

In-consultation information and advice-seeking by Australian GP trainees from GP trainers – a cross-sectional analysis

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WHAT IS ALREADY KNOWN IN THIS AREA

- The apprenticeship model of general practice (GP) training is dependent on appropriate supervision and support of the GP trainee, including ready access to GP trainer information and advice.
- The in-consultation information- and advice-seeking of GP trainees from their trainer has not previously been well documented.

WHAT THIS WORK ADDS

- Trainees seek information from the GP trainer in 6.9% of problems and in 9.2% of consultations, with management-related questions more common than diagnostic.
- There are a number of significant trainee, patient and consultation associations of information- and advice-seeking.
- Our findings have implications for GP trainer professional development workload, quality of patient care and trainees' acquisition of clinical competencies.

SUGGESTIONS FOR FUTURE WORK OR RESEARCH

- Future research could explore the specific clinical questions that trainees ask their GP trainers, and the triggers, barriers and enablers for trainees calling for trainer assistance.

Keywords: general practice training, medical education, patient case-mix

SUMMARY

Introduction

The apprenticeship model of general practice (GP) training is based on appropriate supervision. A central component of supervision – in-consultation information-seeking of GP trainees from their trainer – has not been documented. We aimed to establish the prevalence, characteristics and associations (trainee, practice, patient and consultation) of this information-seeking.

Methods

Australian trainees recorded demographic, clinical and educational details of 60 consecutive consultations in each GP term of their training, including the rate and nature of information-seeking.

Results

Six-hundred and forty-five trainees contributed data for 1426 trainee-rounds, 84 723 consultations and 131 583 problems. Information was sought from the trainer for 9130 (6.9% (95% CI 6.8–7.1)) of all problems encountered (and in 7833 (9.2% (95% CI 9.0–9.4)) of consultations): 11.7% (95% CI 11.0–12.4) were for diagnosis, 53.1% (95% CI 52.1–54.2) for management and 35.2% (95% CI 34.2–36.2) for both diagnosis and management.

Assistance was sought most commonly for skin problems (20.0%) and musculoskeletal problems (12.6%).

Significant adjusted associations of information-seeking included patient age; male patient gender; earlier training term; trainee being younger and female; trainee's training organisation; longer consultation; and trainee generation of learning goals.

Discussion

Our findings have implications for trainer workload and professional development, patient care and trainee education and training.

INTRODUCTION

The transition from hospital to general practice (GP) is challenging for GP trainees, who encounter differences in the breadth of clinical problems and their chronicity, time pressures, clinical uncertainty, unfamiliar practice systems and financial management.^{1,2} Appropriate supervision with ready access to clinical and organisational support is therefore critical.

Vocational general practice training in Australia is based on the apprenticeship model, where trainees consult independently with patients, but practice under the general supervision of accredited trainers (supervisors). The GP trainer has been defined as 'a general practitioner who establishes and maintains an educational alliance that supports the clinical, educational and personal development of a resident'.³ Within this apprenticeship model, the GP trainer is regarded as the cornerstone of trainee education, with the trainer–trainee educational alliance providing a platform for all other aspects of

learning. This includes the opportunity for the trainee to seek guidance whenever required. The primacy of the trainee–trainer relationship appears to extend into future information-seeking behaviour, with many studies reporting that communication with ‘human’ sources of information prevails among, and is highly valued by, medical practitioners.^{4–9}

However, while the apprenticeship model provides for regular structured educational contacts, real-time in-consultation support and advice from the trainer is initiated by the trainee in response to particular clinical issues within the consultation. Thus, this vital aspect of supervision is at the discretion of the learner and is contingent upon the trainee both identifying relevant clinical issues and being prepared and able to initiate trainer involvement. This model of relative independence therefore has potential implications for teaching and learning, as well as patient safety.

Trainee decisions about seeking clinical support from trainers have been explored qualitatively in the hospital setting (where trainee independence is less), and found to be influenced by three broad issues – clinical factors, e.g. urgency; trainer factors, e.g. availability, approachability; and trainee factors, e.g. expertise, desire for independence, sense of professional credibility.¹⁰

Previous studies have investigated the overall information-seeking needs and behaviours of general practice trainees.^{11–13} However, despite its importance for both training and quality care, only one previous study has addressed GP trainees’ real-time information-seeking from their trainers.¹⁴ This small report was not analysed statistically. The international literature does not describe how often GP trainees ask their GP trainers for assistance or what clinical, educational and contextual factors are associated with such requests. Yet this information has significant implications for trainee education, patient safety and GP trainers’ professional development and workload.

Our aim was to describe the prevalence of real-time in-consultation information- and advice-seeking from their trainers by GP trainees; the characteristics of the information and advice accessed; and factors (trainee, practice, patient and consultation) associated with information- and advice-seeking behaviours.

METHODS

We analysed data from eight rounds of data collection, 2010–2013, of the Registrar Clinical Experiences in Training (ReCEnT) project.

ReCEnT

The ReCEnT project is described in detail elsewhere.¹⁵ Briefly, ReCEnT is an ongoing cohort study of the in-practice clinical experiences of general practice trainees. ReCEnT is a multi-site study involving

trainees from four regional training providers (RTPs, geographically defined training organisations) across four of the six Australian states (New South Wales, Victoria, South Australia and Tasmania). All trainees at the four RTPs complete data collection as part of their training programme.¹⁶ This involves each trainee completing a round of data collection in each of their three or four six-month (full-time equivalent) terms in general practice posts. Trainees may consent to the use of their data for research purposes.

Trainees complete a questionnaire prior to each data collection round, eliciting demographic data of themselves and their current practice.

Patient consultation data are recorded via a paper-based patient encounter form. Approximately halfway through their placement, the trainees record demographic, clinical and educational details of 60 consecutive consultations. Only office-based, not home or nursing home, consultations are recorded.

Outcome factor

The outcome factor for this analysis was whether the trainee sought in-consultation information or advice from their trainer (or another GP in the practice acting in lieu of the trainer). This was elicited, for each consultation, by a question on each encounter form recorded and linked to the specific problem managed.

Independent variables

Independent variables related to trainee, patient, practice, consultation and educational aspects of the consultation.

Trainee factors were age, gender, training term, place of medical qualification (Australia/international), and full-time/part-time status.

Patient factors were age, gender, indigenous (Aboriginal or Torres Strait Islander) status, new patient to the practice, and new patient to the trainee.

Practice factors included rurality/urbanicity, practice size (number of GPs), and if the practice routinely bulk-billed (that is, there was no financial cost to the patient for the consultation). Practice postcode was used to define the Australian Standard Geographical Classification-Remoteness Area (ASGC-RA)¹⁷ (the degree of rurality) of the practice location, and to define the practice location’s Socioeconomic Index for Area (SEIFA) Relative Index of Disadvantage.¹⁸

Consultation factors were duration of consultation, whether a practice nurse was involved in the consultation, the number of diagnoses/problems dealt with, whether a problem/diagnosis was a chronic disease, and if pathology was ordered or a specialist referral made. Diagnoses/problems were coded according to the International Classification of Primary Care, second edition classification system (ICPC-2 plus).¹⁹ Chronic disease diagnoses were defined using a system employing ICPC2-plus rubrics and codes.²⁰

Educational factors, apart from whether the trainee sought any information or advice from their trainer (the outcome factor), were whether this assistance was for diagnosis, management, or both, and whether trainees generated any learning goals in the consultation. The assistance data are linked to the problem/diagnosis for which it was sought.

Statistical analysis

This was a cross-sectional analysis of data from the longitudinal ReCENt project. The proportion of problems for which the trainee sought in-consultation information or advice from a trainer was calculated with 95% confidence intervals.

Of those problems for which the trainee sought information or advice, the proportions for which the assistance was for diagnosis, management, or both diagnosis and management, were calculated with 95% confidence intervals.

Analysis was conducted at the level of 'problem' rather than 'consultation', as it is for individual problems that trainees seek information or advice.

Simple and multiple logistic regressions were then performed using the dependent variable 'trainee sought in-consultation assistance from a trainer'. All independent variables with a *P*-value < 0.20 in univariate analysis were included in the multiple regression model. The logistic regression was within a generalised estimating equations (GEE) framework to account for the repeated measures on trainees.

Analyses were programmed in SAS v9.4 (SAS Institute, North Carolina, USA) and STATA v11.2.

RESULTS

Six-hundred and forty-five trainees (response rate of 94.3%) contributed data for 1426 trainee-rounds, 84 723 consultations and 131 583 problems.

Table 1 Characteristics of participating GP trainees and practices

Variable	Class	<i>n</i> (%)	(95% CI) or Mean (SD)
Trainee variables (<i>n</i> = 645)			
Trainee gender	Male	220 (34.1)	(30.4–37.8)
	Female	425 (65.9)	(62.2–69.6)
Pathway trainee enrolled in	General	494 (77.0)	(73.7–80.2)
	Rural	148 (23.0)	(19.8–26.3)
Qualified as a doctor in Australia	No	155 (24.4)	(21.1–27.8)
	Yes	480 (75.6)	(72.2–78.9)
Trainee age (years)	Mean (SD)	32.8 (6.6)	
Trainee-term or practice-term variables (<i>n</i> =1426)			
Trainee training term	Term 1	557 (39.1)	(36.5–41.6)
	Term 2	488 (34.2)	(31.8–36.7)
	Term 3	306 (21.5)	(19.3–23.6)
	Term 4	75 (5.3)	(4.1–6.4)
Trainee works full-time	No	302 (21.7)	(19.5–23.8)
	Yes	1091 (78.3)	(16.2–80.5)
Trainee worked at the practice previously	No	994 (70.6)	(68.3–73.0)
	Yes	413 (29.4)	(27.0–31.7)
Does the practice routinely bulk bill	No	1179 (83.4)	(81.5–85.4)
	Yes	234 (16.6)	(14.6–18.5)
Number of GPs working at the practice	1–5	454 (32.5)	(30.1–35.0)
	≥6	941 (67.5)	(65.0–69.9)
Rurality of practice	Major city	827 (58.0)	(55.4–60.6)
	Inner regional	424 (29.7)	(27.4–32.1)
	Outer regional or remote	175 (12.3)	(10.6–14.0)
SEIFA* Index (decile) of practice	Mean (SD)	5.4 (2.8)	

*Socioeconomic Index for Area (SEIFA) Relative Index of Disadvantage.

Overall, 65.9% of trainee participants were female. Mean trainee age was 32.8 years. Table 1 displays the characteristics of participating trainees and practices.

Information was sought from the trainer for 9130 (6.9% (95% CI 6.8–7.1)) of all problems encountered, and in 7833 (9.2% (95% CI 9.0–9.4)) of consultations. As a proportion of all problems where information or advice was sought from the trainer, 11.7% (95% CI 11.0–12.4) were for diagnosis, 53.1% (95% CI 52.1–54.2) for management, and 35.2% (95% CI 34.2–36.2) for both diagnosis *and* management.

The ICPC-2plus chapter classifications of problems/diagnoses for which assistance was sought are presented in Figure 1. The most common ICPC-2plus chapters were skin (20.0% of all problems), musculoskeletal (12.6%) and general and unspecified (12.0%).

Univariate associations of seeking information from the trainer are presented in Table 2 and the results of the multivariate analysis are presented in Table 3. Significant patient-factor adjusted associations of seeking trainer information or advice were age less than 15 (OR 1.31) and greater than 64 (OR 1.29) (compared to referent age group 15–34 years); male gender (OR 0.87 – female compared to male); and not being new to either the trainee or the practice (OR 0.80 and OR 0.91, respectively). Trainee-factors associated with seeking trainer information or advice were being in an earlier term of training (OR 0.60, Term 2 compared to Term 1); being younger (OR 0.96); and being female (OR 1.28). The RTP in which the trainee trained was also associated with information- and advice-seeking (OR 1.61 and OR

1.79 for RTP 2 and 4 respectively when compared with RTP 1). Consultation factors significantly associated with information- or advice-seeking were the consultation being longer (OR 1.05); addressing fewer problems (OR 0.70); resulting in imaging (OR 1.32), referral (OR 1.48), or a follow-up appointment (OR 1.24); and the generation of trainee learning goals (OR 4.6).

DISCUSSION

Main findings

Trainees access in-consultation information or advice from their trainer for 6.9% of problems managed and in 9.2% of consultations. Information- or advice-seeking for management-related questions was more common than for diagnostic questions. Information- or advice-seeking reduces with increasing seniority of the trainee within the training programme. A number of other patient, trainee and consultation factors were significantly associated with information- and advice-seeking, as was the trainees' training organisation, but there were no significant practice associations. In-consultation seeking of information and advice was strongly associated with the generation of learning goals to access information post-consultation.

This is the first time the nature and associations of within-consultation information- and advice-seeking by the GP trainee of the trainer have been described.

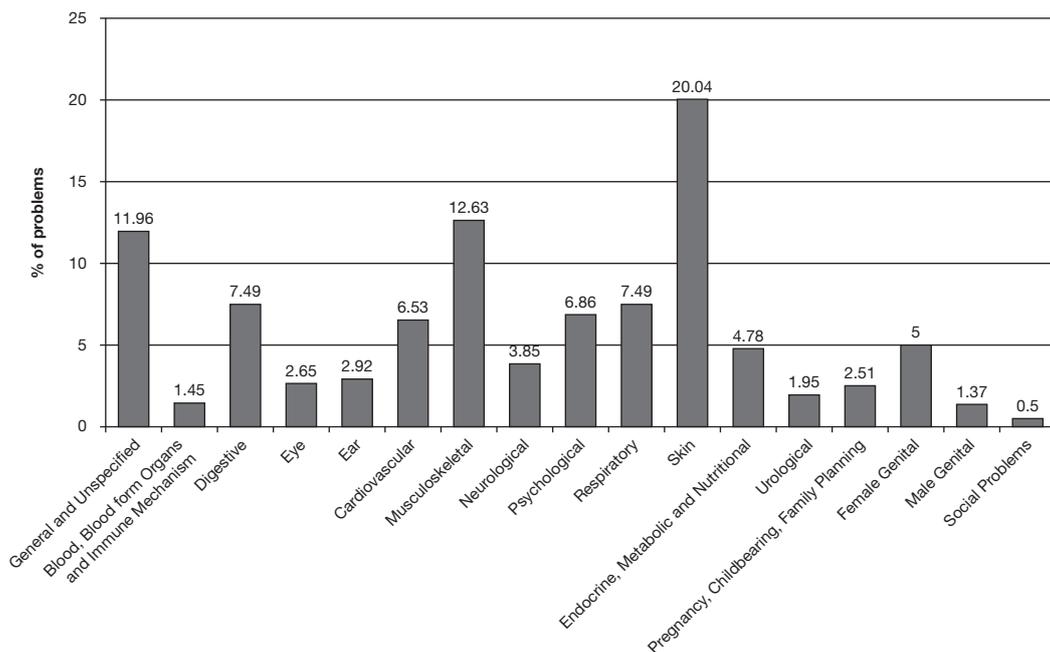


Figure 1 The ICPC-2plus chapter classifications of problems/diagnoses for which assistance was sought

Table 2 Univariate associations of characteristics of independent variables with information- or advice-seeking from the GP trainer

Variable	Class	Sought assistance		P
		No (<i>n</i> = 122453) <i>n</i> (%)	Yes (<i>n</i> = 9130) <i>n</i> (%)	
Patient age group	0–14	16134 (92)	1492 (8.5)	<0.0001
	15–34	30871 (93)	2234 (6.7)	
	35–64	49810 (93)	3482 (6.5)	
	65+	23642 (93)	1772 (7.0)	
Patient gender	Male	44309 (92)	3606 (7.5)	<0.0001
	Female	75019 (93)	5276 (6.6)	
ATSI	No	114952 (93)	8583 (6.9)	0.47
	Yes	1347 (92)	123 (8.4)	
NESB	No	109789 (93)	8026 (6.8)	0.86
	Yes	7256 (91)	714 (9.0)	
Trainee gender	Male	41146 (94)	2748 (6.3)	0.12
	Female	81307 (93)	6382 (7.3)	
Trainee FT or PT	Part time	26228 (92)	2129 (7.5)	0.34
	Full time	93439 (93)	6826 (6.8)	
Training term/post	Term 1	46869 (89)	5735 (11)	<0.0001
	Term 2	41838 (95)	2401 (5.4)	
	Term 3	27149 (97)	911 (3.2)	
	Term 4	6597 (99)	83 (1.2)	
Worked at practice previously	No	84521 (92)	7405 (8.1)	<0.0001
	Yes	36292 (96)	1625 (4.3)	
Qualified as doctor in Australia	No	29100 (93)	2338 (7.4)	0.30
	Yes	91372 (93)	6688 (6.8)	
Previous health qualifications	No	107550 (93)	8028 (6.9)	0.54
	Yes	13550 (93)	1015 (7.0)	
Post grad qualifications	No	91131 (93)	6468 (6.6)	0.18
	Yes	30277 (92)	2595 (7.9)	
Practice size*	Small	39532 (93)	3150 (7.4)	0.23
	Large	80278 (93)	5897 (6.8)	
Practice routinely bulk bills	No	101305 (93)	7438 (6.8)	0.12
	Yes	20172 (93)	1599 (7.3)	
Rurality	Major city	70851 (93)	5645 (7.4)	0.64
	Inner regional	36127 (93)	2597 (6.7)	
	Outer regional/remote/very remote	15475 (95)	888 (5.4)	
RTP	1	44915 (94)	2635 (5.5)	0.001
	2	14433 (93)	1014 (6.6)	
	3	12388 (92)	1046 (7.8)	
	4	50717 (92)	4435 (8.0)	
Internet at desk	No	2958 (96)	132 (4.3)	0.08
	Yes	119495 (93)	8998 (7.0)	

Variable	Class	Sought assistance		P
		No (n = 122453) n (%)	Yes (n = 9130) n (%)	
Patient/practice status	Existing patient	53458 (93)	3894 (6.8)	0.018
	New to trainee	57513 (93)	4269 (6.9)	
	New to practice	8067 (92)	691 (7.9)	
New problem	No	61242 (94)	4005 (6.1)	<0.0001
	Yes	61211 (92)	5125 (7.7)	
Chronic condition	No	94474 (93)	7129 (7.0)	0.92
	Yes	27596 (93)	1986 (6.7)	
Pathology ordered	No	101929 (93)	7224 (6.6)	<0.0001
	Yes	20524 (92)	1906 (8.5)	
Imaging ordered	No	114032 (94)	7864 (6.5)	<0.0001
	Yes	8421 (87)	1266 (13)	
Follow-up ordered	No	69271 (95)	3739 (5.1)	<0.0001
	Yes	53182 (91)	5391 (9.2)	
Learning goals	No	108203 (96)	4731 (4.2)	<0.0001
	Yes	14250 (76)	4399 (24)	
Referral ordered	No	108748 (94)	6984 (6.0)	<0.0001
	Yes	13705 (86)	2146 (14)	
Trainee age	Mean (SD)	33.0 (6.7)	33.0 (6.8)	<0.0001
SEIFA Index	Mean (SD)	5.4 (2.8)	5.3 (2.9)	0.72
Consultation duration	Mean (SD)	18.0 (9.4)	24.0 (12.0)	<0.0001
Number of problems	Mean (SD)	2.0 (1.0)	1.8 (0.9)	<0.0001

Numbers may not add up to 131 583 due to missing data.

Care should be used when interpreting frequencies in this table. This analysis uses problems and not encounters as the population unit, and as such the reported frequencies at the problem-level may not reflect the observed frequencies at the subject-level.

*Practice defined as small if ≤5 GPs were working in the practice.

Interpretation of findings and comparison with existing literature

Frequency of information- and advice-seeking

The rate of information-seeking from the trainer of 6.9% equates to about one in 14 problems managed. There are many other sources of information that trainees can access to enhance patient care apart from trainer input, for example, clinical guidelines, which we have not presented. As well, we only describe 'in-consultation' assistance and not episodes of trainer involvement after the encounter. However, our findings of relatively low access of in-consultation trainer information- and advice-seeking, especially for more junior trainees, are cause for reflection.

Nature of information- and advice-seeking

We have found that trainees seek information or advice from trainers about management substantially

more commonly than for diagnosis. This is somewhat surprising and contrary to the findings in the only comparable study looking at 'ad hoc' teaching of trainees.¹⁴ It also contrasts with the general information-seeking behaviour of established GPs, where clinical questions relate more to diagnosis than management.^{8,21} We would have expected that diagnosis would be a more common reason for information- and advice-seeking. For the inexperienced clinician, diagnosis represents a more complex cognitive process than management, involving weighting and synthesis of various pieces of information, while management can often be guided by straightforward algorithms (i.e. guidelines) accessed via electronic or hard-copy non-human sources of information. However, it may be that decisions around management are more challenging for trainees, in that they lack the experience of established GPs in applying straightforward guidelines to sometimes complex patient contexts.

Skin was the most common disease chapter heading for which information or advice was sought. This is similar to a previous study which found skin and musculoskeletal problems to be the most common reasons for seeking information or advice

Table 3 Logistic regression model of information- and advice-seeking from the GP trainer

Variable	Class	Univariate		Adjusted	
		OR (95% CI)	P	OR (95% CI)	P
Patient age group <i>Referent: 15–34</i>	0–14	1.26 (1.17, 1.36)	<0.0001	1.31 (1.21, 1.41)	<0.0001
	35–64	1.02 (0.96, 1.08)	0.58	1.06 (1.00, 1.13)	0.067
	65+	1.11 (1.03, 1.20)	0.0041	1.29 (1.19, 1.40)	<0.0001
Patient gender	Female	0.86 (0.82, 0.90)	<0.0001	0.87 (0.83, 0.91)	<0.0001
Trainee gender	Female	1.19 (0.95, 1.48)	0.12	1.28 (1.03, 1.59)	0.026
Training term/post <i>Referent: Term 1</i>	Term 2	0.52 (0.47, 0.58)	<0.0001	0.60 (0.53, 0.67)	<0.0001
	Term 3	0.32 (0.25, 0.40)	<0.0001	0.43 (0.34, 0.53)	<0.0001
	Term 4	0.22 (0.17, 0.28)	<0.0001	0.27 (0.20, 0.37)	<0.0001
Post grad qualifications	Yes	1.15 (0.94, 1.41)	0.18	0.94 (0.75, 1.17)	0.56
Practice routinely bulk bills	Yes	0.81 (0.63, 1.05)	0.12	0.78 (0.59, 1.04)	0.087
RTP <i>Referent: 1</i>	2	1.17 (0.86, 1.59)	0.32	1.61 (1.14, 2.28)	0.0072
	3	1.50 (1.12, 2.01)	0.0067	1.10 (0.81, 1.49)	0.54
	4	1.51 (1.22, 1.87)	0.0002	1.79 (1.42, 2.24)	<.0001
Internet at desk	Yes	1.72 (0.94, 3.16)	0.08	0.95 (0.57, 1.56)	0.83
Patient/practice status <i>Referent: existing patient</i>	New to practice	1.03 (0.92, 1.14)	0.61	0.80 (0.72, 0.89)	<.0001
	New to trainee	0.92 (0.87, 0.98)	0.012	0.91 (0.85, 0.97)	0.0048
New problem	Yes	1.25 (1.19, 1.32)	<0.0001	1.17 (1.11, 1.23)	<0.0001
Imaging ordered	Yes	2.06 (1.92, 2.22)	<0.0001	1.32 (1.22, 1.43)	<0.0001
Follow-up ordered	Yes	1.77 (1.65, 1.91)	<0.0001	1.24 (1.15, 1.34)	<0.0001
Learning goals	Yes	6.63 (6.05, 7.26)	<0.0001	4.60 (4.10, 5.16)	<0.0001
Referral ordered	Yes	2.31 (2.16, 2.47)	<0.0001	1.48 (1.38, 1.60)	<0.0001
Trainee age		0.94 (0.91, 0.97)	<0.0001	0.96 (0.94, 0.98)	<0.0001
Consultation duration		1.04 (1.04, 1.05)	<0.0001	1.05 (1.04, 1.05)	<0.0001
Number of problems		0.78 (0.74, 0.82)	<0.0001	0.70 (0.67, 0.74)	<0.0001

from the trainer.¹⁴ This is likely to reflect overall disease prevalence and rate of presentation. It is also likely to reflect trainees' previous experience, such as the limited exposure to, and training in, these conditions in the hospital setting, as well as the different epidemiology of such presentations in community practice compared to hospital practice.

Associations of information- and advice-seeking

Generation of clinical questions by GPs has been shown in previous studies to be independently related to a number of factors, including older patient age and female patient gender;²² younger doctor age; rural practice; and smaller practice.²³ Though the outcome factor in our study was in-consultation information- and advice-seeking from the trainer, not question generation per se, guarded comparison may be made. While some of our findings are consistent with previous studies, we found that trainees sought trainer help more commonly for male patients and there were no associations with practice factors.

Our study demonstrated that with increasing experience, trainees call on their trainer less frequently. These findings likely reflect increasing maturity and confidence in trainee practice, moving towards the self-directed information-seeking of the independent practitioner. Information-seeking needs have been previously found to decrease with experience, particularly in the case of trainees new to the discipline.²⁴

The difference in prevalence of information- and advice-seeking between RTPs, which persisted after adjustment for potential confounding, is unexpected. This may reflect a difference in 'culture' between the regions, or may reflect aspects of policy (RTPs have different programmes of trainer professional development). There is no benchmark for optimal rates of seeking assistance but, given the educational and patient safety implications of information- or advice-seeking on the one hand and the workforce implications on the other, the disparity is worthy of further exploration.

The associations with longer consultations, and with more imaging, referrals and follow-up generated are consistent with trainer assistance being sought

for more complex problems. The strong association of in-consultation assistance-seeking from the trainer with subsequent generation of learning goals (despite there also being an association with specialist referral for the problem) suggests that trainees may be taking an active educational approach to learning from clinical exposure rather than a passive help-seeking approach.

Strengths and limitations

This is the first study to document the frequency of information- and advice-seeking in the apprenticeship model of general practice training, as well as the first to contemporaneously record in-consultation information- and advice-seeking in general practice. While there is a substantial literature concerning information-seeking behaviour of clinicians generally,⁴ there have been relatively few studies on the use of information-seeking for immediate patient care *within* the consultation. Furthermore, previous studies have often assessed proportions of clinicians who use particular information sources rather than documenting actual information-seeking behaviour.⁴ Problem-orientated information related to the care of the individual patients has been described as the predominant factor to prompt information-seeking by GPs.²⁵ Thus, an understanding of real-time in-consultation information-seeking is important.

Other strengths of our study were the response rate (94.3%) which is singularly high for studies of GPs.²⁶ As well, we had a large sample size and a sample frame of regional training providers across four Australian states, encompassing all urban/rural classifications from major city to very remote locations. Our trainee demographic closely approximates that of the national trainee population.²⁷ A further strength of the study was the contemporaneous recording of in-consultation assistance-seeking, minimising recall bias.

One limitation, especially in terms of implications for trainer workforce and clinical care delivery issues (see below), is that we have documented the prevalence of, but not the time taken for, trainees' information- and advice-seeking from their trainers. And, while we have documented the generation of learning goals, this may not necessarily equate to active information-seeking post-consultation.

Another limitation is that we did not collect any data on GP trainer characteristics, which is an important potential determinant of information-seeking by GP trainees.

Implications for practice and policy

Educational policy

Vocational training programmes need to base clinical supervision policy and trainer professional development programmes on available evidence.

It has been stated that 'training programs and clinical educators should not take for granted timely requests for clinical support'.¹⁰ Our finding that trainees seek information or advice in less than 7% of encounters supports this. A framework for improving transparency in the trainer-trainee supervision alliance has been proposed which highlights the importance of explicitly teaching trainees strategies for information-seeking from trainers.¹⁰ We recommend a trial of this model in Australian GP training.

A four-stage model of clinical supervision has been described which mandates the routine review by the GP trainer of every patient seen by the junior doctor in the initial stage of the placement.²⁸ This model is used for junior doctor rotations into general practice,²⁹ learners often with similar experience to new GP trainees, but the model is not mandated in Australian general practice training. Our findings of relatively infrequent information- and advice-seeking of trainees from trainers in the apprenticeship model of Australian vocational training highlights the critical importance of other complementary mechanisms to ensure identification of learning needs (including 'unknown unknowns' not elicited by trainee-initiated in-consultation information-seeking), quality care and patient safety. This has been described as 'clinical oversight' and comprises activities like consultation observation, problem case review and random case analysis.³⁰

The finding that skin diseases and musculoskeletal problems are those which elicit the majority of information- or advice-seeking highlights the need for GP trainer professional development on how to best teach these topics.

Financial and workforce implications

In this study we have, for the first time, quantified the extent to which trainers are 'interrupted' in their own clinical practice to attend to the educational needs of their trainees. This has implications for how GP trainers arrange their own clinical workload and the resources needed for training. There are financial and (trainer) clinical care implications of trainees' information- and advice-seeking. Our description of the rates and nature of information- and advice-seeking may inform practices' decisions about taking on GP trainees and also inform decisions regarding appropriate remuneration of trainers for their supervision role.

Implications for future research

Our findings raise many questions for further research. Auditing the specific clinical questions that trainees ask their GP trainers could inform training programme curricula, especially a further exploration of diagnosis versus management-related clinical questions. The triggers of, barriers to and enablers for vocational general practice trainees calling for trainer assistance are important areas of enquiry.

This includes documentation and analysis of GP trainer characteristics such as experience, attitude and availability. Such issues may inform trainer professional development programmes. In terms of workforce and financial implications, further research that quantifies time taken for information-seeking (on the part of trainees and their trainers) is required to expand upon the frequency of assistance-seeking that we have documented. The reasons for the disparity in assistance-seeking between RTPs are also a suitable topic for future research, and whether similar rates occur in countries with similar models of GP training.

CONCLUSION

We have documented the prevalence of information- and advice-seeking in GP trainees' practice from their trainer; the nature of information accessed; and factors (trainee, practice, patient and consultation) associated with that information-seeking. These findings have potential implications for teaching and learning, trainer workload, training programme evaluation and, ultimately, trainees' transition to independent practice.

Acknowledgements

The authors would like to acknowledge the GP registrars, GP supervisors and practices who have participated in the ReCEnT project.

Ethical approval

Ethical approval for the study was obtained from the Human Research Ethics Committee, University of Newcastle – HREC Approval – H-2009-0323.

MESH terms

General practice; family practice; education, medical, graduate; information seeking behaviour.

Funding

This analysis was funded by a research grant from General Practice Education and Training Ltd (GPET). GPET manages general practice training programmes on behalf of the Australian Government, including the Australian General Practice Training (AGPT) programme, which provides vocational training in general practice.

Declarations of interest

Dr Wearne is employed by GPET.

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Accepted 19/12/2014