Facilitators and barriers to teaching undergraduate medical students in general practice.

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**Abstract**

Introduction: Globally, primary healthcare is facing workforce shortages. Longer and higher quality placements in primary care increase the likelihood of medical students’ choosing this specialty. However, recruitment and retention of community primary care teachers is challenging. Relevant research is predominantly from the 1990s. We seek to understand contemporary facilitators and barriers for GP (general practitioner) engagement with undergraduate education. Communities of Practice (COP) theory offers a novel conceptualisation which may be pertinent in other community-based teaching settings.

Methods: Semi-structured interviews were undertaken with 24 GP teachers at four UK Medical Schools. We purposively sampled: GPs new to teaching, established GP teachers and GPs who have recently stopped. We undertook NVIVO-assisted deductive and inductive thematic analysis of transcripts. COP theory was used to interpret data.

Results: COP theory illustrated that teachers negotiate membership of three communities of practice: clinical practice, the medical school and a community of teachers. Delivery of clinical care and teaching can be integrated or exist in tension. This can depend upon the positioning of teaching and teacher as central or peripheral to the clinical COP. Remuneration, workload, space and expansion of GP trainee numbers impact on this. Teachers did not identify strongly as members of the medical school or a teaching community. Perception of membership was be affected by medical school communication and support. We demonstrate gaps in medical school recruitment.

Discussion: This research demonstrates the marginalisation of primary care-based teaching and proposes a novel explanation rooted in COP theory. Concepts including identity and membership may be pertinent to other community-based teaching settings. We recommend that medical schools review and broaden recruitment methods. Teacher retention may be improved by optimising the interface between medical schools and teachers, fostering a teaching community, increasing professional rewards for teaching involvement and altering medical school expectations of learning in primary care.

**Introduction**

The World Health Organisation emphasises the importance of good primary care in improving population health and health equity. (1,2) Globally, primary healthcare is facing overwhelming demand. (3,4) Growth of the primary care workforce is a global priority and needs to be rooted in pre-registration training. (5,6) Pre-registration community-based education enhances recruitment across the health workforce. (6-8) For example, the quality and quantity of time that medical students spend in general practice impacts on eventual decisions to pursue this specialty (9) However, a lack of tutors across primary care is a barrier to the expansion of such education. (10) This shortage is likely to become more acute as, internationally, numbers of health care students increase. A balance between service and teaching activity in primary care is crucial to sustainability and career retention both in the short and long term. (11)

Education in general practice in the UK is an exemplar of these issues. There is an acute general practitioner workforce crisis and the number of medical school places in the UK is being increased, partly in response to this crisis (3,12,13) GP tutor recruitment is problematic. (14) This research was initiated because many of the authors were struggling to recruit and retain local GP tutors and had found little recent relevant literature to inform evidence-based recruitment plans with much dating from the 1990s. (15-19) That previous research to improve the recruitment and retention of GP teachers originates from UK, USA, Canada and Australia, suggests this is an important issue in many countries. (17, 20-22)

The facilitators and barriers to general practice tutors which have been highlighted by previous research are listed in Table 1 (15-25). More recent research has almost exclusively been questionnaire and survey-based except for two (an Australian and a UK) qualitative studies. (20-24) However in the former, participants were self-selected and predominantly *current* teachers; the latter studied exclusively long-term placements in a very specific context. The broad purposive sample of this research has enabled us to corroborate previously identified facilitators and barriers and to discover novel factors. Communities of Practice theory has enabled us to offer a new perspective into understanding the 'problem' of GP tutor recruitment and retention as an exemplar which goes beyond the transactional benefits and disadvantages affecting tutors and faculties, to consider a wide range of factors including identity and belonging. Furthermore in demonstrating the importance of relationships across clinical and academic institutions in facilitating teachers’ membership and participation, we highlight learning which may be transferable to other community-based clinical learning situations.

We now report this multi-centre theoretically-informed qualitative study of the contemporary facilitators and barriers to GPs’ involvement in teaching medical students in general practice.

**Methods**

***Ethical Approval***

Research ethics approval was obtained from Newcastle University Ethics Committee. (Reference 6494/2016). Researchers at the other participating institutions received local approval and duly followed local Data Protection Registration procedures.

***Reflexivity***

At the commencement of this study all members of the research team worked as GPs and also as members of teams responsible for their medical schools’ general practice education programmes. We acknowledge that this positioning may influence our interpretation of the data and the ensuing recommendations.

***Sampling***

Four medical schools participated ranging from schools struggling to recruit to those with a surplus of teachers and practices; metropolitan and provincial settings; large and small schools; and a range of traditional and modern curricula. At each school, we purposively recruited: GP teachers who had stopped teaching within the previous two years, current established GP teachers who had taught for two or more years and GPs who had started teaching within the last two years. Within each group we aimed to recruit partners (who lead and often own the practice), salaried (fixed-term contractors employed by the practice) and locum GPs (employed short-term to cover when a GP is absent). Participants received information sheets and gave written consent.

***Interviews***

Data were collected in one-to-one semi-structured interviews conducted by HR, PM, KJ and JB. Interviews lasted between 30 and 50 minutes and were audio-recorded and transcribed. The initial interview schedule was developed by HA and SP and iteratively updated during regular teleconferences between the whole research team throughout interviews and analysis. The transcripts of each interviewer’s first interview were shared and discussed by the full research team in a teleconference to ensure congruence of approach.

***Participants***

24 GPs participated with between five and eight from each school; eight were new teachers, ten were established teachers and six had stopped teaching; 17 were female; 16 were partners, six were salaried doctors and two were locums.

***Primary analysis***

Each interviewer coded their own transcripts using NVIVO 11. Transcripts and emerging codes were reviewed via teleconference and face-to-face meetings of the whole research team at multiple stages, to ensure they reflected the breadth of data across the institutions. A sample of transcripts (half) were analysed by at least a second researcher from a different institution. Initial thematic analysis was informed by Braun and Clark. (26)

***Theoretical stance and application to analysis***

As we became familiar with the data, we recognised that GP teachers were negotiating membership of three communities: a teaching community; a clinical practice community; and the medical school community, so we considered that Communities of Practice (COP) theory offered the most relevant theoretical framework for analysis. (27)

There are many ways of using COP theory in research. We have used Wenger’s definition of COPs as groups sharing expertise and practices.(27) COP members engage in communities through social interactions and active *participation* in social life and through *reification* of their participation. Reification is achieved by creating physical and conceptual artefacts that *‘*reflect a shared experience.’ (27,28). The point at which communities overlap are ‘boundaries’ and movement across boundaries is facilitated by *brokers* who connect different communities. *Boundary objects* are forms of reification which can be shared between communities or act as barriers between them. (27) Members of a community can be either full (central) or peripheral, often depending, for example, upon their level and experience of participation. (29)

We were a team of researchers collecting and analysing data across four sites. It was important, therefore, to ensure clarity about our understanding and application of COP in this study. We pursued iterative conversations and exchange of data to address emerging challenges in the design and analysis phases. We perceived the interrelation of three communities (The Clinical, Teaching and Medical school communities of practice) as shown in Fig 1, which distinguishes factors that are pertinent to activity within individual communities (A-C) and factors pertinent to multiple or all communities (D-G). We defined four units of analysis: *participation and reification* (which related to individual communities) and *brokers and boundary objects* (which related to the interface between multiple communities)*.* This enabled us to approach the data inductively, but also deductively to look for specific elements relevant to COP theory. Two or three of categories A-G were allocated to pairs of the research team (HA and HR, RKM and KJ, SP and JB). Depending on which community was relevant and whether they related to one or more community, the codes were divided into categories (A-G). Pairs then developed initial themes. JB reviewed these themes relative to the coded data to ensure themes were inclusive and coherent across the data set. JB, SP and HA then reviewed, refined and named these themes. This process used COP theory to critically engage across each category and the data set as a whole.

We also conducted a deductive analysis by deliberately searching for evidence in the original codes which would corroborate the facilitators and barriers listed in Table 1. All factors were indeed corroborated by our results.

**Results**

Themes resulting from the analysis are presented under the heading of the community of practice to which they relate. Teaching and teachers vary in their centrality to the clinical COP. Teachers’ varied as to whether they felt a part of a teaching or medical school community. Where this occurred, participants gave pertinent examples of how perceptions of community were fostered.

***Teaching Community***

Though rarely experienced by participants, membership of a community of teachers was acknowledged to facilitate teaching. The professional identity of tutors as GPs also positively reinforced desire to teach.

*Identity*

Some teachers were galvanized to teach because they felt that primary care offered a different but equally valid experience to that offered in hospital. Some commented that it offered a more positive and unique learning environment.

*“That’s not really the purpose of the job that we do and it’s not really to, to teach a lot of pathology and more recognising perhaps some of the signs and the symptoms and managing that and that uncertainty.”*

*Membership of a teaching Community of Practice*

Participants’ desire to be and perception of being part of a teaching community of practice varied. Those working in practices where other GPs taught felt they were a part of a teaching community, facilitating their teaching participation. Some of those who taught alone felt that a sense of connection to a community was lacking, although equally others considered a community was in fact fostered by their medical school.

*“No, actually, no, and that’s why I like to go the exam because that’s the only time we speak to people [other teachers]”*

***Clinical community of practice***

The delivery of clinical care and of medical student teaching are often in tension. The extent of this tension depended on the positioning of teaching as a full or peripheral activity within the clinical community and of the teacher as a full (central) or peripheral member. Physical factors such as the space within the practice also played a role.

*Teaching as central or peripheral to the work of the clinical COP*

The tension between service and teaching partly depended on the value given to teaching as work by the clinical COP and whether the whole team was involved. The tension was greatest when participants portrayed the main work of the COP of the practice as clinical, and teaching as additional. For some, increasing clinical workload was an insurmountable barrier to teaching and a cause for the marginalisation of teaching within the clinical COP.

*“We just don’t have the capacity that we had five or ten years ago, we’re all working much longer hours in our own time, doing the stuff that, either used to be done by someone else, secondary care or other services that don’t exist anymore.”*

In contrast, positioning teaching centrally within the COP fostered an ethos of teaching and a sense of joint enterprise. Consequently teaching was seen as a valuable contribution to the clinical COP. In such practices teaching was thought to bring prestige to the practice and make it overall a more attractive place to work. Teaching also reified clinical practice through recognition in annual appraisal.

*“I think being a teaching practice does help you recruit and retain… I think the ethos of a teaching practice is slightly different, I think that the perception of teaching practices is that they are perhaps a little bit more up to date, and modern.”*

*“I’ve always given [teaching] quite high priority, and I suppose being in the fortunate position where that’s been valued by my partners, so, it’s been seen as part of my contribution...”*

Teaching-service tensions were reduced in practices where multiple clinicians shared teaching responsibilities and when non-medical staff (eg practice managers) and members of the wider primary healthcare team (eg heart failure nurses) were involved in teaching delivery.

*Teacher as central or peripheral to the clinical COP*

The clinician teacher’s position within the clinical COP also affected the service-teaching tension. Central members of the clinical community tended to be partners. Whilst perceived to be in an ideal position to foster an ethos for teaching, many partners reported barriers to teaching prompting ‘regrettable’ decisions to stop. Factors included their responsibility to prioritise patient care at a time when workload was increasing and remuneration for teaching (in real terms) was decreasing.

Training of postgraduate GP trainees was preferred by some participants to undergraduate teaching as it was considered to be financially efficient, rewarding in terms of longitudinal tutor-learner relationship and enhancing of clinical service provision.

Peripheral members of the clinical COP, often salaried and locum doctors, were in a weaker position to foster a clinical community-wide value in teaching. However they often possessed greater personal autonomy to teach as they were less constrained by the financial practice priorities of partners.

*“Most salaried doctors now I think, well most salaried GP’s I think have a day a week that they don’t work [clinically, when] they’re probably much more able than partners are to, to take that time and do something else with it.”*

Tension occurred when peripheral members relied upon partners and administrative staff in order to deliver teaching. Peripheral members could limit this dependence by taking full responsibility for all aspects of teaching organisation. However, in doing so, teaching became an entirely peripheral activity in the practice.

*“…if you come up with a proposal, you can work out with the Medical School and you do it outside your core clinical sessions and you can make it work in a way that’s cost neutral to the practice we are very happy for you to do that.”*

Perhaps the epitome of peripheral membership is that of a locum doctor who is external to the clinical COP and therefore often less able to take responsibility for the administrative work involved in teaching. This non-membership was also important to partners (the employers) who described concerns in trusting an often unknown locum to teach while caring for their patients.

However, one locum had found ‘host’ practices for his teaching and other participants believed that there were locum GPs who were keen to teach but who believed they could not.

*“Younger G.P.’s are definitely not going into partnership, not going into salaried positions, so there are more and more portfolio GPs, so we have a whole host of GPs here who are, maybe, quite keen to teach but they don’t have the facilities to do it.”*

*Physical factors*

Physical space to accommodate students was a common barrier to teaching within the clinical COP whether in smaller or larger practices. Two participants had received external funding for extra teaching space.

***Membership of the Medical School Community***

The medical schools in this study were responsible for the overall delivery of undergraduate student placements in the community. This included organisation of placements in individual practices. Medical schools play an important role in determining teachers’ decisions to teach through the interface they share with teachers, their recruitment strategies and their expectations of practice-based teaching. Feelings of membership of the medical school COP varied, though where they existed they facilitated participation in teaching.

*Interface and membership*

Teachers felt separated from the medical school by both physical distance and poor communication. Nevertheless, the interface between teachers and the medical school was mediated by both brokers and boundary objects. Administrative staff and teaching leads acted as brokers of this interface and directly impacted on teachers’ sense of membership.

*“the great thing with someone like xxxx is that you just go to one person, you can send her an email and she’ll come back very quickly. So, she is, to us the entry point into the Medical School.”*

Feedback, prizes and other forms of recognition, acted as boundary objects between the two communities. GPs greatly appreciated swift and detailed feedback about their teaching and conversely were discouraged when feedback was inconsistent, absent or not frequent enough.

Events organised for teachers in the medical school reduced the perceived physical barrier between them and the medical school community. Participation in other educational activities in the medical school, such as examining, increased the sense of membership, but many teachers commented that they were not made aware of these opportunities.

*Medical school recruitment of tutors*

Some participants had initiated contact with medical schools themselves having never received medical school recruitment materials. This highlighted that medical school recruitment is not reaching all potential GP teachers. Participants suggested a number of ways in which medical schools might improve recruitment (Table 2).

*Medical school expectations of practice-based learning experiences*

The interviews highlighted the variety of teaching in general practice. Some of this variation reflected the different expectations of medical schools: placements ranged from one day to 15 weeks in length and learning aims/topics from general practice to specialities such as endocrinology. Varying expectations impacted on teachers’ motivations to teach; for example, teachers found longitudinal student relationships rewarding in contrast to short clinical placements. Curricula which required teaching of specific subjects in general practice reduced teacher autonomy and were perceived to negatively impact on students’ engagement with teaching.

*“X’s students all did our heads in because they were so outcome based… they have these green books and you have to tick what they do and if we were doing something that was really exciting with a patient but if they’d already got a tick in that box they weren’t interested.”*

**Discussion**

Our study demonstrates that the increasing challenge of delivering clinical care is contributing to the marginalisation of undergraduate community-based teaching. However, this is mitigated in practices which have positioned teaching as a core activity. A ‘frictionless’ interface between the school and the teacher’s community of practice enhances tutors’ engagement with the school and may enhance retention. There appears to be untapped teaching resource in general practice but schools may need to communicate differently to access and support this.

*What this study adds*

This is the first reported study about undergraduate clinical teacher recruitment in general practice to explicitly use Communities of Practice theory. These findings may have relevance to a number of healthcare professions delivering work-place based teaching with in the community. (6-8, 10, 30)

We have highlighted the peripheral position of many teachers relative to both clinical and teaching communities. Walters *et al* alluded to CoP theory in suggesting that identification as “central” members of the teaching community may be the most important motivator to teach. (31) With increasing service demands, careful consideration is needed to ensure that teaching is a central, normalised part of clinical work and that teachers, who may be increasingly isolated, are sufficiently supported by the school and benefit from social interactions across a network of teachers. That there were fewest results pertaining to the Teaching COP is a possible indication that teachers feel less a part of a community of teachers than of a clinical or school community.

Previous research has suggested the importance of both a community of teachers and of an interface with the school.(16,18,20,24) Our analysis echoes this and offers a more in-depth perspective about how this interface might be improved. Our work supports a recent suggestion that good communication and relationships are fundamental to retention of the teaching faculty.(14) No previous research has elicited the impact of medical school expectations on the desire of GPs to teach.

Previous work has focused more on retention of teachers than recruitment. This work is the first to suggest that exposure to medical school recruitment is incomplete.

*Strengths and limitations*

We consider our purposive sampling of, and access to, the perspective of teachers who have stopped or only recently started teaching (along with established teachers) and interviewing across four geographical locations both a major strength of this study and novel.

Nevertheless, multi-site working with multiple interviewers presented challenges to analysis. We maximised consistency through sharing and discussion of initial transcripts; parallel coding at all four centers with regular discussion of the interviews and coding by teleconference; double coding a large sample of transcripts; and oversight of the whole analysis by a core group. Thus the analysis was rigorous, theory-driven and included the variety of perspectives of the 4 centres.

All members of the research team are GPs and employees of the participating medical schools. We acknowledge this may have influenced our interpretation of the results and have lead us to potentially place greater emphasis on certain factors. For instance our results place a strong emphasis on the role of the clinical practice environment and of the medical school. This may have been a result of the theoretical lens chosen or also due to our positioning as GPs and faculty members. We aimed to mitigate bias due to our positioning by acknowledging our preconceived ideas and ensuring codes remained ‘close’ to the data.

Communities of practice theory highlighted the importance of community and the isolation of many teachers and, indeed, teaching activity. We used four units of analysis to interpret our data. More data was available for the participation and broker units of analysis categories, while data less often pertained to reificiation and boundary objects. However, boundary objects are likely to facilitate and reward retention of teachers, therefore their relative absence is perhaps pertinent - developing these forms of reification which heighten perceptions of membership might further motivate involvement in teaching.

*Implications for practice*

Recommendations for how institutions might improve their recruitment and retention of community-based teachers are presented in Table 2. Given the heterogeneity of opinion encountered we expect relevant factors to vary between centres and would therefore encourage individual institutions to assess their local needs.

Recommendations emanate directly from the analysis. The majority of our recommendations relate to the school COP, representing boundary objects, brokers and forms of reification which schools may seek to develop: Given the increased need for community teachers in numerous countries and potential relevance to other specialties delivering community-based teaching we believe these recommendations may be of use internationally. (6-8, 10, 30) Furthermore, these recommendations may be of interest to other specialties and situations where tension exists between teaching and service provision. (32)

*Recommendations for future research*

Our research has suggested that not all primary care practitioners are aware of local opportunities to teach undergraduate students. Future research might usefully explore the proportion of community practitioners who are unaware of these opportunities and how schools might raise their awareness of them. Future research might also usefully explore the perspectives of community practitioners who do not teach in case there are correctable misconceptions which hinder them from doing so. Finally, whilst our work suggests the importance of the relationship between schools and community-based teachers, further research might seek to understand exactly how schools can better support these teachers and whether doing so will improve their retention rates.

*Contributorship*: HA had the idea for this study. HA, SP and RKM designed the study. JB, HM, HR, PM and KJ conducted interviews and initial analysis supervised by HA, SP and RKM. JB, HA and SP finalised analysis. JB wrote the initial paper which was revised by HA, SP and RKM.

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Table 1 – previously identified facilitators and barriers

|  |  |
| --- | --- |
| **Barriers** | **Facilitators** |
| Lack of time, space and money | Keeping up to date/ improving practice |
| Lack of confidence | Enjoyable |
| Patient fatigue | Promoting GP as a career |
| Organisation of teaching/ increased workload | Improving doctor-patient and student-doctor relationship |
| Lack of support from the practice | Variety to working week |
| Lack of feedback | Improving confidence |
| Lack of support from medical school or peer support | Patient enjoyment |
| Affects relationship with patient | Recognition as CPD |
| Stressful | Altruism |
| Employment status | Apprenticeship |
|  | Increase kudos for practice |
|  | Interaction with medical faculty |
|  | Benefits appraisal |
|  | GP tutor interactions |

Table 2 – Recommendations to improve recruitment and retention of tutors

*Retention*:

Interface:

- communications - single point of contact for GPs, and keep GPs informed of curricular changes

- recognition of teaching e.g. prizes

- feedback – detailed, prompt

Community:

* offer teachers opportunities to examine, interview, or teach on campus
* organise events – educational and social
* make it possible for teachers to discuss their ideas together

Placements:

* validate the role of GP placements to learn skills and knowledge distinct from that learnt in hospital
* broaden the remit for learning on placements and encourage involvement of the wider primary care team.
* structure placements to maximise opportunities for a longitudinal student-teacher relationship

Physical barriers:

* local meetings
* free parking

*Recruitment:*

Recruitment route:

- evaluate whether recruitment methods have full coverage of potential GP teachers

- develop a social medial presence and advertise online via GP support groups on social media

* ensure all avenues are explored including via professional bodies and networks

Early career doctors:

* advertise via national schemes which support newly qualified GPs
* ensure GPs in training are aware of opportunities available to teach after finishing professional training

Locum:

* encourage locum doctors to retain links with practices where they are known which might later host them to teach

Fig 1

