Recruitment of practices in primary care research: the long and the short of it

Felicity Goodyear-Smith, Deon York, Helen Petousis-Harris, Nikki Turner, Jackie Copp, Ngaire Kerse and Cameron Grant


Objective. To determine factors that facilitated or hindered recruitment of general practices into a large New Zealand primary care project that aimed to determine general practice characteristics of immunization coverage.

Methods. The project had a multi-level recruitment strategy requiring recruitment of randomly selected practices before randomly selecting GPs, practice nurses and caregivers of children enrolled at those practices. Detailed quantitative and qualitative recruitment data were recorded on an access database. Post-recruitment, recruiters underwent semi-structured interviews. Analysis was mixed method, with triangulation of descriptive statistics of the number of calls and time course to recruitment and general inductive thematic analysis of qualitative data.

Results. Identifying key decision makers and how individual practice processes work can save significant recruitment time. Factors identified as assisting practice recruitment included using a personal approach from doctor to doctor, getting buy-in from all practice staff, streamlining the research process to minimize disruption to the practice and flexibility to accommodate practices.

Conclusions. The task of recruiting should not be underestimated. Adequate time and resource need to be allocated from the onset. Long periods where practices have no added burdens such as audits, mass vaccination programmes or influenza season are unlikely, therefore there are always considerable challenges in recruiting practices for research. Remaining flexible to individual practice styles and influences and acknowledging the commitment of participants is important.

Keywords. Immunization, methods, primary health care, research design, vaccination.

Introduction

Research studies are essential for improving delivery of services in the primary care environment. Use of practice-based research networks may facilitate recruitment in many studies. However, when the research question requires optimal generalization of results, recruitment using random selection of all eligible participants may be preferable.

Often a major component of time spent on conducting research involves recruiting subjects to participate. Recruitment of participants is frequently the most difficult aspect of the research process and many fail to recruit their planned number of participants. There are ethical obligations, often conflicting, placed on the research team to maximize recruitment numbers for the benefit of the study and for the participants who agree to take part in the research. A recent study indicated that most trials take longer to recruit than allowed for in their original timescale, with resulting additional funding requirements.

The research team faces barriers that are frequently beyond their control. For example, health professionals and primary care practices who take part in research often have time constraints to consider and difficulties motivating their practice colleagues to participate. A number of approaches are used by researchers to facilitate recruitment. Determining
successful and unsuccessful strategies is beneficial to the research community and to society. Most studies on research recruitment for clinical trials have focused on enlisting individual patients rather than randomly selected practices. Recruiting from research networks may be difficult enough. One US study had to send an invitation to 408 practices from three research networks in order to recruit 12 practices to participate in their study. While randomization at the practice level may give a study great generalizability, it may pose considerable challenges.

In New Zealand (NZ), most childhood immunizations occur within the primary health care/general practice setting and most are administered by practice nurses. A large primary care project was undertaken in the Auckland and Midland regions of NZ with the aim of determining general practice (family medicine) characteristics of immunization coverage and timeliness. This study had a multi-level recruitment strategy.

First, randomly selected practices were recruited, their immunization coverage and practice characteristics measured and the practice manager surveyed. Second, a randomly selected GP and randomly selected practice nurse were recruited for telephone interviews. Third, the caregivers of a random sample of children <2 years old who were enrolled at participating practices were invited for interview. The children’s medical records then were reviewed for missed opportunities for immunization. Last, in a small number of practices, a practice nurse and the caregivers of children she was immunizing were recruited for a videotaped assessment of the immunization event.

Clearly, the key to this study was the initial successful recruitment of randomly selected practices. An assessment of the recruitment strategy and process was conducted. The aim of this study is to determine factors that facilitated or hindered recruitment of the general practices into the project.

Methods

Recruitment for the study took place between 2004 and 2005 at the Department of General Practice and Primary Health Care, The University of Auckland. The three GP researchers (FGS, NT and NK) in the study took primary responsibility for practice recruitment. The project manager (JC) prepared a detailed Access database of all general practices in the designated regions, including names and contact details of clinical personnel from a compiled master database. The research assistant (DY) liaised with recruited practices, extracted immunization data from their electronic medical records, surveyed the practice managers and interviewed the GP researcher/recruiters.

A sample size of 125 practices was calculated based on 80% power to show statistical significance at the two-sided 5% level for a practice characteristic/health professional knowledge measure/quality measure associated with higher immunization coverage if this characteristic/measure is present in 20% more of the practices with higher coverage. These calculations assumed that the characteristic or measures being examined have a frequency of between 10% and 70%.

The three recruiters were initially supplied with details of 75 practices randomly selected using a computerized number code. Where a recruiter personally knew the GPs at a particular practice, she/he could elect to invite that practice. The remainder of the randomly selected practices were equally allocated to the recruiters. Selected data describing these practices, including the designated recruiter, were placed on a shared network drive.

All telephone attempts to recruit the practice were recorded on the shared database. This included dates when contacts were attempted or successfully made, the person contacted, various notes such as identification of the key person to make the decision, concerns raised by the practice, other comments and the final outcome (recruited or declined). Data entry was facilitated by drop-down or automated options wherever possible (such as date and time of the call, role of person spoken with, outcome of each call), as well as text boxes for recording instructions (such as to ring Dr X at a particular time on a particular day) and comments (for example, that the practice was involved in another project but available to participate in 2 months). These data were utilized to analyse quantitative and qualitative aspects of the practice recruitment process, augmented by responses from the semi-structured interviews of the recruiters.

Once the practice had been recruited, the project manager initiated the informed consent and data collection processes. Once the 75 practices had been approached and either accepted or declined, further blocks of practices were randomized. Recruitment ceased when 125 practices had been enlisted into the study. Towards the end of the recruitment phase, a non-medical recruiter, the project manager, was also utilized in view of time constraints for the recruiters.

Following recruitment, a member of the research team (DY) conducted a semi-structured interview of the three GP recruiters and project manager regarding the barriers and enablers they perceived to successful recruitment (see Appendix 1). The data used in this study were records from the recruitment database, notes recorded during recruitment calls and responses from the interviews of the recruiting staff. Written records were produced from interviews with the recruiters. Analysis was mixed method, with triangulation of descriptive statistics of the number of calls and time course to recruitment and qualitative data analysis. For the latter, records from both the
Access database text boxes and the recruiter interviews were read and reread and subjected to general inductive thematic analysis using a grounded theory approach. Text was coded, reordered and summarized. Themes were coded by more than one reader to establish reliability.

Results

Response rates
From a total of 517 practices, 213 were randomly selected, of which 205 were eligible practices (provided immunizations to an enrolled paediatric population) and invited to participate (see Fig. 1) from which 124 practices were recruited (60% acceptance rate). Recruitment had ceased once 125 practices were enlisted but one subsequently dropped out.

The recruited practices were compared with those that declined with respect to their socio-demographic characteristics and funding types and were shown to be regionally representative. The practices were also compared with all primary care practices in NZ on a number of parameters and found to be representative, particularly with respect to their size and rural/urban mix.

Recruited practices had a larger proportion of registered patients from more socially deprived deciles than the national average ($\chi^2 = 0.346, 1$ d.f., $P < 0.001$). The NZ Social Deprivation Index combines a range of key socio-demographic factors to estimate an overall score of material and social deprivation for a particular area, on a scale of 1 (least deprived) to 10 (most deprived or experiencing considerable hardship). Social deprivation scores reflect the ability to achieve positive outcomes in spheres such as health, education and

![Flowchart of practice recruitment and subsequent data sets](https://academic.oup.com/fampra/article-abstract/26/2/128/2367450)
employment. Given that Auckland and Midlands has a higher proportion of Māori and Pacific Island and areas of greater poverty than the national population, it would be expected that our practices reflected this.

The 124 recruited practices subsequently yielded data on 29,503 children, 112 randomly selected GPs, 115 randomly selected practice nurses, 957 randomly selected caregivers of children aged under 2 and 10 videotaped immunization events (Fig. 1).

Time and attempts needed to recruit practices
It took an average of 19 working days for Auckland and 25 working days for Midland from initial recruiter contact to practice consent. The simplest practices to recruit took only 1 day were small and run by the GP; while the practices that took the longest were generally larger organizations with salaried GPs and decisions requiring negotiation with management staff. Data collection completion from recruitment start date took between 12 and 358 working days for Auckland practices (average 92 days) and 5–292 working days for Midland (average 84 days) (Fig. 2).

The average number of calls to recruit a practice was three. Recruitment of a practice varied from a single phone call to 13 calls before the relevant staff member could be contacted and the recruitment decision determined. Following practice recruitment, up to 20 phone calls were made by other project staff (especially the project manager) to further inform practice staff and organize various components of the study. This did not include other forms of communication including faxes and emails.

Barriers to recruitment
Recruitment was hindered or delayed by several contemporaneous issues (see Fig. 3). Practices approached during April to June were busy with their annual influenza vaccination campaign and frequently asked for postponement of recruitment until this process was complete. A greater issue was that this project coincided with the staggered rollout of a mass immunization strategy to control a meningococcal epidemic (National Meningococcal B Immunisation Programme). A vaccine to the NZ strain of group B Neisseria meningitidis had been developed in response to a nationwide epidemic. The national programme aimed to vaccinate 90% of children and young people aged under 20 years old with three vaccine doses between July 2004 and June 2006. Rollout for Auckland practices to deliver the vaccines to their pre-school populations started in November 2004 and in Midland in March 2005. This immunization campaign was a huge added time and resource burden on practices contributing to their decline or postponement to enter the study.

![Time to Complete Recruitment and Data Collection](https://academic.oup.com/fampra/article-abstract/26/2/128/2367450/131)
The third impediment was that many of the Midland practices were preparing for their Royal New Zealand College of General Practitioners’ practice accreditation programme ‘Cornerstone’ from July 2005 to June 2006. This is a major undertaking involving the entire general practice team in activities such as developing practice systems for clinical care and safety and legal issues. Many Midland practices postponed or declined because they were involved in the accreditation process.

Themes derived from recruiters’ notes
Analysis of the comments entered in the text boxes by recruiters revealed five main themes. First, there was the need to clearly identify the practice staff members responsible for decision making at this level, who might be a GP owner, the practice manager (PM) or a group decision:

Happy but needs to confer with others (GP, practice #84)
Happy but needs to speak with practice manager (Head nurse, practice #90)

Second, there were concerns about the time involved in participation:

Very busy, worried about time, give them flexibility to fit it in when they can’ (GP, practice 42)

Third, practices would indicate that under their current circumstances, they could not consider involvement at present, but to contact them at a later date. Many of these were the events noted above

Please ring after 31 July when MeNZB and flu finished (PM, practice #97).

Practice very busy with Cornerstone. They are keen to be involved but can’t do it for three months (GP, practice #32)

Others had different reasons for delays such as holiday periods or staff away:

Prefer to wait until January. Will need re-contacting closer to Christmas (GP, practice #62)

On holiday for two weeks—please schedule after then (GP practice #41)

to the more unusual

Have had a burglary—had their server stolen—do not call for a week (PM, practice #91).

Another theme that emerged was the need to explain to practice staff the nature of the research process. There was a fear of ‘not measuring up’ with respect to their immunization coverage or knowledge and therefore a reluctance to engage. Some needed reassurance that the study was about checking their performance:

Worried feels his records are a mess (GP/PM practice #401)

Sometimes it was even necessary to explain to staff eager to participate that the GP and nurse to be interviewed would be randomly selected not volunteers:

Dr X wants to be the GP. I explained perhaps he wouldn’t be (GP, practice #421)

The final prevalent theme from recruiter notes was the effect of practice variability. Different governance structures (such as solo practices, group practices and
trusts) required different recruitment approaches to facilitate the practice to participate and to customize the process for them:

Happy to be involved as long as organise via the receptionist (GP, practice #43)

This is six businesses, six GPs with six dedicated practice nurses who share a PMS with all patients on it—all GPs must agree because cannot limit patient data we look at to one practice ... need to decide whether this is one or six practices (GP, practice #359)

Initial contact with some practices was much more difficult than others

Rang five times—number always engaged (recruiter FGS, practice #401)

Themes derived from recruiters’ interviews
The second qualitative data set was the semi-structured interviews with the recruiters. These revealed similar barriers to recruitment: getting to the decision maker:

Identifying the right person who can promote the study to the rest of the staff, getting consensus (FGS)
Not being able to access the decision-maker (JC)
overcoming resistance from fear of not measuring up:
Reassurance that it is not an audit (FGS)
asking time-strapped practices to participate:
The time commitment—asking a practice to do something else over and above their usual work load (FGS)
and timing issues:
MeNZB, 'flu, accreditation, too busy (NT).
Recruiters had a number of suggestions on how to overcome some of the barriers.
These included offering incentives:
Not just material, but educational as well (FGS)
recruitment using a personal approach GP to GP
Doctor to doctor recruiting (JC)
Personal connections with your colleagues (FGS)
getting buy-in from practice staff
Make them feel included—not just passive participants (FGS)
and minimizing disruption to the practice from the research
Streamlining process (NT)

GP to GP contact, at times, allowed the recruiter to get past the receptionist who might act as a gatekeeper to non-medical recruiters. In contacting the GP, it was important that the recruiter remained as the active communicator rather than leaving a message for the GP to return the call. This could mean continuing to ring at times that the receptionist indicated the GP might be available. Although the recruiter might have to ring a number of times, this avoided the situation of missing a return call from a GP or the GP failing to return the call.

The GP to GP approach sometimes had drawbacks. A doctor might have difficulty saying no to a colleague. Rather than decline participation immediately, the decision would be deferred, requiring time-consuming follow-up from the research team with eventual refusal.
Time spent on recruitment was not commensurate with a successful recruitment. Frequently, the longer a practice took to recruit, the less likely it was to be a successful recruitment.
Practices easier to recruit were small; where the GP was also the owner and sometimes practice manager, where the GP was interested in the research and the practice was well organized:
Small owner/operator easier to recruit. If GP is interested and is the decision maker as well. (NK)
Had simple processes (FGS)

Conversely, large practices, particularly those run as trusts, were the most difficult to recruit. This is likely to be because of:
the complexity of their structures
Multi-layered—identifying the right person, getting consensus (FGS)
an inability to identify the person with authority to make the decision
A key person was non-existent (NT) or governance issues
Staff, time issues, organizational problems (NT)
Some practices did not want to participate but had difficulty declining, particularly if they knew the recruiter:
Wanted to say no from the beginning and would drag it out (FGS)

All recruiters concurred that enlisting the practices was difficult, they suffered from ‘recruiter fatigue’ (NK) and the task was particularly demanding because of ‘the complexity of the project’ and its ‘multi-levelled’ nature (FGS).
Discussion

The overall practice recruitment rate of 60% and the fact that these practices were generally nationally representative ensured success for the project.

**Enablers to recruitment**

Enablers to recruitment were both external and internal. External factors relate to how the practices respond to research, while internal factors relate to how the research is organized.

The recruiters reported that the greater the efficiency of administrative staff, the easier it was for a rapid decision to be reached. Many practices had clear processes to follow and decisions were made promptly.

Three key modifiable factors can be identified. First, the ‘peer-to-peer’ approach to recruitment was a useful strategy. Three recruiters for this research were themselves GPs. This approach is well established. While a peer-to-peer approach can lead to bias and unrepresentative samples, this approach worked effectively for a project of our nature, especially when there was a pre-existing relationship. Enlisting the assistance of a doctor in the recruitment process as the first point of contact reduces the possibility of being denied access to the practice.

Direct phone calls have been found to be more effective than mailed invitations. One study found that initial phone contact followed by a personal visit to the practice was a successful recruitment strategy. Although previous studies have found urban practices easier to recruit than rural, this was not our experience.

A review of factors influencing participation of community-based physicians in research previously has found that physician personal contact and friendship networks are powerful tools for recruitment and that physician-to-physician recruiting can be a successful strategy. However, ‘cold calling’ of doctors can sometimes yield good recruitment rates and may be a cost-effective strategy. Reducing the burden on participating doctors, especially minimizing the time demands on themselves and their staff, and showing appreciation for their contribution, both in a material way (such as gifts) and psychologically (ameliorating their fears of individual evaluation), were also found to be helpful in recruitment.

Identifying a ‘local champion’, a key stakeholder who can introduce the researcher to the participants and assist with the ‘buy-in’ of other staff members, is helpful.

A sense of partnership between researcher and participant can be a positive factor. The researchers ensured that practices felt involved with every step of the study process were fully informed of its different stages and had timing to participate was flexible.

**Barriers to recruitment**

Recruitment at the primary care level may present the additional difficulty of a multi-layered nature to practice decision making. It was problematic recruiting a practice where consensus whether to take participate was needed from several GPs or practice staff before consent could be obtained. Secondary to this was difficulty in accessing the decision maker or the practice not having a clear process to make decisions about taking part in primary care research.

Declining practices sometimes initially consented because they did not wish to say no to a colleague. This resulted in unnecessary time spent pursuing these practices. Furthermore, use of doctors to recruit is a potentially expensive technique which may not be cost-effective for some studies.

To encourage participation, recruiters had to overcome perceptions that the research was too involved, time intensive or difficult to consider taking part in or that it was an audit measuring their performance. Staff pressures, including lack of time and being overworked, were common reasons to delay or decline taking part in the research. This required recruiters to ‘sell’ the research and present the benefits of enrolling in an activity over and above their already stretched daily activities.

The practices in both the Auckland and Midland region that took the longest to recruit and subsequently collect data from (358 and 292 days respectively) were both large practices that operated using a trust model. In both cases, a multi-layered level of consultation was required. Initially, it was unclear who were the key decision makers. Also in both cases, staff changes occurred while the research was conducted.

By keeping detailed records of the various contacts within the recruitment process and using a triangulation method to combine quantitative and qualitative data, this project was able to examine the recruitment process in some detail. Although an arduous process, recruiters were able to achieve an adequate recruitment rate using a random selection process of practices.

**Limitations and strengths**

This study has limitations with respect to its generalizability, given that it is as an observational study rather than a controlled trial comparing different recruitment strategies. Furthermore, there were occasional missing data in the recruitment database when recruiters worked off-site without access to the shared drive. However, entries were sufficient to indicate the number and the range of telephone contacts needed to enlist practices in the study.

While specific barriers to recruitment were identified that might be specific to the NZ environment [an annual influenza vaccine programmes, rollout of
a national immunization for Meningococcal B Immunisation [immunization] (MeNZB) or practice accreditation], in all primary care practices there will be numerous competing interests, and successful recruitment may require flexibility to accommodate the practices around these restraints.

A strength of this study into practice recruitment was the use of the detailed database recording the recruitment process with both quantitative and qualitative data. Triangulation of these data demonstrated not only the ‘how and when’ but also the ‘why’ decisions to consent or decline were made. Furthermore, responses from the recruiter interviews augmented the notes documented at the time of recruitment. At the interview, the recruiters were able to look back and assess the recruitment process as a whole and to expand on some of the issues that had emerged while they were recruiting.

Participant recruitment is key to any successful research project but may be the most difficult aspect to implement. Although recruitment was neither easy nor straightforward, partly our success can be attributed to the degree of flexibility offered to practices and to individuals. This included being available at times that suited them, postponing their involvement until a more convenient time and using a variety of communication modes including telephone, fax, email and face-to-face visits.

The task of recruiting into a study should not be underestimated and adequate time and resource needs to be allocated from the onset. Establishing who are the key decision makers and how individual practice processes work can save significant recruitment time. Long periods where practices have no added burdens such as audits, mass vaccination programmes or influenza season are unlikely and therefore there will always be considerable challenges in recruiting them to research. While our strategy proved successful, it may not work for all studies. Remaining flexible to individual practice styles and influences and acknowledging the commitment to participants are important.

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Declaration

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Conflicts of interest: None.

References

Appendix 1
Questions asked of recruiters in the interview at the conclusion of recruitment

What do you consider the main barriers to a practice being recruited?
Have you had any suggestions as to how you could overcome some of these barriers?
How would you compare the response to the research from a practice who was recruited compared with a practice that declined?
When recruiting, at what point did you strike difficulty? Any particular group?

Were there any differences in the time of day or day of the week that achieved a higher consent/decline rate?
Any geographical differences? Rural/Urban; Midland/Auckland?
Any difference in type of provider? (Maori/Pacific)
What were some of the common reasons practices delayed?
What were some of the common reasons practices declined?
Compared with other studies you have been asked to recruit for, how did this project differ?