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Less time, less money? Revealing the reality of general practice in UK undergraduate medical curricula

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TITLE PAGE

Less time, less money? Revealing the reality of general practice in UK undergraduate medical curricula

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Less time, less money? Revealing the reality of general practice in UK undergraduate medical curricula

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.

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For Review Only

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.

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3 Finally, we acknowledge that this discussion focuses entirely on UK medical schools. The international picture
4 is unfortunately even more variable and challenging: for example in Brekke et al's 2013 study of 400 medical
5 schools in 39 European countries, many schools had only very brief exposure to general practice and 13.5%
6 none at all(25).
7

8 9 **Comparison with existing literature**

10 11 **Amount of GP teaching**

12 The proportion of undergraduate curricula dedicated to GP teaching appears to be falling, contrasting with
13 the perception of an expansion in GP teaching. A number of factors may explain this apparent discrepancy.
14

15 Differences in the methods of calculating GP teaching historically may obscure the trend: previous surveys
16 asked individual medical schools to calculate the percentage of GP teaching themselves, whereas this survey
17 produced more standardised and granular results by calculating the percentage from detailed data requested
18 from medical schools.
19

20 Alternatively, GP teaching may truly be falling, with widely discussed proposals for expansion not materialising
21 in reality. Recruitment difficulties, reported here and in the literature (26), alongside inadequate remuneration
22 for teaching are likely to be contributors.
23

24 The perceptions of leads of undergraduate GP teaching that teaching is either increasing or static contradict
25 the survey's quantitative findings. This may be a result of increasing student numbers necessitating increasing
26 delivery of GP teaching from a medical school perspective, but without translating to an increase in GP
27 teaching experienced by individual students. Other possible explanations are the increased focus on GP
28 teaching gives the impression of a greater volume of teaching; or an impending increase in teaching in new
29 curricula which have not been captured in this survey.
30

31 It is clear GP teaching is not expanding as recommended by academics, the RCGP, GMC, the NHS Chief
32 Executive and the Scottish Government (3, 4, 20, 23, 27, 28). This threatens the future medical workforce,
33 given the importance of students gaining sufficient experience in general practice to understand primary
34 health care, gain medical generalist skills and to consider a career in general practice(11, 12). The lack of
35 expansion of GP teaching is also undermines building a medical workforce for sustainable primary
36 healthcare(29).
37

38 39 **Funding of GP teaching**

40 Funding levels and mechanisms for GP teaching differ across the UK: in England and Wales, there is no national
41 tariff and funding has not been updated since 1995(21, 22), whereas in 2019 the funding in Scotland was
42 increased(23). Our data demonstrates funding for in-practice GP teaching varies significantly across UK
43 medical schools. The average funding for in-practice GP teaching of £55.60/student/session translates to an
44 annual sum of £20,572 based on 37 weeks per year and 10 sessions per week. In contrast, the 2019 national
45 tariff for secondary care placements in England is £33,286 per annum(21), and a recent costing exercise has
46 found the actual cost of undergraduate teaching to GP practices in England to be £111 per teaching session,
47 equivalent to £41,700 per annum(22). A similar costing exercise in Scotland found the cost of teaching to be
48 £85 per teaching session, equivalent to £31,450 per annum(23). A lack of funding to support investment in
49 practices is also concerning given the evidence that space is a barrier to hosting medical students(28, 30).
50

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

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8 Our recommendations are outlined in Table 1.
9

10 **CONCLUSION**

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12 Our research has shown current levels of GP teaching are static or falling. Significant variation exists across
13 the UK in the amount of GP teaching and its support, both financial and human. Continuing under-investment
14 relative to the actual costs of teaching students seems to be the main factor threatening the sustainability of
15 GP teaching and preventing its expansion. Without sufficient funding, medical schools are unlikely to influence
16 GP recruitment issues positively or be able to promote generalism for all future doctors. Based upon these
17 findings, and building upon recent work in Scotland, a UK-wide review of GP in medical curricula and its
18 associated funding is urgently required to facilitate high quality undergraduate GP teaching and promotion of
19 the expert medical generalist role.
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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

The authors have declared no competing interests.

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REFERENCES

1. NHS England. General Practice Forward View. 2016.
2. Park S, Khan NF, Hampshire M et al. A BEME systematic review of UK undergraduate medical education in the general practice setting: BEME Guide No. 32. *Med Teach*. 2015;37(7):611-30.
3. Harding A, Hawthorne K, Rosenthal J. Teaching general practice: Guiding principles for undergraduate general practice curricula in UK medical schools. Royal College of General Practitioners, Society for Academic Primary Care;; 2018.
4. General Medical Council. Outcomes for graduates 2018. General Medical Council;; 2018.
5. Finlay I. Report from the UK Shape of Training Steering Group (UKSTSG). *Shape of Training*; 2017.
6. Department of Health. Delivering high quality, effective, compassionate care: developing the right people with the right skills and the right values. A mandate from the Government to Health Education England: April 2013 to March 2015. In: Health Do, editor. 2013.
7. Lambert T, Goldacre M. Trends in doctors' early career choices for general practice in the UK: longitudinal questionnaire surveys. *Br J Gen Pract*. 2011;61(588):e397.
8. Frisch S. The primary care physician shortage. *BMJ*. 2013;347:f6559.
9. Viscomi M, Larkins S, Sen Gupta T. Recruitment and retention of general practitioners in rural Canada and Australia: a review of the literature. *Can J Rural Med*. 2013;18:13-23.
10. Querido SJ, Vergouw D, Wigersma L et al. Dynamics of career choice among students in undergraduate medical courses. A BEME systematic review: BEME Guide No. 33. *Med Teach*. 2016;38(1):18-29.
11. Royal College of General Practitioners, Medical Schools Council. *Destination GP: Medical students' experiences and perceptions of general practice*. 2017.
12. Alberti H, Randles HL, Harding A, McKinley RK. Exposure of undergraduates to authentic GP teaching and subsequent entry to GP training: a quantitative study of UK medical schools. *Br J Gen Pract*. 2017;67(657):e248.
13. Amin M, Chande S, Park S et al. Do primary care placements influence career choice: What is the evidence? *Educ Prim Care*. 2018;29(2):64-7.
14. McManus IC. Medical school applications--a critical situation. *BMJ*. 2002;325(7368):786-7.
15. Office for Students. *Health education funding: Medical and dental target intakes for entry in 2019-20*: Office for Students;; 2019. Available from: <https://www.officeforstudents.org.uk/advice-and-guidance/funding-for-providers/health-education-funding/medical-and-dental-target-intakes/>
16. The Health and Education National Strategic Exchange (HENSE). *Review of Medical and Dental School Intakes in England*. 2012. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213236/medical-and-dental-school-intakes.pdf
17. Department of Health. *Expansion of undergraduate medical education: A consultation on how to maximise the benefits from the increases in medical student numbers*. In: Department of Health, editor.: Department of Health;; 2017. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/600835/Medical_expansion_rev_A.pdf
18. Roberts N, Bolton P. *Medical school places in England from September 2018*. In: House of Commons Library, editor.: House of Commons Library; 2017. Available from: <http://researchbriefings.files.parliament.uk/documents/CBP-7914/CBP-7914.pdf>

19. Royal College of General Practitioners Scotland. From the Frontline: The changing landscape of Scottish general practice. Royal College of General Practitioners Scotland;; 2019.
20. Harding A, Rosenthal J, Al-Seaidy M et al. Provision of medical student teaching in UK general practices: a cross-sectional questionnaire study. *Br J Gen Pract.* 2015;65(635):e409.
21. Department of Health and Social Care. Education and Training Tariffs: Tariff guidance and prices for the 2019-20 financial year. In: Department of Health and Social Care, editor. 2019.
22. Rosenthal J, McKinley R, Smyth C, Campbell J. The real costs of teaching medical students in General Practice: A cost-collection survey of teaching practices across England. *Br J Gen Pract.* 21 Oct 2019: bjgp19X706553. DOI: <https://doi.org/10.3399/bjgp19X706553>
23. Gilles J. Undergraduate medical education in Scotland: enabling more general practice based teaching. In: Health Workforce Leadership and Services Reform Directorate, Health and social care,, editor.: Scottish Government; 2019.
24. Wass V, Gregory S, Petty-Saphon K. By choice - not by chance: supporting medical students towards future careers in general practice. 2016.
25. Brekke M, Carelli F, Zarbailov N et al. Undergraduate medical education in general practice/family medicine throughout Europe – a descriptive study. *BMC Med Educ.* 2013;13(1):157.
26. Barber JRG, Park SE, Jensen K et al. Facilitators and barriers to teaching undergraduate medical students in general practice. *Med Educ.* 2019;53(8):778-87.
27. Iacobucci G. NHS chief wants big overhaul of medical training. *BMJ.* 2017;356:j417.
28. McDonald P, Jackson B, Alberti H, Rosenthal J. How can medical schools encourage students to choose general practice as a career? *Br J Gen Pract.* 2016;66(647):292.
29. World Health Organisation and UNICEF. Declaration of Astana. World Health Organisation and UNICEF (United Nations Children's Fund); 2018. Available from: <https://www.who.int/docs/default-source/primary-health/declaration/gcphc-declaration.pdf>
30. Harding A, McKinley R, Rosenthal J, Al-Seaidy M. Funding the teaching of medical students in general practice: a formula for the future? *Education for Primary Care.* 2015;26(4):215-9.
31. House of Commons Health Committee. Primary Care: Fourth Report of Session 2015-16. 2016. Available from: <https://publications.parliament.uk/pa/cm201516/cmselect/cmhealth/408/408.pdf>
32. Royal College of General Practitioners. Future GPs call for fair tariffs for primary care teaching Royal College of General Practitioners website: Royal College of General Practitioners; 2019 [updated 27th June 2019. Available from: <https://www.rcgp.org.uk/about-us/news/2019/june/future-gps-call-for-fair-tariffs-for-primary-care-teaching.aspx>.
33. Harrison M, Alberti H, Thampy H. Barriers to involving GP Speciality Trainees in the teaching of medical students in primary care: the GP trainer perspective. *Educ Prim Care.* 2019;30(6):347-54.
34. Thampy H, Alberti H, Kirtchuk L, Rosenthal J. Near peer teaching in general practice. *Br J Gen Pract.* 2019;69(678):12.
35. Alberti H, Rosenthal J, Kirtchuk L et al. Near peer teaching in general practice: option or expectation? *Educ Prim Care.* 2019;30(6):342-6.

Table 1: Recommendations

Study finding	Background	Recommendations
The amount of GP teaching in undergraduate medical curricula has not increased over the last 20 years	The Scottish Government has mandated 25% of the curriculum is delivered in the primary care setting and allocated funding in support(23)	We recommend a similar central mandate to make more GP in undergraduate curricula a reality for all UK medical schools
Funding for undergraduate teaching in General Practice falls well below estimated costs to practices	Funding which reflects the actual cost of teaching medical students is urgently needed to maintain current teaching levels and additional funding (e.g. investment in surgeries who lack space to teach) is needed to increase the quantity and quality of GP teaching	We recommend an adequate Primary Care Tariff which reflects the cost of teaching and simplifies current payment mechanisms
Recruitment of teaching practices is a challenge for most medical schools	Near peer teaching is recognised to be mutually beneficial for GP trainees and students alike, and recent literature provides practical suggestions to help promote these developments(33-35)	We recommend an introduction of formal mechanisms to encourage GP teachers from underused areas such as GP trainees, early career GPs and locums(26)
Less transparent and granular methods have been used historically to measure GP teaching in the UK	Few similar surveys have been undertaken internationally	We recommend that our survey is repeated on a five-year basis to review progress in the UK and is replicated elsewhere to make international comparisons

FIGURE S1

Figure S1: Average percentage of undergraduate clinical curriculum taught in or by GP (20)

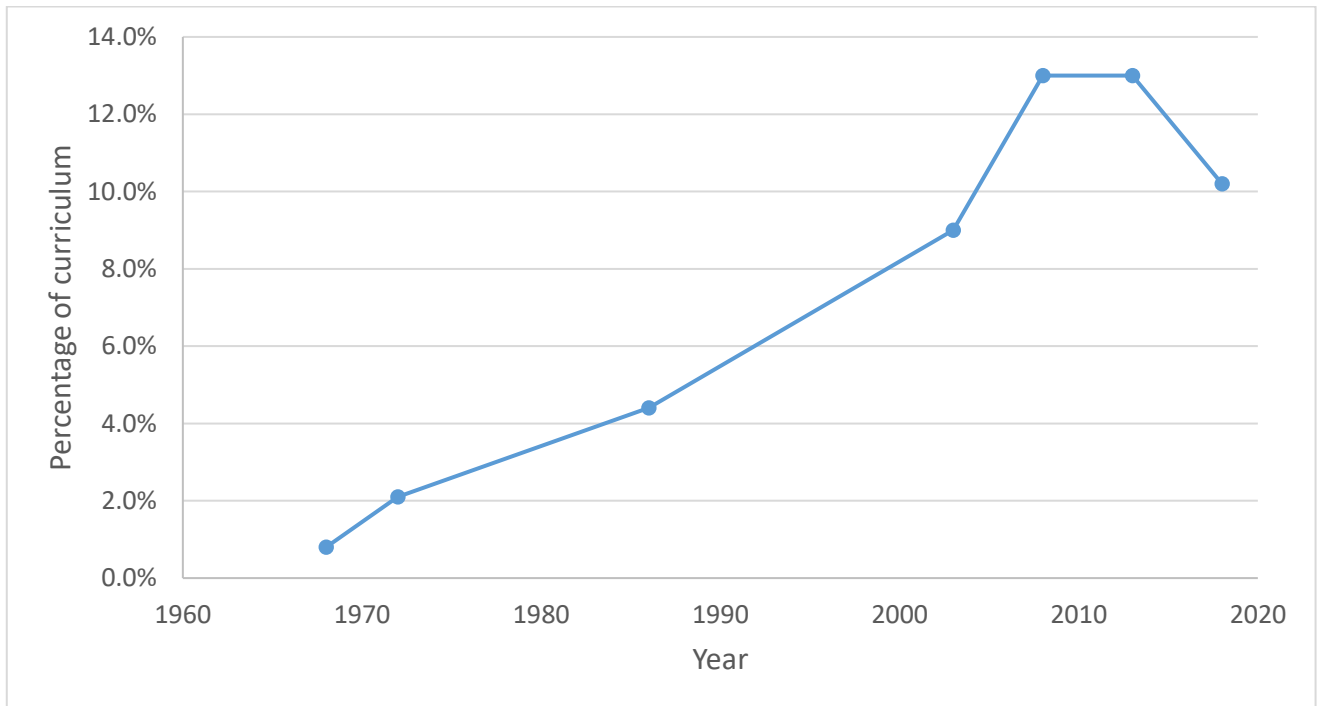
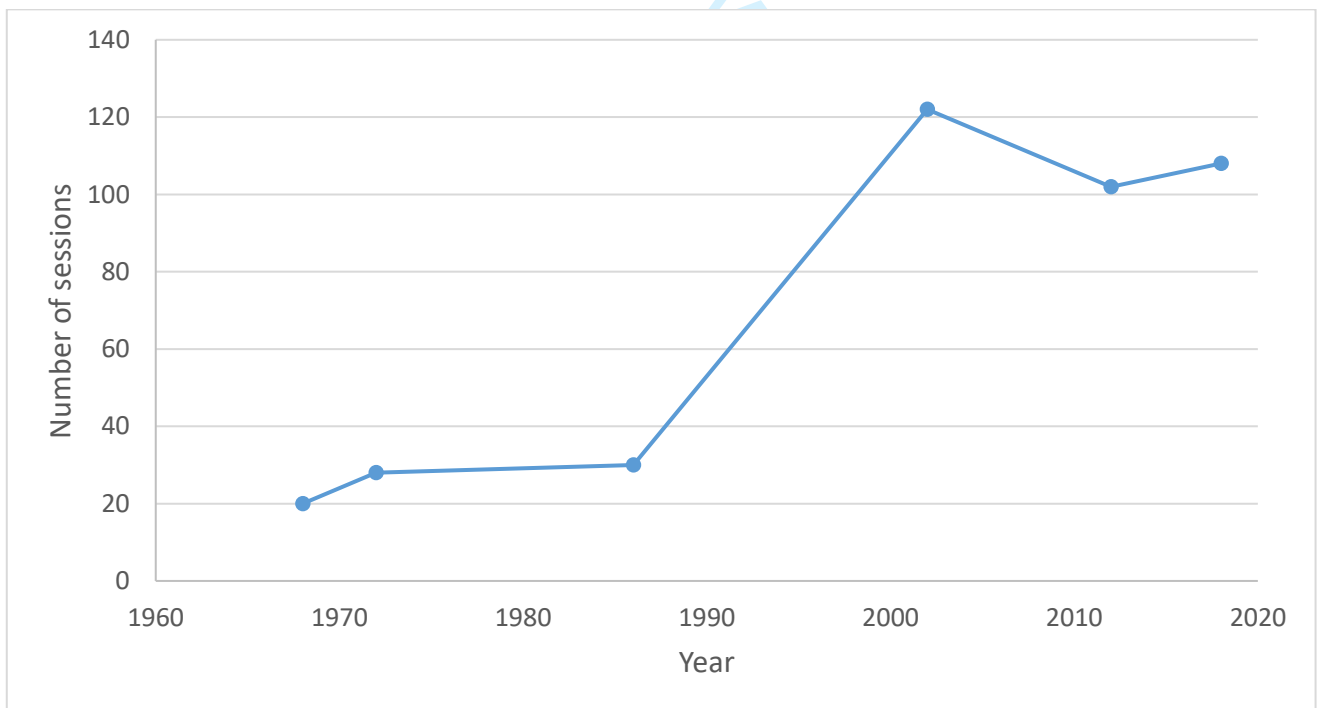


FIGURE S2

Figure S2: Historical and current trend of clinical GP teaching (20)



APPENDIX S1:

Appendix S1: A national survey of undergraduate teaching in General Practice in the United Kingdom 2018

Introduction

Thank you for completing the national survey of undergraduate teaching in General Practice in the UK. Anonymised responses will be used in research projects nationally and potentially internationally.

You can save your responses and return to the survey at any time by clicking "Finish later" at the bottom of each page.

Structure: Compulsory GP teaching and learning

For the following questions, please only include data for compulsory teaching in the academic year 2017-2018. Please do not include any data on optional GP teaching, for example, student selected components.

(1a) How many compulsory sessions (approximately half a day) per curriculum year does a hypothetical medical student learn in a GP setting? We are aware that some students may get more exposure than others. For each year, please briefly describe the nature of the teaching and learning delivered in a GP setting. *For example, Year 1: 7.5 sessions (half the students do 8 sessions, half the students do 7 sessions); "sitting in" with GPs. Or Year 5: 30 sessions; parallel surgeries, supervised home visits.*

	Number of sessions	Nature of teaching and learning
Year 1	<input type="text"/>	<input type="text"/>
Year 2	<input type="text"/>	<input type="text"/>
Year 3	<input type="text"/>	<input type="text"/>
Year 4	<input type="text"/>	<input type="text"/>
Year 5	<input type="text"/>	<input type="text"/>
Year 6 (if appropriate)	<input type="text"/>	<input type="text"/>

(1b) Use this comments box to tell us about any special arrangements, for example in some schools a proportion of students have longer compulsory placements than their peers.

(2) GPs don't just teach in practice settings, they may also teach on campus or in secondary care. Per curriculum year, what is the total number of hours that a hypothetical medical student learns from GPs, but not in a GP setting? Please include teaching and learning sessions delivered by GPs such as lectures, communication skills tutorials, professionalism seminars and any other sessions as appropriate. Please give the total number of hours, and in the text box provide more details on the different contexts. *For example, Year 1: total number of hours 30; comprising of 5 hours of lectures, 20 hours of communication skills seminars and 5 hours of professionalism seminars.* One complication! In some types of teaching, some students will be taught by a GP whilst others are taught by non-GPs e.g. hospital clinicians. To account for this, please include the proportion of hours which are delivered by GPs - this will give us a more accurate picture of GP contribution. *For example, if a hypothetical student does 20 hours of professionalism seminars, but only half of professionalism tutors for his/her cohort are GPs, please only add 10 hours to your total.* Please exclude formal assessment time from these figures (e.g. GPs going into the medical school to examine OSCEs). If this is not clear please do email to ask.

	Number of hours	Nature of teaching and learning
Year 1	<input type="text"/>	<input type="text"/>
Year 2	<input type="text"/>	<input type="text"/>
Year 3	<input type="text"/>	<input type="text"/>
Year 4	<input type="text"/>	<input type="text"/>
Year 5	<input type="text"/>	<input type="text"/>
Year 6 (if appropriate)	<input type="text"/>	<input type="text"/>

Structure: Optional GP teaching and learning

For the following questions, please only include data for optional teaching and learning experiences; for example, student selected components.

(3) Please complete the following grid to describe what optional GP teaching and learning opportunities in the GP setting were offered to students in the academic year 2017-2018. Please include all sessional time based in the GP setting, regardless of whether the student is physically present in the practice (i.e. include self-directed learning in the total). If, within a given curriculum year, you have SSCs of different sessional durations please make an estimate of the average number.

	Number of placements undertaken	Number of sessions per placement	Additional comments
Student selected components	<input type="text"/>	<input type="text"/>	<input type="text"/>
Elective placements	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other (please describe)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other (please describe)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other (please describe)	<input type="text"/>	<input type="text"/>	<input type="text"/>



(4) We are also aware that GPs may teach other optional sessions that are not practice-based, for example a Wilderness Medicine SSC. If the GP is only making a contribution, count their personal teaching sessions only. However if the non-practice based learning is lead by the GP, then count the total sessions of the placement (including self-directed learning) as per the previous question. These distinctions allow a more accurate picture of GP exposure – please aim for accuracy but we appreciate you will need to make some judgement calls. *For example: a GP who teaches 1 session on a Pulmonary Rehab SSC to give the GP perspective – add 1 session to total. A GP who leads a 4 week History of Medicine SSC – add 36 sessions (based on a 9 session week) even though direct contact time is only 8 sessions*

	Number of placements undertaken	Number of sessions involving GP teachers per placement	Additional comments
Student selected components	<input type="text"/>	<input type="text"/>	<input type="text"/>
Elective placements	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other (please describe)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other (please describe)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other (please describe)	<input type="text"/>	<input type="text"/>	<input type="text"/>

Course information

Please note for all questions in this survey we are interested to hear about the programmes delivered in the UK. Please do not include data on programmes delivered on international campuses.

(5) In the main medical programme at your medical school, how many students were there in each year during the academic year 2017-2018? Please include students on compulsory intercalated degrees, but not optional intercalated degrees.

Year 1	<input type="text"/>
Year 2	<input type="text"/>
Year 3	<input type="text"/>
Year 4	<input type="text"/>
Year 5	<input type="text"/>
Year 6 (if appropriate)	<input type="text"/>

(6) Please describe the arrangements for intercalation at your medical school (e.g. which year does intercalation occur, whether intercalation is compulsory or optional etc). *For example: intercalation is optional and can occur after Year 3 or Year 4. There are 50 places for intercalation after Year 3 and 60 places for intercalation after Year 4.*

(7) Do you offer other UK programmes additional to your main programme of study? For example, graduate entry medicine

- Yes
- No

****Please note this question is only applicable if you have answered "Yes" to Question 7****

Additional programmes

Please note we are interested to hear about additional programmes delivered in the UK. Please do not include data on programmes delivered on international campuses.

(7b) Please tell us about the additional UK medical programme(s) at your medical school. How many students were there in each year during the academic year 2017-2018? Please include students on compulsory intercalated degrees, but not optional intercalated degrees.

	Programme A	Programme B	Programme C
Name of programme	<input type="text"/>	<input type="text"/>	<input type="text"/>
Brief description of programme	<input type="text"/>	<input type="text"/>	<input type="text"/>
Year 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Year 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
Year 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
Year 4	<input type="text"/>	<input type="text"/>	<input type="text"/>
Year 5	<input type="text"/>	<input type="text"/>	<input type="text"/>
Year 6 (if appropriate)	<input type="text"/>	<input type="text"/>	<input type="text"/>

Only

Course organisation

(8) In order to allow us to calculate the proportion of GP teaching in undergraduate curricula, please tell us how many weeks there are in your overall medical programme for each year. Please only include weeks in which the students are taught or on placement (for example exclude revision/assessment weeks).

Year 1	<input type="text"/>
Year 2	<input type="text"/>
Year 3	<input type="text"/>
Year 4	<input type="text"/>
Year 5	<input type="text"/>
Year 6 (if appropriate)	<input type="text"/>

(9) In order to allow us to calculate the proportion of GP teaching in undergraduate curricula, please tell us whether your standard week consists of 9 or 10 sessions?

Year 1	<input type="text"/>
Year 2	<input type="text"/>
Year 3	<input type="text"/>
Year 4	<input type="text"/>
Year 5	<input type="text"/>
Year 6 (if appropriate)	<input type="text"/>

(10a) Has the proportion of general practice/primary care in your curriculum changed in the last 5 years? If so, how?

- Yes, the proportion of GP in the curriculum has decreased
- Yes, the proportion of GP in the curriculum has increased
- No, the proportion of GP in the curriculum has remained stable

(10b) Please add your comments: for example, what has influenced decisions regarding the amount of GP in the curriculum?

(11a) Are there any plans to change the proportion of general practice/primary care in your curriculum in the next 5 years? If so, how?

1 Yes, there are plans to increase the proportion of GP in the curriculum

2
3 Yes, there are plans to decrease the proportion of GP in the curriculum

4
5 No, the proportion of GP in the curriculum is planned to remain stable

6
7 (11b) Please add your comments: for example, what has influenced decisions regarding the amount of GP in the
8 curriculum? Describe any new initiatives.
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12 (12) How many different GP practices does an average student experience during the entire course?
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18 (13a) Are students purposefully sent to a variety of GP practices e.g. large, small, urban, rural? If so, please describe

19
20 No

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22 Yes

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24 (13b) If you selected Yes, please describe:
25

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28 (14) What are the names of GP placements at your medical school? *For example, Year 1: Primary care attachment,*
29 *Year 3: Junior rotation in General Practice, Year 5: Senior placement in General Practice*
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People

(15a) Who are the key academic staff involved in the leadership of primary care at your medical school? Please provide job titles, outline of role, and number of whole time equivalents dedicated to the delivery and management of primary care teaching. We are aware that different centres pay GP educators on different scales; for each of your staff please indicate on the dropdown which payscale is applicable. For example: *GP lecturer, 1st and 2nd year teaching in non-clinical setting, 0.5 WTE*

Job title	Role	Whole time equivalent	Payscale	If you selected Other, please specify:
			<input type="text"/>	
			<input type="text"/>	
			<input type="text"/>	
			<input type="text"/>	

(15b) If you have run out of boxes please continue your data entry here:

(16a) Who are the key administration staff involved in supporting primary care teaching at your medical school? Please provide job title, number of sessions (half days) per week dedicated to primary care, and their grade if known. If a member of staff has a variety of roles be sure to only include the sessions dedicated to primary care. For example: *Lead Administration for Primary Care, 8 sessions supporting primary care teaching*

Job title	Number of sessions	Grade
-	<input type="text"/>	<input type="text"/>
-	<input type="text"/>	<input type="text"/>
-	<input type="text"/>	<input type="text"/>
-	<input type="text"/>	<input type="text"/>

(16b) If you have run out of boxes please continue your data entry here:

1 (17a) Are GP trainees involved in teaching in your region? If so, are these arrangements formal (e.g. GP trainees
2 employed as teaching fellows or equivalent) or informal (e.g. GP trainees volunteering to teach medical students)?

- 3 No, GPSTs are not involved in teaching medical students in the region
4
5 Yes, there are informal arrangements for GP trainees to contribute to teaching medical students in the region
6
7 Yes, there are formal arrangements for GP trainees to contribute to teaching medical students in the region
8
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10 (17b) Please describe the opportunities available or challenges experienced:
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14 (18a) On the following scale, please rate the ease of recruiting practices for student teaching in the community
15

- 16 Difficult - we struggle to recruit enough teaching practices
17
18 Neither easy nor difficult - we recruit enough teaching practices for our needs
19
20 Easy - we have a waiting list for teaching practice
21
22

23 (18b) Please add your comments:
24
25

26 (19a) On the following scale, please rate the ease of recruiting GPs to teach students in the medical school
27

- 28 Difficult - we struggle to recruit enough GP teachers
29
30 Neither easy nor difficult - we recruit enough GP teachers for our needs
31
32 Easy - we have a waiting list for GP teachers
33
34

35 (19b) Please add your comments:
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39 (20a) What "teacher development" initiatives are offered to your faculty academic staff?
40

- 41 Fee sponsorship for medical education qualification(s) e.g. Certificate in Medical Education, Diploma in Medical
42 Education
43
44 Support for staff to attain formal recognition from Higher Education Academy (HEA) e.g. Fellow status
45
46 Support for staff to apply for academic promotion
47
48 Staff development workshops
49
50 Other staff development initiatives (please describe)
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53 (20b) If you selected other staff development initiatives, please describe:
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(21a) What “teacher development” initiatives are offered to your GP teachers?

- Fee sponsorship for medical education qualification(s) e.g. Certificate in Medical Education, Diploma in Medical Education
- Support for staff to attain formal recognition from Higher Education Academy (HEA) e.g. Fellow status
- Support for staff to apply for academic promotion
- Staff development workshops
- Other staff development initiatives (please describe)

(21b) If you selected other staff development initiatives, please describe:

Raising the profile of General Practice

(22) How would you describe GP representation at higher management levels in your medical school (higher than that of the GP teaching organisation)? Feel free to comment on the possible impact of this representation. *For example: the deputy dean and head of assessment are both GPs.*

(23a) Which of the following best describes your departmental situation?

- In my university primary care teaching and primary care research are closely integrated within a single department/unit/section
- In my university primary care teaching and primary care research are situated in the same department/unit/section though there isn't much integration
- In my university primary care teaching and primary care research occur in geographically and administratively distinct departments/units/sections
- In my university there is not a department/unit/section which is dedicated to primary care research

(23b) Please add your comments:

(24a) Are GPs involved in your outreach programme and widening participation activities?

- No
- Yes (please describe)

(24b) If you selected Yes, please describe:

(25) Tell us about involvement of GPs in selection processes. What proportion of interviewers involved in selection processes for the medical programme are GPs? Please describe their involvement.

(26a) Are the following areas formally addressed in your curriculum?

	Yes	No
Undermining of GP	<input type="radio"/>	<input type="radio"/>
The hidden curriculum	<input type="radio"/>	<input type="radio"/>
NHS management	<input type="radio"/>	<input type="radio"/>
Delivery of care at the primary-secondary care interface	<input type="radio"/>	<input type="radio"/>
Career options in general practice e.g. portfolio GP	<input type="radio"/>	<input type="radio"/>
Business elements of general practice e.g. partnership, salaried	<input type="radio"/>	<input type="radio"/>

(26b) Please add any comments if necessary

(27) Regarding careers events in your medical school:

How many careers events are there in total over the whole curriculum?	<input type="text"/>
Of these how many involve General Practitioners?	<input type="text"/>

(28) How is a career in GP promoted at careers event sessions?

Resources

We appreciate that some of this information may be regarded as sensitive. All data from the survey will be kept anonymous.

(29a) We'd like to know the sessional (i.e. half day) rate at which you pay your GP teachers. We realise rates may vary depending on placement, number of students etc - so we have provided several boxes below to describe different arrangements. To allow comparison, please do any necessary calculations to express rates in the form of £/student/session. *For example: Year 3, Junior rotation in General Practice, Placement in GP practice with practical experience, £55/student/session*

	Year	Rotation name	Type of placement	Payment £/student/session	rate
7	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	
10	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	
16	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	
19	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	

(29b) If necessary, please add further information:

(30a) Has the payment rate for primary care teachers changed in the last 5 years? If so, how?

- Yes, the payment rate has decreased
- Yes, the payment rate has increased
- No, the payment rate has remained stable

(30b) Please add your comments:

(31a) Are there any local plans to change the payment rate for primary care teachers in the next 5 years? If so, how?

- Yes, there are plans to increase the payment rate for community teaching
- Yes, there are plans to decrease the payment rate for community teaching
- No, the payment rate is planned to remain stable

(31b) Please add your comments:

(32a) Do you have a programme of investment in practice premises in order to encourage expansion of teaching?

- No
- Yes (please describe)

(32b) If you selected Yes, please describe:

1
2
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4
5 (33) What percentage of the total MUT (Medical Undergraduate Tariff) or ACT (Additional Cost of
6 Teaching) payments made to your medical school are directly allocated to teaching and learning in
7 General Practice? If necessary, please contact your MUT or ACT co-ordinator to find out this
8 information.
9

10
11
12 (34) Please briefly describe your understanding of how the total medical undergraduate tariff is
13 distributed between primary and secondary care at your medical school?
14
15

16 17 18 Future challenges

19 (35) Please describe up to 3 current challenges which you are facing with respect to primary care
20 teaching (also outlining possible solutions where you can):
21

- 22 1.
23
24 2.
25
26 3.
27

28
29 (36) Please describe up to 3 innovations in your medical school with respect to primary care teaching:
30

- 31 1.
32
33 2.
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35 3.
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39 Demographics

40 (37) Please complete this table with your personal information
41

42 Title	<input type="text"/>
43	
44 Full Name	<input type="text"/>
45	
46 Role	<input type="text"/>
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48 Name of School	<input type="text"/>
49	
50 Email Address	<input type="text"/>
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THANK YOU!

Many thanks for taking the time to complete this survey; click "Finish" below to submit your responses.

We are proposing a follow up qualitative study of interviews with heads of GP teachers at UK medical schools to explore some of the areas that are difficult to capture in a survey.

(38) Would you be happy to be invited to participate in our follow up qualitative study?

- Yes
- No

(39) If you have any comments about this survey or research study please enter them here: