and Smith J (2011) *GP commissioning: insights from medical groups in the United States*. Nuffield Trust.

Warren FC, Abel G, Lyratzopoulos G, Elliott MN, Richards S, Barry HE and others (2015) 'Characteristics of service users and provider organisations associated with experience of out of hours general practitioner care in England: population based cross sectional postal questionnaire survey', *BMJ* 350, h2040.

Wistow G, Gaskins M, Holder H and Smith J (2015) *Putting integrated care into practice: the North West London experience*. Nuffield Trust.

Wong G, Greenhalgh T, Westhorp G and Pawson R (2014) 'Development of methodological guidance, publication standards and training materials for realist and meta-narrative reviews: the RAMESES (realist and meta-narrative evidence syntheses—evolving standards) project'. *Health Services and Delivery Research* No 2.30, National Institute for Health Research.

Zachariadis M, Oborn E, Barrett M and Zollinger-Read P (2013) 'Leadership of healthcare commissioning networks in England: a mixed-methods study on clinical commissioning groups', *BMJ Open* 3, e002112.

About the authors

Luisa Pettigrew is a Visiting Clinical Fellow in the Nuffield Trust's Health Policy team. She is based at the London School of Hygiene and Tropical Medicine's Department of Health Services Research and Policy as an NIHR In-Practice Fellow. She has policy and research interests in non-financial incentives and organisational models of care in general practice. She also has interests in the international development of primary care. Luisa has worked as a GP since 2008, holds a Master's degree in Health Policy, Planning and Financing and has previously worked on various projects relating to medical education and training, health systems financing and global health development with a focus on primary care.

Nicholas Mays is Professor of Health Policy in the Department of Health Services Research and Policy at the London School of Hygiene and Tropical Medicine where he has been since 2003. He also directs the Department of Health-funded Policy Innovation Research Unit. He has a longstanding research interest in primary care organisations and primary care-led commissioning of health services. Nicholas is a Senior Associate of the Nuffield Trust.

Stephanie Kumpunen joined the Nuffield Trust in 2014 as a Fellow in Health Policy. She specialises in qualitative research and policy analysis. Prior to joining the Trust, Stephanie was a Research Officer at LSE Health and Social Care where she was part of an FP7-funded team examining choice and public reporting in health and long-term care across Europe. She was seconded to the Department of Health (England) in 2013/14 to advise on choice and personalisation policies in the NHS. Stephanie has an MSc in Health Promotion from Western University in Canada and a MSc in Health Policy, Planning and Financing from the London School of Hygiene and Tropical Medicine and the London School of Economics.

Rebecca Rosen is a Senior Fellow in Health Policy at the Nuffield Trust and a GP in Greenwich. She is also an accredited public health specialist. Her current policy interests include integrated care, primary care, new organisational models for general practice and NHS commissioning. Rebecca is a clinical commissioner in Greenwich Clinical Commissioning Group – where her lead areas are long-term conditions and quality. Within her GP practice, Rebecca leads work to improve continuity and quality of care for people with chronic complex ill health and to apply the principles of the chronic care model in a practice setting. In the past Rebecca has worked as Medical Director of Humana Europe; as a Senior Fellow at The King's Fund; and in NHS and academic public health departments. Past research interests include the diffusion of new medical technologies, patient choice and primary care policy.

Rachel Posaner is a library and information services manager in the Health Services Management Centre at the University of Birmingham. She has specialist skills in developing database searches for health care-related evidence and in particular has previously contributed to reviews of the evidence on networks in health and other sectors.

For more information about Nuffield Trust,
including details of our latest research and analysis,
please visit www.nuffieldtrust.org.uk

 Download further copies of this literature review:
www.nuffieldtrust.org.uk/large-scale-general-practice

 Subscribe to our newsletter:
www.nuffieldtrust.org.uk/newsletter

 Follow us on Twitter: [Twitter.com/NuffieldTrust](https://twitter.com/NuffieldTrust)

Nuffield Trust is an independent health charity. We aim to improve the quality of health care in the UK by providing evidence-based research and policy analysis and informing and generating debate.

59 New Cavendish Street
London W1G 7LP
Telephone: 020 7631 8450
Facsimile: 020 7631 8451
Email: info@nuffieldtrust.org.uk

 www.nuffieldtrust.org.uk