

Predictors of the provision of intrapartum care by general practitioners: five-year cohort study

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SUMMARY

Background. There is little published evidence that any aspect of vocational training for general practice improves the quality of care provided by general practitioners (GPs).

Aim. To investigate whether aspects of education and vocational training predict whether GPs provide intrapartum care.

Method. A five-year prospective cohort study was carried out in the United Kingdom (UK) using responders to a 1990 national survey of GPs for whom a current UK address could be found. Main outcome measures were factors associated with provision of GP intrapartum care in 1995.

Results. In 1995, a minority of ex-trainees (65 out of 349, 18%) provided intrapartum care as GPs, although 28% would ideally have wished to do so; 8% provided home delivery care. Four education and training variables were associated with ex-trainees booking women for GP delivery in 1995: the number of partners in the ex-trainee's GP training practice providing GP intrapartum care (odds ratio (OR) = 1.30); performing forceps deliveries as an obstetric senior house officer (SHO) (OR = 1.24), witnessing episiotomies as a student (OR = 1.17), and witnessing twin deliveries as a student (OR = 0.75).

Conclusions. In the case of GP intrapartum care, future service provision is associated with certain education and training variables. There is a mismatch between GPs' ideal and actual maternity care provision. Changes to enhance such care would be needed at least at three levels: selection and approval of training practices, content and base for SHO posts, and practice arrangements for maternity cover.

Keywords: intrapartum care; vocational training; service provision.

Introduction

VOCATIONAL training for general practice became a statutory requirement in 1982, following decades of increasing pressure.¹⁻³ There is little published evidence that it has improved care. This study investigated whether there was any relationship between education and vocational training and service provision by GPs.

General practitioner intrapartum care was chosen for four reasons. First, obstetric training has always been a prominent part of GP vocational training.^{1,3} Secondly, GP intrapartum care provision is declining,⁴ despite nearly universal hospital obstetric senior house officer (SHO) training,⁵⁻¹¹ which may have negative effects.¹²⁻¹⁶ Thirdly, various papers have reported adversely on SHO posts,^{5-7,17} including obstetric ones.^{10,18-21} Fourthly, GP involvement in labour care as part of family medicine is important.

Many (15-45%)²²⁻²⁴ GPs wish to provide intrapartum care and

many women desire such care,²⁵ which enhances its continuity, choice, and quality;^{26,27} GPs can enable women to choose home birth.²⁸ Those women who have experienced GP-led care value it²⁶ and agree that GPs have an important role in labour care.²⁵ GPs contribute to clinical decisions, such as intrapartum transfer,²⁹ and keep transfer rates lower³⁰ than midwife-only-led care,³¹ thus reducing disruption for women and restraining health care costs. Unexpected emergencies around the time of labour which require medical assistance occur in 12% of low-risk pregnancies.³² Where GPs are refusing to provide intrapartum care support to community maternity units, these units may be closed (S Purves, personal communication). Both the Winterton³³ and *Changing Childbirth*²⁶ reports state that GPs should be enabled to provide, and rewarded appropriately for providing, intrapartum care; both reports foresaw a continued role for some GPs in intrapartum care.

A 1990 national survey of GP trainees was performed, and responders were traced five years later. This study reports one aspect of the present service provision (intrapartum care) of those now working in general practice, and investigates its relationship with education and training.

Method

The original study population comprised all GP trainees in the UK who were on vocational training schemes or in training practices in late 1990. Their names and addresses were obtained from course organizers and regional advisers in general practice. A random one-in-four sample of these was sent a confidential postal questionnaire in the autumn of 1990.^{8,16} The study population for this survey included all responders to the 1990 survey. The 1995 survey sample comprised all identifiable ex-trainees who had responded to the 1990 survey and for whom a current UK address could be found. Four sources were used to obtain their current addresses: the 1994 Medical Directory (on CD-ROM), the 1995 course organizers of the original vocational training scheme that had initially supplied the ex-trainee's 1990 mailing address, and the trainee's 1990 training practice or hospital.

The survey questionnaires asked for information that might be expected to affect (ex-) trainees' (present) future provision of intrapartum care as GPs (see below). Competence and beliefs were measured using seven-point Likert scales, which were treated as continuous variables. Univariate analysis was performed using a chi-square test with continuity correction. Some responders did not answer all questions.

Two logistic regression models were built for whether the ex-trainee now booked women for GP intrapartum care. This technique describes a relationship between a dichotomous dependent variable and a set of explanatory (independent) variables. Explanatory variables were grouped as follows: model 1 included at step 1 demographic variables, undergraduate education, postgraduate obstetric training, postgraduate neonatal education, and GP training practice experience; model 2 added relevant beliefs and competencies, both in 1990 and in 1995, and present practice characteristics (full list of all variables available from author). In each model, explanatory variables were tested in these groups ($P_{in} = 0.10$ and $P_{out} = 0.11$), and those found to be

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significant were then included in a final model analysis. ($P_{in} = 0.05$ and $P_{out} = 0.06$).

External reliability for the Likert scales was fair, ranging from 0.25 to 0.45. They possess face, content, and construct validity.^{8,16,34,35} Accuracy of data entry was 97.1%. The misidentification rate of GP trainees was 1% (4 out of 443).

Results

In 1990, 765 (75.1% of 1019) of a random one-in-four national sample of GP trainees returned a confidential postal questionnaire. In 1995, current UK addresses could be identified for 590 (77.4%) of these responders, and 49 (6.4%) were known to be abroad (83.9% identification of 1990 responders); usable replies were received from 439 ex-trainees (response rate = 74.4%, corrected for those abroad). There were no significant differences between the four groups (responders; non-responders; known to be abroad in 1995; no trace) in terms of their intention to enter general practice, the type of intrapartum care they intended to provide as a GP, and whether provision of labour facilities would be an important incentive in joining a practice (Table 1). Thus, responders are representative of the original responders with respect to their intention to provide intrapartum care as GPs.

Provision of intrapartum care

Of 439 ex-trainees identified as resident in the UK in 1995, 349 were found to be working in general practice and 71 were not (19 not known). Of the 349 working in general practice, 65 (18.6%) were providing some type of intrapartum care: 36 only in hospital, 16 only at home, and 13 both. Twenty-one were providing care in an integrated GP unit, seven in an alongside GPU, and 21 in an isolated GP unit. Of those booking women for delivery in an isolated GPU, nine booked 1–10 women annually, nine booked 11–20, one booked 21–30, and two booked >30. The corresponding figures for alongside unit bookings were four, one, one, and one; and for integrated unit bookings were 12, seven, one, and one.

Of 332 ex-trainees, 93 (28.0%) stated that they would ideally wish to provide intrapartum care and 42 (12.7%) would wish to provide home delivery care in the future (17 not known). Of those 63 (two not known) providing any intrapartum care in 1995, only 48 (76.2%) would ideally do so in the future, compared with 43 (16.1%) of 267 of those who are not providing any labour care at present ($\chi^2 = 90$, $df = 1$, $P < 0.0001$). Of those 29

providing home delivery care at present, in 1995 most (20, 69.0%) wished to do so in the future, compared with 22 (7.3%) of 303 who did not provide domiciliary care in 1995 ($\chi^2 = 91$, $df = 1$, $P < 0.0001$).

Practical procedures performed

Of 65 ex-trainees providing labour care, 10 (15.4%) usually did not annually attend any women for delivery, 27 (41.5%) attended 1–2, 12 (18.5%) attended 3–5, nine (13.8%) attended 6–10, five (7.7%) attended 11–20, and two (3.1%) attended 21–30. Both those GPs providing home delivery care only and those also providing hospital care attended a median of three deliveries each. The various practical procedures that these doctors provided in an 'average' year are shown in Table 2.

Predictors of booking women for intrapartum care

Four education and training variables were associated with ex-trainees booking women for GP delivery in 1995 (Table 3, model 1). The more partners in the ex-trainee's GP training practice who provided GP intrapartum care, the more likely it is that the ex-trainee now provides such care (OR = 1.30). Performing forceps deliveries (OR = 1.24) as an obstetric SHO and witnessing episiotomies as a student (OR = 1.17) were also positively associated. Attending twin deliveries as a student was negatively associated (OR = 0.75).

The addition of beliefs, competencies, and 1995 practice variables added five variables to the model and eliminated three (Table 3, model 2). The number of partners providing labour care in the original practice was the only variable to remain from the first model. Being a principal in 1995 was the strongest predictor (OR = 13.82). The larger the 1995 practice, the less likely it was that the ex-trainee now provided labour care (OR = 0.54), although the opposite trend was found with the number of partners who provided labour care in 1995 (OR = 2.92). Believing, in 1995, that GPs are unimportant in both normal (OR = 0.66) and abnormal (OR = 0.69) labour was associated with not providing labour care.

Discussion

This is the first published study to demonstrate a relationship between any element of British GP vocational training and service provision by GPs. The training practice environment is crucial: being exposed to the role model of GPs providing intrapartum care leads to trainees providing such care themselves, as had previously been theoretically suggested¹² and then found to be

Table 1. Respondents (GP1) to 1995 survey compared with non-responders (GP2), 1990 responders not traceable in 1995 (GP3), and 1990 responders known to be abroad in 1995 (GP4). Figures are percentages for responses to the three questions in 1990.

		GP1	GP2	GP3	GP4	n
Intention to enter general practice when finish GP training: (five missing values)	Definitely yes	56.6	50.3	49.6	51.0	408
	Possibly yes	26.7	24.5	29.1	26.5	202
	Undecided	11.4	16.8	15.0	20.4	103
	Definitely/possibly no	5.3	8.4	6.3	2.0	44
	Group totals	438	143	127	49	757
Type of intrapartum care intend to provide as GP: (13 missing values)	None	60.2	69.0	63.5	63.3	469
	Hospital only	31.9	25.4	31.0	24.5	225
	Home +/- hospital	7.9	5.6	5.6	12.2	55
	Group totals	432	142	126	49	749
Will provision of labour facilities be important in joining a practice: (83 missing values)	Strong incentive	5.1	3.9	6.0	11.9	37
	Some incentive	33.6	33.9	35.9	33.3	231
	Irrelevant	33.8	33.9	32.5	23.8	224
	Some disincentive	17.8	17.3	17.9	26.2	124
	Strong disincentive	9.7	11.0	7.7	4.8	63
Group totals	393	127	117	42	679	

Table 2. Number of practical procedures performed by ex-trainees now providing intrapartum care in general practice ($n = 65$).

Procedure	None	%	1-2	3-5	6-9	10-19	20+
	<i>n</i>		<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Vaginal examination in labour	27	42	22	9	3	2	2
Forewater rupture to accelerate labour	46	71	14	4	1	-	-
Perform normal delivery unaided	49	75	11	4	1	-	-
Interpret labour cardiocographs	41	63	13	4	4	2	1
Augment labour with syntocinon	56	86	6	2	1	-	-
Induce labour for post-maturity	54	83	9	2	-	-	-
Low forceps for delay in second stage	55	85	8	2	-	-	-
Suture second-degree perineal tear	28	43	27	3	6	1	-
Manage severe postpartum haemorrhage	51	79	13	1	-	-	-
General resuscitation of 'flat' neonate	42	65	22	1	-	-	-
Intubate 'flat' neonate	60	92	5	-	-	-	-
Set up peripheral ivi on neonate	62	95	3	-	-	-	-

Table 3. Present provision of any intrapartum care: independent variables contributing significantly to models (0 = no labour care; 1 = any labour care provided).

Description of variable	Model 1*				Model 2*			
	B*	SE	OR	95% CI OR	B*	SE	OR	95% CI OR
Number of episiotomies witnessed as an undergraduate	0.15	0.07	1.17	(1.01-1.33)				
Number of undergraduate vaginal twin deliveries witnessed	-0.29	0.11	0.75	(0.60-0.93)				
Number of trainer's partners in only or main training practice who provided labour care	0.26	0.06	1.30	(1.15-1.46)	0.23	0.09	1.26	(1.06-1.50)
Number of low forceps deliveries performed as an SHO	0.22	0.06	1.24	(1.11-1.40)				
1995 belief that GPs do <i>not</i> have an important role in abnormal labour					-0.37	0.13	0.69	(0.54-0.89)
1995 belief that GPs do <i>not</i> have an important role in normal labour					-0.42	0.14	0.66	(0.50-0.86)
Number of partners in present practice					-0.62	0.18	0.54	(0.38-0.77)
Number of partners who provide intrapartum care					1.07	0.14	2.92	(2.22-3.84)
Presently a principal (vs assistant or locum)					2.63	0.68	13.82	(3.66-52.6)
Constant	-3.27	0.50			-0.38	0.95		

B*, partial regression coefficient; SE, standard error of B; OR, odds ratio. Model 1 chi-square = 52.25, $n = 317$, $df = 4$, $P < 0.0001$; it correctly predicts 83.9% of actual GP intrapartum care provision. Model 2 chi-square = 198.25, $n = 342$, $df = 6$, $P < 0.0001$; it correctly predicts 90.9% of actual GP intrapartum care provision. *See Method section for explanatory variables entered into models.

so in a cross-sectional survey of Canadian family physicians.³⁵ Those approving practices could make it a requirement that at least one partner provides intrapartum care and that trainees are encouraged to attend women in labour. Certainly, some GP registrars would appreciate knowing of nominated GP obstetrician trainers with whom interested registrars could work.¹⁶

Adequate exposure to the role model is not sufficient however. The ex-trainees' present practice also has influence. As found in Canada,³⁵ the bigger the practice, the less likely ex-trainees are to provide labour care, but the more partners that do provide such care then the more likely the ex-trainees are to do so. This is an expected finding because it is still the norm (personal observation) for practices to provide intrapartum care or not. In other words, either all partners do or none do so. Thus, the finding that fewer younger GPs (i.e. more junior partners) provide intrapartum care than older GPs is of concern.^{22,23} If this trend were to continue, then it would soon be the case that the number of partners who are willing to provide such labour care is insufficient for the practice as a whole to do so. This means that in an individual practice all that might be required is for one more (replacement) partner to decline to provide labour care for all the other partners to be forced to withdraw, reducing women's choice and the quality of maternity care.

There is a mismatch between the type of intrapartum care that

GPs are providing now and what they would ideally like to provide. A total of 18.6% are providing intrapartum care at present, but 28% would ideally like to do so; of those that are doing so, only three quarters would like to continue and one in six of those not providing such care want to start. A possible solution to the mismatch would be inter- rather than intra-practice obstetric rotas, similar to co-operatives but just including those GPs in an area who wished to provide labour care. This assumes that those who wish to opt out, or who do not provide labour care at present, are fully informed about the safety of GP intrapartum care⁴ and about the desire of many women to be cared for jointly by their GP together with their midwife.²⁵

Training of future GPs during hospital obstetric senior house officer posts has previously been criticized as being irrelevant, focused too much on the abnormal, lacking supervision and teaching, and discouraging of future labour care.^{5-8,17} Suggestions for improvements have been made,^{8,16,36} including more community-based teaching, focusing on the normal, and teaching by midwives and GPs. Such changes would be consistent with changes in service and teaching within the National Health Service (NHS), with more community-based maternity care²⁶ and the increasing undergraduate community teaching base. It would make sense for post-graduate education (SHO posts), like undergraduate education,^{37,38} to comprise core sessions and elective sessions, which could

include labour ward experience, community placements, or community hospital attachments. Thus, future GPs could choose to experience training that was more relevant to their future needs.

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