

Revealing the reality of undergraduate GP teaching in UK medical curricula: a cross-sectional questionnaire study

ABSTRACT

Background

Time in general practice (GP) offers medical students opportunities to learn a breadth of clinical knowledge and skills relevant to their future clinical practice including uncertainty, multimorbidity and holism - key outcomes identified in GMC Outcomes for Graduates 2018. Undergraduate experiences shape career decisions and current recommendations endorse 25% undergraduate curriculum time should be GP-focused. However, previous work demonstrated GP teaching had plateaued or fallen in UK medical schools. Therefore, an up-to-date description of undergraduate GP teaching is timely.

Aim

To describe the current picture of UK undergraduate GP teaching, including amount of time and resources allocated to GP teaching.

Design and setting

A cross-sectional questionnaire study across 36 UK medical schools.

Method

A questionnaire was designed based on a previous survey performed in 2011-2013, with additional questions on human and financial support allocated to GP teaching. The questionnaire was piloted and revised prior to distribution to leads of undergraduate GP teaching in UK medical schools.

Results

Response rate was 100%. GP teaching formed an average of 9.2% of medical curricula (similar to levels in 2000). UK-wide average payment was £55.60/student/session of in-practice teaching, falling well below estimated costs to practices. Allocation of human resources is varied.

Conclusion

Undergraduate GP teaching provision has plateaued since 2000 and falls short of national recommendations. Chronic under-investment in GP teaching persists at a time when teaching is expected to increase. Both aspects need to be addressed to facilitate high quality undergraduate GP teaching and promotion of the expert medical generalist role.

HOW THIS FITS IN

Undergraduate GP teaching offers high quality clinically-focused teaching, promoting generalism in medicine and encouraging students to consider a possible career in general practice. Changing patient needs have resulted in a move towards more generalist, community-based care and prompted calls to focus undergraduate curricula more on community-based learning. This study shows however that the amount of GP teaching in UK medical curricula is static or even falling, and that investment is variable and inadequate to maintain or expand GP teaching. Unless curriculum priorities change and there is adequate investment in GP teaching, outcomes necessary to meet future population health needs are unlikely to be met.

MAIN TEXT

INTRODUCTION

General practice (GP) is the bedrock of the National Health Service(1) and a core component of UK undergraduate medical school curricula. It is an ideal setting for students to learn clinical and communication skills in the context of holistic patient-centred care(2). Learning from GPs as expert medical generalists provides medical students with valuable lessons about managing uncertainty, health promotion, disease prevention, multimorbidity, continuity of care and NHS organisation(3). Undergraduate teaching in general practice fosters students' abilities to deliver integrated care for complex patients with multimorbidity outside of the hospital context, shifting focus from specialist to generalist care, as recommended by the GMC and Shape of Training reports(4, 5).

However, general practice is under pressure. Government responses to the workforce crisis in the UK include a target of 50% of medical graduates choosing to enter GP training(6), but current trends indicate the proportion is far lower(7). There is a shortage of GPs in many health economies globally(8, 9). Whilst career specialty decision making is complex and not fully understood, specialty perceptions are a key component; themselves influenced by medical school experiences, in particular exposure to role models and clinical placements(10-12). International evidence shows students are positively influenced towards a career in GP by undergraduate GP placements(13).

Across the UK, the number of medical schools and medical student places has increased over the last two decades(14-18) and curricula have evolved in response to changing GMC guidance(4). Current trends in medical education promote a transition to undergraduate curricula becoming more community-focussed(4, 19), yet previous work has shown the amount of GP teaching has plateaued or even fallen(20). GP teaching remains subject to local tariff arrangements resulting in funding which is variable both regionally and across the four nations, and considerably less than actual teaching costs(21-23). Given this complex and changing landscape, and the recruitment issues for GP, it is now vital to consider issues of quantity and resources in relation to undergraduate GP teaching.

A survey of all UK medical schools was undertaken in order to describe the current national picture of undergraduate GP teaching in UK medical schools, which specifically aimed to:

- Quantify the exposure of undergraduate medical students in the UK to GP, and to compare this to historical data
- Describe the financial and human resources allocated to support GP teaching

METHOD

Design

A questionnaire was designed by the lead authors (see Supplementary Appendix), with input from the Heads of GP Teaching Group at the Society for Academic Primary Care (HoTs). Questions were based upon a previous survey published in 2015(20) and new ideas generated by the HOTS group. The questionnaire also contained questions based upon the "By Choice – Not By Chance" report recommendations(24); thus these results are reported in detail elsewhere.

To elicit precise data on the amount of GP teaching in curricula, respondents were asked to provide granular detail on the number of sessions of GP teaching by each curriculum year, including:

- GP teaching delivered in the GP setting,

- GP teaching delivered by GPs outside the GP setting e.g. seminars, classroom teaching,
- Optional GP teaching e.g. electives, SSCs.

Teaching time in the entire curriculum was calculated using the number of sessions per week and the number of weeks per curriculum year, with a session assumed to last 3.5 hours. Respondents were asked to exclude revision and assessment weeks. The curriculum was not divided into “pre-clinical” and “clinical” stages, as such distinctions were no longer felt applicable.

An initial draft of the questionnaire was revised on the basis of an internal pilot with four potential respondents and again after discussion at a meeting of the HoTs Group. Revisions comprised rewording of questions to increase validity, for example defining the exact nature of a teaching session.

Distribution

Email invitations to complete the survey were sent to leads for GP teaching at all UK medical schools with an active cohort of medical students during the academic year 2017-2018. An active cohort was defined as there being medical students enrolled and studying on the course; therefore, this included recently opened medical schools who had not yet produced graduates by the academic year 2017-2018, and excluded schools with the first cohort of students starting from September 2018.

A password protected online survey tool (Online Surveys, www.onlinesurveys.ac.uk) was used. Two email reminders were sent. When necessary, the lead researcher sought clarification of individual submitted data for specific questions only, e.g. if the data suggested a question had been misinterpreted.

Analysis

For the purposes of defining amount of GP teaching in the overall curriculum, 32 out of 36 medical schools were included for analysis, four schools were excluded as they were not yet producing graduates at the time of the survey. For data relating to financial and human resources allocated to GP teaching, as well as the perceived trends in GP teaching, all 36 schools were included for analysis.

Microsoft Excel was used for basic calculations, and IBM SPSS (version 24) for detailed statistical analysis. To augment the basic statistics gained from the survey, detailed statistical analysis was used to investigate associations between the data and medical school characteristics, including location and age of medical school. “Older” and “newer” schools were defined by those established prior to, and since, 2000 given the expansion in UK medical schools since 2000.

Member checking was undertaken: interim results were shared and discussed with respondents at a HoTs meeting in July 2019. Following this discussion respondents were given the opportunity to revise responses which were incomplete or inaccurate due to inconsistency in question interpretation. Only 3 schools needed to amend responses due to inaccuracy in their original response, e.g. giving daily payment rates for GP teaching when the question asked for sessional payment rates.

RESULTS

All (n=36/36) UK medical schools with an active cohort of medical students for the academic year 2017-2018 completed the questionnaire between December 2018 and February 2019. The median is reported as the measure of average due to data skew.

Amount of GP teaching

Percentage of the curriculum

Out of the 32 included schools, the median proportion of medical curriculum assigned to GP teaching is 9.2%, with a wide variation from 3.9%-19.0%. There is no significant difference in the percentage of GP teaching based upon a school’s location (England vs devolved nations, north vs south). However, the percentage of GP

teaching in “older” medical schools is significantly lower than that in “newer” medical schools (Mann-Whitney U: median 8.3% vs 12.9%, $U=168.0$, $p=0.006$).

Total number of sessions delivered

In the 32 included schools, the median number of sessions of GP teaching delivered is 144, equivalent to 14.5-16 weeks teaching over the entire course. The variation between schools is again significant: a range of 65-313 sessions of teaching.

Practice-based vs out of GP teaching

Across the 32 included schools, the median number of sessions of GP teaching in practice is 108, forming 7.0% of the entire curriculum. The trend is for a small amount of practice-based GP teaching in years 1 & 2 (2.1% and 3.0% respectively), increasing in years 3, 4 and 5 (7.7%, 8.3%, and 10.5% respectively). The reverse is true for teaching delivered by GPs out of practice, with a larger proportion delivered earlier in the course.

Compulsory vs optional GP teaching

Whilst the majority of schools ($n=30/32$) reported some optional GP teaching, such as student selected components or electives, this is typically on a small scale or only undertaken by a small number of students.

Comparison to historical trends

The percentage of GP teaching appears to be declining: from 13.0% in Harding et al’s 2011-13 study to 9.2% in the current one (20). However, different methods have been used historically to measure GP teaching, such as measuring GP teaching only in the clinical curriculum (20). If the final three years of medical school are taken as a surrogate for the “clinical” years, the percentage of GP teaching still appears to be decreasing; in our study 10.2% of the clinical curriculum, using this definition, is taught in general practice or by general practitioners. A comparison with previous surveys, based on years 3-5 as a proxy for the clinical curriculum in the included 32 medical schools, is shown in Supplementary Figure 1.

The number of sessions of clinical GP teaching appears stable, with 108 sessions of practice-based GP teaching across the entire curriculum in 2018 compared to Harding et al’s 102 sessions (20) (see Supplementary Figure 2).

Reported trends in GP teaching

In 36 UK medical schools, the Heads of GP Teaching (HoTs) perceive that GP teaching in the curriculum has generally increased ($n=21/36$) or remained stable ($n=9/36$) over the past 5 years. The majority ($n=23/36$) describe plans to increase GP teaching in their local curricula over the next 5 years, with only 2 schools anticipating a decrease.

Financial resources allocated to GP teaching

All 36 medical schools provided financial information regarding funding for GP teaching. The average payment is £55.60/student/session of practice-based GP teaching. The variation between schools is marked: from £32.21 to £120.00/student/session. 25% of schools provide the same payment per student per session regardless of the curriculum year and placement expectations.

The payment rates offered in “newer” medical schools are significantly higher than that in “older” medical schools (Mann-Whitney U: median £62.95 vs £51.31/student/session, $U=230.0$, $p=0.003$).

Funding beyond that of the immediate costs of teaching students is unusual. The majority of schools are not able to invest in GP premises to encourage expansion of teaching ($n=32/36$), and the majority do not plan to increase funding for GP teaching in the next 5 years ($n=22/36$). Many of those who do plan to increase funding state this is dependent on increases in funding nationally.

Human resources allocated to GP teaching

Academic GP faculty and administrative support

Academic GP faculty time and administrative support allocated to GP teaching varies considerably: average total academic GP faculty time is 2.6WTE (range 1.1-11.4) and administrative support allocated to GP teaching is 2.4WTE (range 0.6-14.0).

Recruitment

Recruitment is a mixed picture: 11% schools (n=4/36) find it difficult to recruit campus-based GP teachers, whereas 78% (n=28/36) describe difficulty in recruiting GP teaching practices. Cited reasons for this include increasing service demands on GP staff (n=6/36), increasing student numbers (n=5/36), increasing GP teaching creating a demand-supply imbalance of GP teaching practices (n=3/36), competition for teaching practices in areas where medical schools' localities overlap (n=5/36), and poor remuneration for in-practice teaching (n=1/36).

DISCUSSION

Summary

GP teaching forms 9.2% of medical curricula in the UK. The majority of GP teaching (108 of 144 sessions) is practice-based, equivalent to 11-12 weeks. Compared to historical trends, the amount of GP teaching is static or falling. Average funding for practice-based GP teaching is £55.60/student/session. Considerable variation exists between UK medical schools in the amount of GP teaching, payment for practice-based GP teaching, and human resources allocated to GP teaching.

Strengths and limitations

The 100% response rate combined with the specific, detailed questions about GP teaching within the questionnaire suggests this study gives the most accurate representation of GP teaching to date. It is also the first UK-wide description of funding made available by all medical schools of practice-based GP teaching.

As curricula are continually evolving, this study provides a snapshot only. This work focuses on the quantity of GP teaching; it cannot provide data on the quality of teaching, nor other types of community-based teaching which may be increasing. Staffing calculations assume alignment between funding sources and allocated activities; however, staff may undertake roles supporting both GP teaching and other teaching. Measuring the amount of all GP teaching in the entire curriculum has made the reliability of comparisons to historical data limited due to previous methods being unclear or different to those used in this study.

The percentage of curriculum spent in GP does not assume the remainder of the curriculum is dedicated to hospital-based specialties. The significance of GP representation would be enhanced by comparative data on other specialties, as well as data on teaching in other primary care or community settings which may be expanding.

Finally, we acknowledge that this discussion focuses entirely on UK medical schools. The international picture is unfortunately even more variable and challenging: for example in Brekke et al's 2013 study of 400 medical schools in 39 European countries, many schools had only very brief exposure to general practice and 13.5% none at all(25).

Comparison with existing literature

Amount of GP teaching

The proportion of undergraduate curricula dedicated to GP teaching appears to be falling, contrasting with the perception of an expansion in GP teaching. A number of factors may explain this apparent discrepancy.

Differences in the methods of calculating GP teaching historically may obscure the trend: previous surveys asked individual medical schools to calculate the percentage of GP teaching themselves, whereas this survey produced more standardised and granular results by calculating the percentage from detailed data requested from medical schools.

Alternatively, GP teaching may truly be falling, with widely discussed proposals for expansion not materialising in reality. Recruitment difficulties, reported here and in the literature (26), alongside inadequate remuneration for teaching are likely to be contributors.

The perceptions of leads of undergraduate GP teaching that teaching is either increasing or static contradict the survey's quantitative findings. This may be a result of increasing student numbers necessitating increasing delivery of GP teaching from a medical school perspective, but without translating to an increase in GP teaching experienced by individual students. Other possible explanations are the increased focus on GP teaching gives the impression of a greater volume of teaching; or an impending increase in teaching in new curricula which have not been captured in this survey.

It is clear GP teaching is not expanding as recommended by academics, the RCGP, GMC, the NHS Chief Executive and the Scottish Government (3, 4, 20, 23, 27, 28). This threatens the future medical workforce, given the importance of students gaining sufficient experience in general practice to understand primary health care, gain medical generalist skills and to consider a career in general practice(11, 12). The lack of expansion of GP teaching is also undermines building a medical workforce for sustainable primary healthcare(29).

Funding of GP teaching

Funding levels and mechanisms for GP teaching differ across the UK: in England and Wales, there is no national tariff and funding has not been updated since 1995(21, 22), whereas in 2019 the funding in Scotland was increased(23). Our data demonstrates funding for in-practice GP teaching varies significantly across UK medical schools. The average funding for in-practice GP teaching of £55.60/student/session translates to an annual sum of £20,572 based on 37 weeks per year and 10 sessions per week. In contrast, the 2019 national tariff for secondary care placements in England is £33,286 per annum(21), and a recent costing exercise has found the actual cost of undergraduate teaching to GP practices in England to be £111 per teaching session, equivalent to £41,700 per annum(22). A similar costing exercise in Scotland found the cost of teaching to be £85 per teaching session, equivalent to £31,450 per annum(23). A lack of funding to support investment in practices is also concerning given the evidence that space is a barrier to hosting medical students(28, 30).

In 2016, the UK House of Commons Health Select Committee called for new funding arrangements which reflect the true cost of teaching undergraduates to be expedited to be in place by 2016-2017(31). Despite these recommendations, no changes have been made to date. Underfunding of undergraduate GP teaching has also been highlighted by the RCGP; the disparity of funding between primary and secondary care teaching being emphasised by the cited statistic that GPs receive around 40% less than their hospital counterparts for undergraduate teaching(32).

Implications for practice

Our recommendations are outlined in Table 1.

CONCLUSION

Our research has shown current levels of GP teaching are static or falling. Significant variation exists across the UK in the amount of GP teaching and its support, both financial and human. Continuing under-investment relative to the actual costs of teaching students seems to be the main factor threatening the sustainability of GP teaching and preventing its expansion. Without sufficient funding, medical schools are unlikely to influence GP recruitment issues positively or be able to promote generalism for all future doctors. Based upon these

findings, and building upon recent work in Scotland, a UK-wide review of GP in medical curricula and its associated funding is urgently required to facilitate high quality undergraduate GP teaching and promotion of the expert medical generalist role.

ADDITIONAL INFORMATION

Contributors

Heads of GP teaching at all of the participating 36 medical schools contributed to the authorship of the paper through discussions at HoTs meetings to agree on the idea and content of the survey, completion of data collection, and review and opportunity to comment on drafts of the paper. Contributors were John McKeown (Aberdeen); Nigel Hart (Belfast); Kirsty Shires (Birmingham); Duncan Shrewsbury (Brighton and Sussex); Greg Simons (Buckingham); Trevor Thompson (Bristol); Richard Darnton (Cambridge); Frances Gerrard (Cardiff); Maggie Bartlett (Dundee); Karen Fairhurst (Edinburgh); Alex Harding (Exeter); Lindsey Pope (Glasgow); Kevin Anderson (Hull York); Jo Protheroe (Keele); Euan Lawson (Lancaster); Jane Kirby (Leeds); Rodger Charlton (Leicester); Matt James (Liverpool); Sonia Kumar (London Imperial); Anne Stephenson (London Kings); Will Spiring (London QMUL); Adrian Brown (London SGUL); Joe Rosenthal (London UCL); Rachel Lindley (Manchester); Hugh Alberti (Newcastle); Jaspal Taggar (Nottingham); Julian Hancock (Oxford); Richard Perrett (Plymouth); Jon Dowell (ScotGEM); Rebecca Walmsley (St Andrews); Ben Jackson (Sheffield); Deborah Rose (Southampton); Llinos Roberts (Swansea); Jim Gardener (UCLan); Dickie Young (UEA); and Sue Davies (Warwick).

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Ethical approval

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Competing interests

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