Scale, scope and impact of skill mix change in primary care in England: a mixed-methods study

Imelda McDermott,[1] Sharon Spooner,[1*†] Mhorag Goff,[1] Jon Gibson,[1] Elizabeth Dalgarno,[1] Igor Francetic,[1] Mark Hann,[1] Damian Hodgson,[2] Anne McBride,[3] Katherine Checkland[1] and Matt Sutton[1]

[1]Institute for Health Policy and Organisation, Centre for Primary Care and Health Services Research, University of Manchester, Manchester, UK
[2]Sheffield University Management School, University of Sheffield, Sheffield, UK
[3]Institute for Health Policy and Organisation, Alliance Manchester Business School, Manchester, UK

*Corresponding author sharon.spooner@manchester.ac.uk
†Principal investigator

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Scientific summary

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Background

Recent increases in workload pressures in general practice have led to many attempts to support general practitioner (GP) services in England. Innovative use of technology to support patient care has increased, but attention has also focused on increasing skill mix in the general practice workforce, which is described in the *NHS Five Year Forward View* [first published in 2014 (NHS England. *Five Year Forward View*. London: NHS England; 2014) and refreshed in 2017 (NHS England. *Next Steps on the NHS Five Year Forward View*. London: NHS England; 2017)] and in the *General Practice Forward View* [published in 2016 (NHS England. *General Practice Forward View*. London: NHS England; 2016)]. Recommendations included redesigning primary care services by developing multidisciplinary teams of highly skilled health-care staff and creating a minimum of 5000 additional roles. The policy intention is for these additional practitioners to operate as part of a general practice team. There is an apparent assumption that their presence will reduce GP workload and create additional capacity.

Objectives

Our study investigated evolving patterns of skill mix employment in general practice, examined how and why skill mix changes are implemented, explored practitioner and patient experiences of these changes, and estimated the overall impact on outcomes and costs associated with a broader spectrum of practitioner types. Our research questions are detailed below.

Research question 1: what is the scale and distribution of skill mix changes in primary care and how is skill mix change associated with outcomes and costs?

- How has the workforce changed and where has any change occurred?
- How are compositional changes to the workforce associated with later changes in a range of outcomes, including patient and practitioner satisfaction?
- How are workforce changes associated with later changes in costs and practice efficiency?

Research question 2: what motivations drive skill mix deployment at the practice level and what is delivered by the deployment of different practitioner types?

- What motivates practices to choose/not choose increased skill mix deployment?
- Which aspects of health care are undertaken by different practitioner types?

Research question 3: how do skill mix changes affect the experiences of employers, practitioners and patients?

- How are new ways of working being negotiated in general practices where skill mix changes have occurred?
- How is the implementation of change in skill mix associated with the achievement of organisational objectives at practice level?
- How does increased skill mix affect patients' experiences when accessing primary care services?

Methods

This research adopted a mixed-methods approach that spread across three work packages (WPs). WP1 was a quantitative analysis of national data sets (2015–19) on workforce and other aspects of care quality and experience that was designed to capture the extent and impact of skill mix changes. WP2 was an online survey of practice managers (August–December 2019) at 1261 general practices (17% of all practices in England) about their motivations for employing non-GPs. WP3 was a comparative case study (August–December 2019) of five general practices in England that was designed to examine processes and working practices in a way that was sensitive to important differences in context. We conducted 38 interviews with practice staff, 27 observations (totalling 1620 minutes), focus groups with 29 members of the Patient Participation Groups and 125 patient surveys.

Results

Patterns of skill mix in England

We found a 2.84% increase in the reported full-time equivalent (FTE) per 1000 patients (PTP) across all practitioners. The overall FTE of partner GPs declined, whereas the FTE of advanced nurses and newer roles, such as clinical pharmacists (CPs) and physician associates (PAs), increased. Workforce composition showed variation across the English regions.

Motivation driving skill mix changes

Our study found that, although GPs reported difficulty in recruiting GPs as a motivation for implementing skill mix change, practice managers reported their motivation as seeking to increase overall appointment availability, release GP time and provide a better match between what patients need and what the team can deliver. Survey respondents also indicated that their ideal practice would comprise GPs occupying $> 70\%$ of the workforce, with nurses with newer roles occupying $< 20\%$ of the total workforce.

Earlier studies have demonstrated that skill mix change enables the transfer of tasks from GPs to others (i.e. role substitution). However, this is often part of increasing timely access, with the GP continuing to perform these tasks too (i.e. role supplementation) or enabling more systematic access to some patient groups (e.g. in care homes), which could be viewed as service improvement.

Aspects of health care undertaken by different practitioners

Increasing multidisciplinarity in general practices has been accompanied by the continuing development and enhancement of nursing roles. Many nurses are now working at an advanced level and operating as autonomous decision-makers. Practitioners who were more frequently or more recently employed in general practices, such as CPs and paramedics, can work autonomously within their regulated scope of practice and arguably act as substitutes for GPs. The employment (i.e. innovation) of newer non-regulated roles, such as PAs, increases the diversity of skill mix, but may require delegation of tasks. Furthermore, although additional practitioners provide opportunities to distribute work differently, decisions must now be made about which tasks to transfer from GPs to non-GPs, and consideration given to supervision and transfer of responsibility. Greater diversity of practitioners makes it more challenging to accurately define practitioners' competencies and assign suitable work from the myriad problems presented by patients.

New ways of working

Our research confirmed the findings of earlier studies, that is, GPs are willing to transfer tasks. Interprofessional competition and the protection of occupational jurisdiction were not a feature of the case study sites. There appeared to be an acceptance of the need for an increased skill mix (in the absence of being able to recruit GPs) and limited reference to a strategy of GP substitution. Instead, discussions were about the extra work involved in operationalising skill mix change.

Our comparative case studies yielded detailed knowledge of processes general practices had put in place to develop new ways of working and gathered the experiences of practice staff and patients who were navigating these new systems. In our case study sites, general practices engaged in categorisation (of practitioners' competencies and patients' problems) to inform appropriate 'matching' of problems with practitioners and to maintain flexibility and adaptability (in terms of organisational flexibility to support practitioners' work and respond to patients' needs). Practices categorised practitioners according to a combination of qualifications, training, upskilling, specialisation and/or past experiences, rather than solely by job title. Categorisation took the form of a competency framework, skill mix matrix or internal directory. Receptionists used the matrix to match patients' problems with what practitioners could provide. However, in cases where the problem(s) that patients described to receptionists proved different from the problem described to, or explored by, the practitioner during the consultation, the selected practitioner may not have been able to independently deal with the problem(s). The potential for imperfect matching required practices, patients and staff to operate flexibly in the short term to accommodate any mismatch. Patient education/communication and availability of GP supervision for newer roles were vital in ensuring patient acceptance of skill mix change.

Patient experiences

A large majority of patients surveyed (82% of 125) believed that their appointment had been useful and that they had seen the right practitioner to deal with their problem(s). However, focus group participants raised concerns about the burden of patient 'work' required to understand and access unfamiliar appointment booking processes and develop relationships with newer practitioners. Patients felt that the introduction of newer roles and new triage systems were not communicated effectively, and concerns were raised about how some patients (e.g. older adults, infrequent attendees and vulnerable groups) could navigate the new system. Concerns were also raised about the lack of information about newer practitioners and their capabilities. However, as appointments with non-GPs were typically longer than those with GPs, these were seen as more 'holistic' and patients were reassured by the availability of advice from a GP, which helped improve their trust in and acceptance of the newer roles.

Outcomes/impacts

We conducted a multioutput, cross-sectional assessment of associations between different employment levels of different types of practitioners (i.e. workforce composition) and various outcome indicators, followed by a scenario analysis modelling potential changes that may be associated with marginal changes in workforce composition. Owing to the numbers of employed staff in less prevalent roles, for analysis and reporting purposes most outcomes were analysed in relation to FTE PTP for GPs, nurses and a 'direct patient care' (DPC) group that includes CPs, physiotherapists, paramedics and PAs.

Access to doctor and nurse appointments

We found that a higher FTE of GPs or nurses PTP in a practice was associated with a lower reported time since patients saw a GP or a nurse. A higher FTE of nurses PTP was associated with a longer reported time since seeing a GP, suggesting that there is at least some degree of substitutability between these two groups.

Patient satisfaction with making an appointment

A higher FTE of GPs PTP is associated with relatively higher overall satisfaction and patient satisfaction with their experience of making an appointment. A higher FTE of both nurses and other DPC practitioners was associated with a lower satisfaction with their experience of making an appointment, whereas a higher FTE of other DPC professionals was associated with a relatively lower overall satisfaction. A higher FTE of nurses PTP was not associated with any difference in overall satisfaction.

Clinical quality

A higher FTE PTP of GPs, nurses and other DPC practitioners were all associated with higher levels of total Quality and Outcomes Framework performance, with the highest level associated with a higher FTE of GPs PTP.

Prescribing

Given CPs' role in monitoring and influencing prescribing, we analysed their FTE separately from other DPC practitioners. We found that a higher FTE of CPs PTP was associated with relatively higher prescribing quality (as indicated by the percentage of broad to narrow antibiotics prescribed), with no change associated with higher FTE of GPs, nurses or other DPC practitioners. In terms of prescribing volume, we found that a higher FTE of GPs PTP was not associated with any difference in the number of items prescribed per weighted population. A higher FTE of CPs PTP was not associated with any difference in cost per item in terms of prescribing costs.

Hospital utilisation

A higher FTE of GPs or nurses per 1000 population was associated with a relatively lower rate of accident and emergency (A&E) attendances, but a higher FTE of other DPC practitioners PTP was associated with a relatively higher rate of A&E attendances.

General practitioner job satisfaction

We found that a higher FTE of GPs PTP was associated with higher overall GP job satisfaction, but a higher FTE of nurses and other DPC practitioners was associated with slightly lower overall GP satisfaction. In terms of GP hours of work, higher FTE of GPs PTP is associated with a slightly smaller number of hours of work, whereas higher FTE of both nurses and other DPC staff is associated with a negative and then positive relationship with GP hours of work (i.e. a slight U-shaped curve), suggesting that GPs' working hours increased when other staff are employed at relatively low and high levels.

Costs for general practitioner-based prescribing

Higher FTE of GPs, nurses and other DPC practitioners were associated with higher costs, suggesting that employing other practitioners as substitutes for GPs will not reduce overall prescribing costs.

Conclusions

Our study confirms that, although the total general practice workforce is increasing slightly, the increasing number of FTE salaried GPs is not fully compensating for a decline in number of FTE partner GPs. Although there are regional differences in the detail, the overall national trajectory is towards an increasingly diverse workforce that is driven, in part, by a continuing shortfall in GPs but that is, in part, motivated by a desire to redistribute work by matching practitioner competencies to patient needs and by perceived cost-effectiveness. Practices have adapted appointment systems and adopted a more multidisciplinary approach, with practice managers more closely involved in skill management. Moreover, practices have recognised and responded to increased requirements for monitoring and supervising less experienced practitioners and have improved communication within the practice team. Some practices have improved communication with patients. The modelling used in this study has shown a mixed pattern of cross-sectional and longitudinal associations between workforce composition and across data sets reporting patient experience, GP job satisfaction and hours of work, and outcomes indicative of health-care quality and costs.

Implications for health care

Our study suggests that, rather than attempting to achieve an 'optimal' skill mix, general practices need to engage in ongoing management of the skills of their workforce, as the value that different

practitioners add to the workforce will change over time, as well as varying depending on the precise needs of local populations. Therefore, there is a need for ongoing training within practices once newer practitioners are employed. This may have implications for those employed to work across practices within primary care networks (PCNs). In particular, practices will need to put in place structures and processes that ensure that peripatetic staff moving between practices, who may adopt different working patterns, have opportunities to be sufficiently integrated into each practice to work effectively. Cross-network meetings may help harmonise staff and roles' expectations, and this should be prioritised. Our study also suggests that the relationship between GP job satisfaction and the skill mix of their practice is complex. It is not clear if increasing skill mix will increase GPs job satisfaction and enhance recruitment and retention.

Recommendations for research (in order of priority)

- Understanding changes in outcomes and costs (e.g. quality, hospital referrals and patient satisfaction) over time as newer practitioners settle into practice and develop their skills.
- Close monitoring of implementation of skill mix change via PCNs to elucidate factors that support the integration of newer practitioners into general practices, and monitoring of the impact on outcomes.
- Developing appropriate career pathways for newly qualified GPs in primary care to become more experienced and, eventually, capable of taking on supervisory roles and other responsibilities.
- Tracking GP satisfaction over time.
- Exploring ways to accommodate caseload preferences in general practice settings.
- Comparing the impact of the Additional Roles Reimbursement Scheme with more direct investment in practices.
- Identifying ways to improve categorisation of patients' problems and the impact of using artificial intelligence as part of this process.
- Identifying mechanisms that help practitioners retain their identities while working in a multidisciplinary setting.

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