

Recruiting and retaining general practitioners to a primary care asthma-intervention study in Australia

Smita Shah^{A,B,I}, Jessica K. Roydhouse^C, Brett G. Toelle^{B,D}, Craig M. Mellis^B,
Christine R. Jenkins^{B,D}, Peter Edwards^E and Susan M. Sawyer^{F,G,H}

^APrimary Health Care Education and Research Unit, Sydney West Local Health District, Sydney, NSW 2145, Australia.

^BSydney Medical School, University of Sydney, Sydney, NSW 2006, Australia.

^CSydney Nursing School, CNRU, University of Sydney, Sydney, NSW 2006, Australia.

^DWoolcock Institute of Medical Research, Glebe, NSW 2037, Australia.

^EHolroyd Medical Practice, Merrylands, NSW 2160, Australia.

^FDepartment of Paediatrics, The Royal Children's Hospital, Melbourne, Vic. 3052, Australia.

^GMurdoch Children's Research Institute, Melbourne, Vic. 3052, Australia.

^HCentre for Adolescent Health, The Royal Children's Hospital, Melbourne, Vic. 3052, Australia.

^ICorresponding author. Email: smita_shah@wsahs.nsw.gov.au

Abstract. The need for more evidence-based interventions in primary care is clear. However, it is challenging to recruit general practitioners (GPs) for interventional research. This paper reports on the evaluation of three methods of recruitment that were sequentially used to recruit GPs for a randomised controlled trial of an asthma communication and education intervention in Australia. The recruitment methods (RMs) were: general practices were contacted by project staff from a Department of General Practice, University of Sydney (RM1); general practices were contacted by staff from an independent research organisation (RM2); and general practices were contacted by a medical peer (chief investigator) (RM3). A GP was defined as 'recruited' once they consented and were randomised to a group, and 'retained' if they provided baseline data and did not notify staff of their intention to withdraw at any time during the 12-month study. RM1 was used for the first 6 months, during which 34 (4%) GPs were recruited and 21 (62%) retained from a total of 953 invitations. RM2 was then used for the next 5 months, during which 32 (6%) GPs were recruited and 26 (81%) were retained. Finally over the next 7 months, RM3 recruited 84 (12%) GPs and retained 75 (89%) GPs. In conclusion, use of a medical peer as the first contact was associated with the highest recruitment and retention rate.

Additional keywords: general practice, intervention studies, recruitment.

Received 17 July 2012, accepted 27 November 2012, published online 21 December 2012

Introduction

Research about different recruitment methods (RMs) to engage general practitioners (GPs) in educational interventions is limited (Foy *et al.* 2003). What is apparent is that delays in recruitment greatly add to the cost of intervention studies and threaten the results by insufficient power from insufficient sample size. Investigators have been urged to incorporate evaluations of recruitment strategies into study appraisals in an effort to obtain more evidence about the effectiveness of recruitment methods (Watson and Torgerson 2006). Such evaluations can help researchers obtain information regarding recruitment for studies similar to theirs (Jones *et al.* 2011).

Primary care research involving GPs spans a variety of different types of studies. In terms of the level of GP engagement in the research, these studies can be broadly classified into two

major types: where the primary role of the GP is to help recruit patients, or where the role of the GP is to participate in an educational intervention program as well as recruit patients (Pearl *et al.* 2003). While the specific level of involvement may differ within each type, it is evident that a far greater level of participation by GPs is required for intervention studies.

Notwithstanding the importance of intervention studies in general practice, recruiting GPs for interventional research is often challenging, especially when the GP's active participation is central to the research (van der Wouden *et al.* 2007). Trials have failed (Tognoni *et al.* 1991) or have had to extend their recruitment period due to difficulties faced in enrolling GPs (Yallop *et al.* 2006). For example, a survey of published UK primary care trials found that only a minority of trials successfully recruited the required number of participants within

the projected timeline (Bower *et al.* 2007). Time constraints due to other commitments like audits and mass vaccinations can often hinder doctors' participation in research (Asch *et al.* 2000; Rosemann and Szecsenyi 2004; Minas *et al.* 2005; Goodyear-Smith *et al.* 2009). Australian GPs do not rate financial rewards as a reason to join a research project; however, financial incentives can support a practice's loss of time. There are also project-related and topic-related reasons why GPs do not participate, such as an overly complex research design or a disease area that is considered too sensitive, such as childhood obesity (Jones *et al.* 2011, 2012).

This paper describes an observational study of three different approaches that were sequentially used in a randomised controlled trial to recruit GPs for the Practitioner Asthma Communication and Education (PACE) Australia study (Shah *et al.* 2011).

Methods

The PACE Australia study aimed to recruit 120 GPs within a 6-month period in Western Sydney from a cohort of 953 GPs registered with the four local Divisions of General Practice. All GPs were eligible for recruitment unless they had participated in the earlier pilot study (Shah *et al.* 2010) or were planning to retire within the next year. Initially only one GP per practice was recruited to reduce the effect of clustering.

GP participation in the trial consisted of: (i) completion of a questionnaire at baseline and at 12 months; (ii) participation in the PACE intervention, either soon after recruitment in the intervention arm or after completing the 12-month questionnaire in the control arm; and (iii) identifying paediatric asthma patients, either through electronic patient records, written records and/or knowledge of patients. GP participation in patient recruitment was limited to patient identification and signing prepared study invitation letters; research staff sent out the letters and made the preliminary screening phone call to the family of the patient.

The intervention

The PACE intervention consisted of two 3-h interactive workshops facilitated by a community physician, paediatric respiratory physician and a locally known GP. The details of the program have been published elsewhere (Shah *et al.* 2011). Participating GPs received Continuing Professional Development points from the Royal Australian College of General Practitioners.

Definitions of interest, recruitment and retention

All GPs listed in a GP Division database were contacted with a study invitation letter, an information flyer and an Expression of Interest form. A GP was defined as 'interested' when the contacted GP faxed back an Expression of Interest form or sent an email to the research team requesting additional information about the study. 'Interested' GPs were defined as 'recruited' once they formally consented and were subsequently randomised to intervention or control (delayed) arms. 'Recruited' GPs were defined as 'retained' if they completed a questionnaire about their asthma management practices and communication behaviour at baseline (Roydhouse *et al.* 2011) and did not notify staff of their intention to withdraw at any time during the study.

Recruitment approaches

Due to slower than anticipated recruitment of GPs in the first 6 months, the recruitment period was extended by a further 12 months. In addition, the inclusion criteria were modified to enable more than one GP per practice to be recruited and the catchment area was extended to Central Sydney after 12 months. Three different approaches were used sequentially to recruit the GPs required for the study. In each approach, initial contact was made using a combination of invitation letter, email and/or fax. GPs faxed back an Expression of Interest form or contacted the research team by telephone to participate in the study. Staff visited the GP practices to further explain the study, obtain GP consent and a list of children aged 2–14 years with asthma. The key difference in each method was who led and delivered the recruitment strategy, specifically the telephone call and face to face GP practice visit.

RM1: project staff from a Department of General Practice, University of Sydney

A list of GP names and addresses were provided by the four local GP Divisions in the Western Sydney region. A Division has GP members from specific geographic areas and offers programs and services for its participants (Williamson *et al.* 2007). An invitation letter was sent to each GP on the provided list. The study was also advertised in the Division's newsletter and at local GP meetings. After receiving an expression of interest, PACE staff visited the practice manager and the GP to further explain the study, and to obtain consent and a patient list. Staff commonly had difficulty making an initial appointment with the GP and, despite the appointment time, often required a long wait before meeting the GP. At times the project staff had to leave without meeting the GP.

RM2: staff from an independent GP research organisation

After 6 months of poor responses from the GPs, the recruitment was outsourced to a Western Sydney GP research group, initiated by three GP leaders, for 5 months. The same invitation letter or fax was sent to GPs listed in their database. As in RM1, following a returned Expression of Interest form, the GP research group's project manager visited the practice manager and the GP. At that time the recruitment criteria were relaxed to include more than one GP per practice.

RM3: medical peer (chief investigator)

After 12 months, the study was extended to include an additional Divisional area, the Central Sydney General Practice Network. As before an initial fax or email invitation was sent to GPs listed in the database of the two Divisions of General Practice. A personalised invitation letter, signed by the heads of the Division of General Practice and the chief investigator (CI), was also sent. As in RM1 and RM2, GPs faxed back an Expression of Interest form or emailed, if interested. However the CI, a medical peer, made the appointments directly with interested GPs and visited each of their practices with the research officer. The CI also contacted the GPs who had previously expressed interest under RM1 but who had not yet enrolled in the study.

Data analysis

The total number of GPs contacted for each approach was calculated by adding the total number of faxes and letters sent (this number was provided by either the Division or the local GP organisation), plus any other recorded numbers contacted (e.g. the number of personal contacts). All statistical analyses were conducted using SPSS, version 15 (SPSS Inc., Chicago, IL, USA).

Results

Recruitment and retention

During RM1, 953 GPs were contacted, of whom 38 were interested and 36 were recruited (Table 1). During RM2, 575 GPs were contacted, of whom 34 were interested and recruited. Lastly, during RM3, 681 GPs were contacted, of whom 94 were interested and 82 were recruited.

Fourteen interested GPs were turned away during RM1 due to the restriction of recruiting only one GP per practice. Three of these were subsequently recruited during RM3.

The recruitment rate for the three methods was seven GPs per month for RM1 (6-month recruitment period), seven GPs per month for RM2 (5-month recruitment period) and 12 GPs per month for RM3 (7-month recruitment period).

In RM3, the primary area of focus was Central Sydney, from which 70 GPs (81%) were recruited in comparison to only 16 from Western Sydney (19%). In RM3 recruits from Western Sydney were also GPs who had been turned away under RM1, as well as personal GP contacts of the CI. Furthermore, fewer Western Sydney GPs withdrew under RM3 than under the others, with only 1 of 16 (6%) withdrawing under RM3, compared with 7 of 34 (21%) under RM2 and 19 of 37 (51%) under RM1.

Characteristics of recruited GPs

The demographic characteristics of the participants across the three different recruitment methods are shown in Table 2.

Table 1. Interested, recruited, and retained participants, by recruitment method (RM)

	RM1	RM2	RM3
Recruitment period	Sep. 2006–Feb. 2007	Apr. 2007–Sep. 2007	Nov. 2007–Apr. 2008
GPs contacted (<i>n</i>)	953	575	681
Interested			
<i>n</i>	51	33	103
% contacted ^A	5.4	5.7	15.0
Recruited			
<i>n</i>	34	32	84
% contacted ^A	3.6	5.6	12.3
% interested ^B	67	97	82
Retained			
<i>n</i>	21	26	75
% recruited ^C	62	81	89

^ADenominator is number of GPs 'contacted', i.e. were sent a study invitation flyer.

^BDenominator is number of GPs 'interested', i.e. returned an Expression of Interest form.

^CDenominator is number of GPs 'recruited', i.e. formally consented and were subsequently randomised.

Across all three recruitment methods 57% of GPs were Fellows of the Royal Australian College of General Practitioners and 86% were in group practices. There were more women than men within RM1 and RM3. Fewer GPs who completed the baseline questionnaires within RM1 (62%) were 'retained' compared with RM2 (81%) and RM3 (89%).

The recruited PACE GP had been in practice for a mean of around 20 years, which was similar across the three recruitment methods. In this respect, the PACE GPs were similar to the GPs participating in the national Bettering the Evaluation of Care and Health study (Britt *et al.* 2008; Roydhouse *et al.* 2011). Within RM3, more GPs graduated in Australia than overseas and had the same median number of continuing professional development hours devoted to asthma.

Discussion

The slow recruitment of GPs for this randomised controlled trial of an intervention study is consistent with the recruitment difficulties experienced by other studies in primary care where significant engagement was required by GPs. However, there were differences in the rate of recruitment and retention according to which recruitment method was used. The third method, RM3, which included initial contact and visit by the CI, a medical peer, was the most successful in terms of both GP recruitment and retention. RM1, which used project staff for recruitment, was the least successful on both counts. However, direct comparison with the other two methods is difficult because neither was limited to recruiting just one GP from each practice. Under RM1, interested GPs were turned away from the study because of this exclusion criterion, three of whom were subsequently enrolled under RM3. A limitation of this observational study is that the recruitment approaches were not randomised, thus findings from comparisons are subject to bias.

Both RM1 and RM2 exclusively recruited GPs in Western Sydney, where 30 GPs had previously participated in the PACE pilot study in 2004–05, and so were excluded from subsequent

Table 2. Characteristics of recruited GPs by recruitment method (RM)

Characteristic	RM1	RM2	RM3
Recruited (<i>n</i>)	34	32	84
Provided baseline data (<i>n</i>)	21 (62%)	26 (81%)	75 (89%)
Sex			
Male (<i>n</i>)	9	14	26
Female (<i>n</i>)	12	12	49
Fellow of the Royal Australian College of General Practitioners			
Yes (<i>n</i>)	11	16	38
No (<i>n</i>)	9	9	31
Undergraduate training			
Australia (<i>n</i>)	10	13	39
Overseas (<i>n</i>)	10	12	30
Practice type			
Solo (<i>n</i>)	6	3	7
Group (<i>n</i>)	13	22	63
Years in general practice (mean)	18	19	18
Continuing professional development hours devoted to asthma (median) ^A	3	2	2

^AMedian reported due to skewed distribution.

study participation. It is thus possible that the most 'research-interested' GPs may have already participated in the pilot.

The recruitment area was one of the differences between the three approaches as only RM3 recruited in both Central and Western Sydney. A possible explanation of the success of RM3 could be differences between GPs from Central and Western Sydney. The available data indicate that the Central and Western Sydney recruits from RM3 were similar to each other as well as being similar to those recruited in RM1 and RM2 in terms of practice type, Fellow of the Royal Australian College of General Practitioners status and number of years in practice. As the characteristics of recruited GPs did not vary substantially by recruitment area, differing participant characteristics do not appear to explain the reason for the success of RM3. Recruiting in these two GP divisions alone and the small response rate (out of those contacted with a letter) may limit the generalisability of the findings to other GP divisions and the wider GP population.

In 2007–08 the proportion of female GPs in the Western Sydney Division was 30.8% (165/536) while in the Central Sydney Division it was 46.9% (298/635) (PHC RIS 2012). As all GPs in a Division were contacted, the above findings from the PHC RIS 2007–8 Annual Survey of Divisions can be compared with our data. The proportion of females in RM1 was 57% (12/21), in RM2 it was 46% (12/26) and in RM3 it was 65% (49/75). Overall, 60% of the GPs recruited were female while in the large sample-size Bettering the Evaluation of Care and Health study, 36.8% (351/953) were female (Britt *et al.* 2008). Thus, in this study, a possible explanation for the high proportions of female GPs recruited could be due to female GPs being more responsive to interventional research, or alternatively this was because all the PACE recruiters were female.

With the caveats outlined above, in the present study, RM3 was the approach associated with the largest proportion of GPs recruited out of those contacted. The greater success of RM3 appears to be attributable to who did the recruiting. Specifically, having a medical peer telephone a GP's surgery greatly simplified access to the practice, a finding that has been previously noted (Veitch *et al.* 2001; Sellors *et al.* 2002; Ellis *et al.* 2007). Reasons why the medical-peer approach works is the ability to pass the practice 'gatekeeper', usually a receptionist, because of their respect and credibility (Heywood *et al.* 1995) and the strength of their personal networks and relationships (Asch *et al.* 2000). A potential drawback of this approach is that GPs may find it hard to say no to a peer at the beginning with time then wasted on a participant who later withdraws (Goodyear-Smith *et al.* 2009). In our study, this did not appear to be the case as RM3 was associated with both higher recruitment and retention of GPs. The perceived cost of recruitment by medical peers is often cited as a major reason for not recruiting GPs in this way. While initial costs may be greater using a medical peer, the recruitment timeframe would potentially be shortened, leading to cost savings that could offset this amount.

Conclusion

As recruitment delays can greatly increase the cost of research, a better understanding of strategies that improve recruitment and retention rates is a critical aspect of primary care research. This paper reinforces that research projects requiring GP participation

need to carefully plan their timelines and budgets to account for the challenges of recruiting GPs into research studies. The findings indicate that having a medical peer as the primary contact may have enhanced recruitment of GPs to a trial of a highly participatory educational intervention.

Conflicts of interest

None declared.

Acknowledgements

The authors would like to thank the GPs who participated in the study, the research staff who supported the study and Marivic Lagleva who assisted with the paper. The PACE Australia study was funded by the Australian Government Department of Health and Ageing, Asthma Management Program.

References

- Asch S, Connor SE, Hamilton EG, Fox SA (2000) Problems in recruiting community-based physicians for health services research. *Journal of General Internal Medicine* **15**, 591–599. doi:10.1046/j.1525-1497.2000.00329.x
- Bower P, Wilson S, Mathers N (2007) How often do UK primary care trials face recruitment delays? *Family Practice* **24**(6), 601–603. doi:10.1093/fampra/cmm051
- Britt H, Miller GC, Charles J, Henderson J, Bayram C, Harrison C, Valenti L, Fahrudin S, Pan Y, O'Halloran J (2008) 'General practice activity in Australia 1998–99 to 2007–08: 10 year data tables.' (Australian Institute of Health and Welfare: Canberra)
- Ellis SD, Bertoni AG, Bonds DE, Clinch R, Balasubramanyam A, Blackwell C, Chen H, Lischke M, Goff DC (2007) Value of recruitment strategies used in a primary care practice-based trial. *Contemporary Clinical Trials* **28**, 258–267. doi:10.1016/j.cct.2006.08.009
- Foy R, Parry J, Duggan A, Delaney B, Wilson S, Lewin-van den Broek N, Lassen A, Vickers L, Myres P (2003) How evidence based are recruitment strategies to randomized controlled trials in primary care? Experience from seven studies. *Family Practice* **20**(1), 83–92. doi:10.1093/fampra/20.1.83
- Goodyear-Smith F, York D, Petousis-Harris H, Turner N, Copp J, Kerse N, Grant C (2009) Recruitment of practices in primary care research: the long and the short of it. *Family Practice* **26**, 128–136. doi:10.1093/fampra/cmp015
- Heywood A, Mudge P, Ring I, Sanson-Fisher R (1995) Reducing systematic bias in studies of general practitioners in research. *Family Practice* **12**(2), 227–231. doi:10.1093/fampra/12.2.227
- Jones KM, Dixon ME, Falkingham L, Pitmann L, Dixon JB (2011) Barriers to recruitment of professionals into a general practice childhood obesity program. *Australian Journal of Primary Health* **17**, 156–161. doi:10.1071/PY10017
- Jones KM, Dixon ME, Dixon JB (2012) General practice research – does gender affect the decision to participate? *Australian Family Physician* **41**(6), 419–423.
- Minas H, Klimidis S, Kokanovic R (2005) Mental health research in general practice. *Australasian Psychiatry* **13**(2), 181–184.
- Pearl A, Wright S, Gamble G, Doughty R, Sharpe N (2003) Randomised trials in general practice – a New Zealand experience in recruitment. *The New Zealand Medical Journal* **116**(1186), 681–687.
- Primary Health Care Research & Information Service (2012) 'Key Division of General Practice characteristics 2007–2008 from the PHC RIS 2007–8 Annual Survey of Divisions.' (PHC RIS: Bedford Park, SA) Available at <http://www.phcris.org.au/products/asd/keycharacteristic/index.php> [Verified 19 October 2012]

- Rosemann T, Szecsenyi J (2004) General practitioners' attitudes towards research in primary care: qualitative results of a cross sectional study. *BMC Family Practice* **5**(1), 31.
- Roydhouse JK, Shah S, Toelle BG, Sawyer SM, Mellis CM, Usherwood TP, Edwards P, Jenkins CR (2011) A snapshot of general practitioner attitudes, levels of confidence and self-reported paediatric asthma management practice. *Australian Journal of Primary Health* **17**, 288–293. doi:[10.1071/PY11009](https://doi.org/10.1071/PY11009)
- Sellers J, Cosby R, Trim K, Kaczorowski J, Howard M, Hardcastle L, Sellers C, Woodward C, Seniors Medication Assessment Research Trial (SMART) Group (2002) Recruiting family physicians and patients for a clinical trial: lessons learned. *Family Practice* **19**(1), 99–104. doi:[10.1093/fampra/19.1.99](https://doi.org/10.1093/fampra/19.1.99)
- Shah S, Toelle BG, Sawyer SM, Roydhouse JK, Edwards P, Usherwood T, Jenkins CR (2010) Feasibility study of a communication and education asthma intervention for general practitioners in Australia. *Australian Journal of Primary Health* **16**(1), 75–80. doi:[10.1071/PY09056](https://doi.org/10.1071/PY09056)
- Shah S, Sawyer SM, Toelle BG, Mellis CM, Peat JK, Lagleva M, Usherwood TP, Jenkins CR (2011) Improving paediatric asthma outcomes in primary health: a cluster randomised controlled trial. *Medical Journal of Australia* **195**, 405–409.
- Tognoni G, Alli C, Avanzini F, Bettelli G, Colombo F, Corso R, Marchioli R, Zussino A (1991) Randomised clinical trials in general practice: lessons from a failure. *British Medical Journal (Clinical Research Ed.)* **303**, 969–971. doi:[10.1136/bmj.303.6808.969](https://doi.org/10.1136/bmj.303.6808.969)
- van der Wouden JC, Blankenstein AH, Huibers MJ, van der Windt DA, Stalman WA, Verhagen AP (2007) Survey among 78 studies showed that Lasagna's law holds in Dutch primary care research. *Journal of Clinical Epidemiology* **60**, 819–824. doi:[10.1016/j.jclinepi.2006.11.010](https://doi.org/10.1016/j.jclinepi.2006.11.010)
- Veitch C, Hollins J, Worley P, Mitchell G (2001) General practice research: problems and solutions in participant recruitment and retention. *Australian Family Physician* **30**(4), 399–406.
- Watson JM, Torgerson DJ (2006) Increasing recruitment to randomised trials: a review of randomised controlled trials. *BMC Medical Research Methodology* **6**, 34.
- Williamson MK, Pirkis J, Pfaff JJ, Tyson O, Sim M, Kerse N, Lautenschlager NT, Stocks NP, Almeida OP (2007) Recruiting and retaining GPs and patients in intervention studies: the DEPS-GP project as a case study. *BMC Medical Research Methodology* **7**, 42. doi:[10.1186/1471-2288-7-42](https://doi.org/10.1186/1471-2288-7-42)
- Yallop JJ, McAvoy BR, Croucher JL, Tonkin A, Piterman L, Chat SG (2006) Primary health care research – essential but disadvantaged. *Medical Journal of Australia* **185**(2), 118–120.