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Primary care teams: New Zealand's experience with community-governed non-profit primary care

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Abstract

Community-governed non-profit primary care organisations started developing in New Zealand in the late 1980s with the aim to reduce financial, cultural and geographical barriers to access. New Zealand's new primary health care strategy aims to co-ordinate primary care and public health strategies with the overall objective of improving population health and reducing health inequalities. The purpose of this study is to carry out a detailed examination of the composition and characteristics of primary care teams in community-governed non-profit practices and compare them with more traditional primary care organisations, with the aim of drawing conclusions about the capacity of the different structures to carry out population-based primary care. The study used data from a representative national cross-sectional survey of general practitioners in New Zealand (2001/2002). Primary care teams were largest and most heterogeneous in community-governed non-profit practices, which employed about 3% of the county's general practitioners. Next most heterogeneous in terms of their primary care teams were practices that belonged to an Independent Practitioner Association, which employed the majority of the country's general practitioners (71.7%). Even though in absolute and relative terms the community-governed non-profit primary care sector is small, by providing a much needed element of professional and organisational pluralism and by experimenting with more diverse staffing arrangements, it is likely to continue to have an influence on primary care policy development in New Zealand.

Key words: primary care, non-profit, population-based, workforce, team

Introduction

New Zealand has a largely tax-funded health system which, in its general form, looks similar to the United Kingdom's National Health Service, including its foundation of general practitioner-based primary care. Yet New Zealand is unusual among welfare states of the liberal democratic model because primary care is only approximately 60% funded by government [1]. Because of patient co-payments, the paucity of indigenous (Maori) and Pacific Islanders in the primary care workforce [2], and the uneven distribution of general practitioners (GPs), significant financial, cultural and geographical barriers to access exist for primary care [3-5]. These barriers have a long standing historical basis (discussed below) and, in response, community-governed non-profit primary care organisations started developing in the late 1980s [6]. The first non-profit trade union health centres were set up in 1987, and a diverse range of non-profit primary care organisations emerged during the early and mid 1990s, most notably Maori initiatives. In 2004 there were 51 member organisations in the country's principal network of non-profit primary care centres, 32 of which provided comprehensive primary health care services (personal communication: Petra van den Munckhof, National Co-ordinator, Health Care Aotearoa). In many instances these organisations aimed to provide population-based primary care, which included the targeting of high needs populations, locating in geographical areas lacking in primary care services, adopting population-based funding, and enrolment-based management of the patient population [7, 8].

New Zealand's *Primary Health Care Strategy* [9], released in 2001, charts a course for primary care that draws on the experience of on the community-governed non-profit sector. Increasingly, primary care and public health strategies are expected to be coordinated and inter-meshed, with the overall objective of improving population health and reducing health inequalities. The *Strategy* therefore foreshadows important changes in primary care, including the formation of new non-profit umbrella organisations, called Primary Health Organisations (PHOs). PHOs are responsible for ensuring that their constituent general practices and community organisations provide comprehensive, continuing and coordinated care to their enrolled populations, including health promotion and prevention programmes. Increasingly, PHOs will be held accountable to their funders for a range of population health outcomes. The development of PHOs mirrors, to an extent, the development over the past five years of primary care groups and trusts in the UK [10].

Staff are the most important resource in PHOs. New Zealand has approximately 23,000 health practitioners plus around 30,000 support workers delivering services in the community [2]. Around 40% of its medical practitioners and 23% of its nurses work in primary care settings. Research has addressed a range of issues related to primary care staffing. For example, evidence from the UK suggests that workload in primary care varies according to socioeconomic deprivation [11], that nurse practitioners can successfully take on an expanded role [12], and that well performing primary care teams provide better health care [13]. However, very little is known about the preparedness of traditional primary care teams in New Zealand to take on the new population-based focus

expected of them. The Health Workforce Advisory Committee raised the following questions [2]:

1. How can the existing primary care workforce be supported, retained and appropriately rewarded throughout the implementation of the *Primary Health Care Strategy* and introduction of Primary Health Organisations?

2. How can the primary care workforce be supported to adapt to the new models of care required by Primary Health Organisations?

3. Should all District Health Boards [purchasing agencies] and Primary Health Organisations be required to have a workforce development strategy, specific to their own context?

4. What role is there for allied health professionals in Primary Health Organisations?

Aims of the study

There are very few up-to-date data concerning primary care staffing arrangements. The purpose of this study is to carry out a detailed examination of the composition and characteristics of primary care teams in community-governed non-profit practices and compare them with more traditional primary care organisations, with the aim of drawing conclusions about the capacity of the different structures to carry out population-based primary care. The study used data from a representative national cross-sectional survey of primary care practitioners in New Zealand.

The discussion section examines the policy implications of the findings as they apply to the implementation of population-based primary care. Drawing on path dependence

theory, obstacles to implementation of the population-based primary care are identified and policy challenges are highlighted.

Before presenting the methods and results, the paper provides a summary of the policy and operational context for the study, and identifies some of the constraints facing government as it moves to implement the *Primary Health Care Strategy*.

Policy context—primary care staffing arrangements

New Zealand, in common with most countries, has a pattern of staffing in the primary care system that results from social, political and economic influences operating over past decades. The results of this study are interpreted through the lens of path dependence theory, which in turn is drawn from the economics literature [14, 15]. Path dependence asserts that 'history matters'— that past decisions and historical conditions exert an influence over current decision making parameters. In the context of primary care policy, we argue that policy decisions made by governments over the past several decades in response to economic, political and social forces, at the very least provide obstacles to the implementation of population-based primary care, or more importantly may limit the range of policy options available for its implementation. There follows below a brief description and history of the institutional arrangements surrounding the employment of GPs, nurses and midwives in primary care. The discussion section interprets the study findings in the light of the policy constraints identified by these histories.

GPs form the principal provider group of interest from the point of view of primary care policy for the historical reason that state funding has focused on the activities of GPs. Traditionally GPs in New Zealand have adopted a self-employed, for-profit small business model. Since the early 1940s New Zealand's primary care policy has been characterised by a sharing of control between government and GPs. This has been largely due to the fact that GPs have retained their independence in the private sector (as in the UK and the US) and, in contrast to the UK, successive governments have supported their right to charge co-payments, thereby positioning government as subsidiser rather than total funder of primary care. In 1993 a conservative government introduced contracting into the health sector, that brought with it, for the first time, an opportunity for the government to exert more influence over issues such as the distribution of GPs and the on-going quest to increase control over demand-driven expenditure using funding mechanisms such as capitation and budget-holding [16]. The reforms of the 1990s prompted the development of a more diverse range of primary care arrangements, including the grouping of GPs into independent practitioner associations (IPAs). These changes occurred in parallel with the development of community-governed non-profit practices described above.

IPAs provide single negotiating bodies for contracting purposes as well as co-ordination of innovations in service provision [17]. Currently about 40% of total primary care expenditure is from private sources, and about 60% from public sources (largely via fee-for-service funding mechanisms) [1]. Successive governments attempted to ensure access to primary medical care services for low-income families by manipulating the primary

care subsidy scheme and through (largely failed) attempts to limit the amount charged by GPs [18]. Changes proposed in the *Primary Health Care Strategy* include the requirement that "Primary Health Organisations must be able to demonstrate that all their providers [individual general practices] and practitioners can influence the organisation's decision-making, rather than one group being dominant" [9, p.5]. The desire to have decision-making power shared across professional groups, along with an emphasis on an expanded role for nurses, represents a considerable challenge to GPs who traditionally have occupied a dominant role in primary care decision making.

Practice nurses have had a far less dominant role in primary care policy making, probably because generally they have been employed by GPs (with the exception of nurses in community-governed non-profits who are employed by the organisation), have had little or no ownership stake in general practices, and have had little opportunity for career development. In 1998 The *Report of the Ministerial Taskforce on Nursing* made recommendations aimed at addressing some of the structural barriers impeding the development of nursing [19]. More recent changes have paved the way for nurses to adopt more independent roles in primary care, including limited prescribing rights [20]. In any event, nurses, as a professional group, have historically been relatively disempowered in primary care decision making. The *Primary Health Care Strategy* [9, p.23] envisions an expanded and more central role for primary care nurses as being key to the adoption by Primary Health Organisations of a population focus.

In contrast to practice nurses, who in general have remained hostage to the fortunes of their GP employers, midwives have broken free of direct medical control as a result of the Nursing Amendment Act of 1990. The Act enabled midwives to take responsibility for maternity care, where previously only doctors could undertake such responsibility [21]. Midwives gained independent access to state maternity benefits which had the direct effect of reducing the number of GPs involved in the provision of maternity care. By 2001 it was estimated that midwives were the lead provider of maternity services for about 73% of births and GPs for only 9.6% [22, p.116]. While midwives and doctors expressed different views on the desirability of this dramatic reduction in GP involvement in obstetrics [23, 24], the *Strategy* requires PHOs to co-ordinate the activities of midwives, nurses and doctors in order to achieve population coverage of antenatal, intrapartum and postpartum care.

Methods

The National Primary Medical Care Survey (NatMedCa), carried out over 2001/2002, was a nationally representative, multistage, probability sample of general practitioners and patient visits. The primary purpose of the survey was to collect data on the content of patient visits. A practice questionnaire was completed by each GP enrolled in the study, and a nurse questionnaire was completed by one nurse associated with each participating GP. The practice questionnaire variables were organised conceptually using Starfield's framework for primary care systems [25, p.26]. The GP respondents consisted of 262

GPs (equating to 192 practices). The overall response rate for the practice and practitioner questionnaires was 76.6%.

In order to obtain a nationally representative sample: 1) geographic locations were sampled, and 2) GPs were sampled from locations, stratified by organisation type (independent; independent practitioner association; capitated; community-governed non-profit) and rural/urban (metropolis & cities; towns and rural areas). GP and practice weights were calculated to take account of different sampling probabilities, so that the sample is nationally representative, and approximately unbiased estimates of proportions, means, and measures of association between ownership status and organisational characteristics could be calculated [26].

Practices were categorised according to their ownership and governance arrangements: 1) private practices that were members of independent practitioner associations (IPAs), 2) private practices that were not members of such a group (independent practices), and 3) community-governed non-profit practices. Practices were defined as community-governed non-profits if they met at least two of the following three criteria: 1) they had a community board of governance (ie board members who were not health professionals), 2) there was no equity ownership by GPs or others associated with the organisation, and 3) there was no profit distribution to GPs or others working for the organisation.

Data analyses were carried out using the Sudaan statistical package [27], which accounts for clustering, complex survey design and sample weighting [28]. Sudaan employs

Taylor series linearisation for estimation of variance estimation of descriptive statistics and regression parameters. For comparing categorical variables a chi-square test was used, with p-values computed from the Wald chi-square using denominator degrees of freedom equal to the number of sampling units minus the number of strata. For continuous variables, t-tests and associated p-values were used.

Results

Nationally, 3% of GPs worked at community-governed non-profit primary care organisations, 25.3% were classed as 'independent' (that is not having affiliation to an umbrella primary care organisation such as an IPA), and 71.7% were members of an IPA.

Composition of primary care teams

The core primary care team consisted of 1) GPs (present in 100% of practices), 2) nurses (present in 93.2% of practices), and 3) reception staff (present in 94.4% of practices) (Table 1). Less commonly present were managers (54.5% of practices), administrative staff (29.8% of practices), community workers (3.0% of practices), midwives (8.4% of practices) and other professional types (17.0% of practices). Overall 40.1% of practices were solo-GP practices.

There were on average 2.1 full-time equivalent (FTE) doctors per practice, 1.6 FTE nurses per practice, and 1.5 FTE reception staff per practice (Table 2). Managers and

administrative staff were present in much lower numbers (0.4 and 0.3 per practice respectively).

The majority of staff were of European ethnicity (5.9 FTE per practice on average), with small numbers of Maori staff (0.3 FTE per practice), Pacific Island (0.1 FTE per practice) and Asian (0.3 FTE per practice).

—Table 1 about here—

Variation of primary care teams in different practice types

The composition of primary care teams varied across different practice types. Independent practices were far more likely to be solo-GP practices (55.9%) than were IPA practices (36.6%) or community governed non-profits (15.4%) (p<0.001). Independent practices were less likely to employ a nurse (76.7%), a manager (32.5%) and administrative staff (21.2%) than were IPA practices and community-governed non-profit practices (p<0.01 in each case) (Table 1). Independent and IPA practices were both considerably less likely to employ community workers, midwives and other professionals than were community-governed non-profits (p<0.001 in each case). Most (92.3%) of community-governed non-profits employed a manager, compared with 59.4% of IPA practices and 32.5% of independent practices (p<0.001).

The average number of staff also varied by organisation type. Community-governed non-profit practices were largest in terms of the number of FTE GPs (2.6 FTEs, compared

with 1.6 and 2.3 in independent and IPA practices respectively) (Table 2). In all but the community-governed non-profit practices the nurse to GP ratio was less than 1, with independent practices employing the fewest nurses overall (1.0 nurses per practice). Community-governed non-profit practices employed more reception staff than independent practices (p<0.026). Community-governed non-profits employed considerably more community workers and midwives that the other two practice types (p<0.001 in each case), and considerably more Maori and Pacific Island staff (p<0.001 in each case).

GPs in independent practices tended to be older (51.3% were 50 years or older) compared with those in IPA practices and community-governed non-profit practices (where 22.3% and 20.6% were 50 or older respectively) (p<0.001 for age differences). GPs in community-governed non-profits were more likely to be female (57.4%) compared with GPs in IPA and independent practices (37.6% and 37.8% respectively) (p=0.006 for gender differences). Seven point nine percent of GPs in community-governed non-profits were of Maori or Pacific Island ethnicity, compared with 0.9% in IPA practices, and 0% in independent practices (p<0.001). Similar proportions of GPs in all three types of practice had obtained their medical degree in New Zealand (between 61% and 66%).

On average GPs had spent 15.4 total years in practice, with GPs in community-governed non-profits having spent comparatively less (11.5 years) than their counterparts in independent and IPA practices, who had spent 18.4 and 14.9 years respectively in practice (Table 3). While, overall, the majority of GPs were self-employed (91.0%), only

19.3% of GPs in community-governed non-profits were (p<0.001), 82% of the latter group being employed on a salary. GPs worked an average of 7.8 half days per week, with GPs in community-governed non-profits working slightly fewer hours than their self-employed counterparts (p=0.054). During the average week GPs saw 102.2 patients during daytime working hours, although GPs in community-governed non-profits saw fewer (77.6). Intrapartum care was provided by 8.7% of GPs. GPs spent, on average, a total of 8.2 hours per month in continuing medical education.

Nurses in community-governed non-profit practices tended to be somewhat younger compared with those in IPA practices and independent practices (31.25%, 23.64% and 21.24% respectively were younger than 40 years; p<0.006 for age differences). Thirty-three point three percent of nurses in community-governed non-profits were of Maori or Pacific Island ethnicity, compared with 3.2% in both IPA and independent practices (p<0.001).

—Tables 2 and 3 about here—

Variation of primary care teams according to funding arrangements
The majority (84.0%) of community-governed non-profit practices were funded by government via a capitation mechanism. The majority of independent (97.8%) and IPA practices (69.6%) were funded by government via a fee-for-service mechanism. Irrespective of their ownership and governance arrangements, capitation-funded practices, as a group, employed more nurses and community workers than did practices

funded by fee-for-service payments (p=0.051 and p<0.001 respectively) (Table 4). Capitation practices employed more Maori staff (0.7 vs 0.2; p=0.018).

—Table 4 about here—

Professional role of nurses

Different, briefer, questionnaires were used for practice nurses in community-governed non-profits so comparative results for nurses do not include those working in community-governed non-profits (Tables 5 and 6). Table 5 reports the average number of nurse appointments per week (ranging from 23.4 to 29.6) and time allocated to different nurse duties. Around 16 hours per week were spent in direct patient contact, around 5 to 6 hours in phone contact, 5.0 to 6.5 in administration, and around 2.5 hours in housekeeping. There were no significant differences across practice types. The majority of practices had a nurse appointment system and charged for nurse appointments (Table 6). Nurse duties are itemised in Table 6, the only significant difference across practice types being the provision of group health education (11.6% of nurses in IPA practices vs 1.5% of nurses in independent practices; p=0.042)

—Tables 5 and 6 about here—

Discussion

Summary of key findings

Primary care teams were largest and most heterogeneous in community-governed non-profit practices, which employed about 3% of the county's GPs; the majority employed doctors, nurses, managers, reception staff, administrative staff and community workers, and 34.6% employed midwives. Next most heterogeneous in terms of their primary care teams were IPA practices, which employed the majority of the country's GPs (71.7%). Independent practices had the most parsimonious practice teams. A majority of both IPA and independent practices employed doctors, nurses and reception staff, but only a very small percentage employed community workers or midwives. Community-governed non-profits employed a higher proportion of women GPs than did IPA and independent practices. There were marked ethnicity differences between staff employed at the different types of practices, with community-governed non-profits employing more Maori and Pacific staff, including both doctors and nurses. The majority of practices had a nurse appointment system and charged for nurse appointments, and nurses carried out a wide range of duties. While the findings of this study do not include the specific range of services provided by nurse practitioners working in community-governed non-profits, previous research has demonstrated that such services include patient assessment and treatment, immunisations, antenatal care, cervical screening, counselling, weight loss programmes, asthma and diabetes management, triage, screening, dressings, and first aid training [29].

Policy implications for population-based primary care—path dependence and historical constraints

To perform the functions of population-based primary care it is likely that extra emphasis will be placed on: 1) screening and early detection, 2) outreach to vulnerable or hard-to-reach people, 3) health education and health promotion, 4) integration of maternity care into family-based primary care, 5) epidemiology, community needs assessment and locality planning, and 6) public health programmes and intersectoral collaboration. These functions will in turn require not only extra staff resources, including extra nurses, community workers and public health expertise, but also a reconfiguration of the existing staff arrangements. Such a reconfiguration should include consideration of the ethnicity profile of primary care teams and what changes would be required to reduce cultural barriers to access for New Zealand's mix of Maori (indigenous; 15% of the total population), Pacific and Asian populations. Yet the results of this study demonstrate that the primary care team is a fairly parsimonious entity in most New Zealand practices. In the majority of practices the primary care team consists of receptionists, nurses, and GPs. Few practices, other than the small minority that are community-governed non-profits, employ community workers or midwives.

As a result of historical policies discussed above, and the results of the survey presented in this paper, several important sets of constraints can be identified that impact on the capacity of the current primary care teams to respond to the challenges of population-based primary care. First, GPs own and operate small businesses and currently act as the

employer of the primary care team, thereby having control of the composition of the team. In the context of small-scale proprietary businesses, many of the requirements of population-based primary care may well be seen as an imposition—that is, likely to increase costs without increasing revenues. In these circumstances expansion of primary care teams to include community workers or midwives, for example, will be dependent upon extra funding from government. However, governance challenges come to the fore if, for example, government funds community workers to work within primary care teams. Who is responsible for providing the infrastructure for community workers— office space, transport etc—and how should a government-funded community worker relate with a GP operating a private business?

Second, nurses are relatively disempowered because of their status as employees of GPs, and therefore have limited opportunities to construct new roles for primary care nursing in response to the shift to population-based primary care. This raises the broader question of whether supposedly semi-autonomous health professionals can function successfully together as a team when one member of the team employs others in the team. This issue warrants more research. It is likely that the increasing use of capitation funding of practices will be associated with increased incentives to employ more nursing staff as doctor substitutes, because doctor-specific fee-for-service payments are replaced with bulk funding using a capitation formula. A number of studies have examined the effects of expanding the role of the practice nurse (and substituting some GP services with nurse services)—with results that suggest that nurse services are in some respects broadly comparable to those provided by GPs, and are favourably received by patients [12, 30-

37]. In any event, it seems probable that the traditional practice nursing role in New Zealand general practices could be expanded to include more responsibilities.

Third, primary care midwives have carved out a newly independent professional niche, are located mainly in the private for-profit sector, and compete with GPs for business. Part of the motivation for this shift of midwifery away from the controlling embrace of medicine was a philosophical objection to the medical model of obstetrics. Disciplinary differences and competition may slow down the emergence of functional primary care teams that include midwives and GPs.

Fourth, concerns with infrastructure are amplified by recent reports of professional dissatisfaction amongst GPs and the decreasing number of medical graduates opting for a career in general practice [38-41]. In the face of this multigenerational disaffection with general practice as a career option, and the growing importance of primary care nursing as a professional domain, primary care policies face the challenge of ensuring the maintenance of a well trained and stable primary care workforce, let alone an expanding one. To achieve population-based primary care objectives, there may be need for substantial further investment in primary care infrastructure in order to attract and retain highly skilled health professionals.

To what extent is New Zealand constrained, for historical reasons, to a pattern of primary care staffing that will inhibit the implementation of population-based primary care? Even though community-governed non-profit practices provide a model for population-based

primary care, path dependence theory suggests that policy constraints will have to be addressed in a positive manner if population-based primary care is to be implemented widely amongst more traditional practices. This in turn means that more far-reaching changes to the ownership, governance and funding of primary care practices might be required than is currently envisaged. The challenge for policy makers, in advancing the population-based primary care strategy, is to address the workforce issues by making simultaneous and co-ordinated changes to funding arrangements, ownership, governance, infrastructure and service integration—while at the same time maintaining and supporting the existing primary care workforce.

Limitations of study

Bias may have been introduced due to the overall GP response rate of 76.6% (72.1% for the for-profits and 95.5% for the non-profits). Non-responders tended to be male and reported greater than average patient loads. If the busiest GPs differ in some systematic way in their characteristics or activities, this may bias the results. The magnitude and direction of such bias is unknown. The magnitude of many of the observed differences reduces the chance of spurious conclusions being drawn.

Conclusions

New Zealand's traditional pattern of primary care staffing is likely to inhibit the implementation of population-based primary care. The *Primary Care Strategy* poses challenges to primary care teams as they are currently constituted in traditional practices, that are likely to be beyond their means to fully respond to. For the past 15 years

community-governed non-profit practices have been trailing staffing arrangements and forms of practice better suited to the diverse demands of population-based primary care. Even though in absolute and relative terms the community-governed non-profit primary care sector is small, by providing a much needed element of professional and organisational pluralism and by experimenting with more diverse staffing arrangements, it is likely to continue to have an influence on primary care policy development in New Zealand.

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Table 1: Presence of primary care team members in practice (% of practices)

	Total	Independent	Member of independent practitioner association	Community governed non-profit	P value
Unweighted~	n=192	n=32	n=134	n=26	
Doctors	100	100	100	100	
Nurses	93.2	76.7	98.0	92.3	0.006
Managers	54.5	32.5	59.4	92.3	<0.001
Reception staff	94.4	91.2	95.4	92.3	0.485
Administrative staff	29.8	21.2	30.0	84.6	<0.001
Community workers	3.0	1.2	1.0	61.5	<0.001
Midwives	8.4	4.8	8.3	34.6	<0.001
Other	17.0	14.5	15.9	57.7	<0.001

Table 2: Mean number of practitioners in primary care practices (full-time equivalents)

	Total	Independent	Member of independent practitioner association	Community governed non-profit	P value*
Unweighted~	n=192	n=32	n=134	n=26	
Types of personnel					
Doctors	2.1	1.6	2.3	2.6	0.015, 0.001, 0.04
Nurses	1.6	1.0	1.7	2.8	0.004, <0.001, <0.001
Managers	0.4	0.3	0.4	0.9	0.142, <0.001, <0.001
Reception staff	1.5	1.2	1.5	1.6	0.112, 0.026, 0.288
Administrative staff	0.3	0.1	0.3	1.0	0.048, <0.001, <0.001
Community workers	0.05	0.03	0.01	1.4	0.197, <0.001, <0.001
Midwives	0.07	0.01	0.06	0.75	0.098, <0.001, <0.001
Other	0.1	0.2	0.1	0.5	0.475, 0.086, <0.001
Ethnicity of personnel					
NZ European	5.9	5.0	6.3	5.6	0.136, 0.386, 0.116
Maori	0.3	0.2	0.2	4.3	0.877, <0.001, <0.001
Pacific	0.1	0.1	0.04	1.2	0.289, <0.001, <0.001
Asian	0.3	0.4	0.3	0.5	0.632, 0.404, 0.017

* P values listed for the following contrasts: 1) independent vs IPA; 2) independent vs non-profit; 3) IPA vs non-profit

Table 3: General practitioner characteristics—number

	Total	Independent	Member of independent practitioner association	Community governed non-profit	P value*
Unweighted~	n=262	n=37	n=162	n=63	
Years in practice					
Ave years in current practice	10.9	12.6	10.7	5.6	0.285, 0.003, <0.001
Ave total years in general practice	15.4	18.4	14.9	11.5	0.098, 0.006, 0.003
Ave hrs per mth CME	8.2	10.3	7.6	8.5	0.311, 0.468, 0.268
Employment					
Self-employed	91.0%	97.1%	92.6%	19.3%	<0.001
Salaried	11.4%	3.3%	9.4%	82.0%	<0.001
Half-days worked per week	7.8	8.0	7.8	7.3	0.633, 0.114, 0.054
Provide intrapartum care	8.7%	11.8%	8.1%	4.9%	0.305
Ave number daytime patients per week	102.2	101.8	103.5	77.6	0.850, 0.021, 0.001

* For numeric variables, P values listed for the following contrasts: 1) independent vs IPA; 2) independent vs non-profit; 3) IPA vs non-profit

Table 4: Mean number of practitioners in primary care practices by funding mechanism (full-time equivalents)

	Fee-for-service	Capitation	P value
Unweighted~	n=112	n=77	
Types of personnel			
Doctors	2.0	2.4	0.233
Nurses	1.4	1.9	0.051
Managers	0.3	0.5	0.08
Reception staff	1.4	1.7	0.147
Administrative staff	0.2	0.4	0.126
Community workers	0.02	0.16	<0.001
Midwives	0.04	0.17	0.080
Other	0.1	0.1	0.806
Ethnicity of personnel			
NZ European	5.6	6.6	0.242
Maori	0.2	0.7	0.018
Pacific	0.1	0.1	0.135
Asian	0.3	0.3	0.708

Table 5: Nurse working style—mean

	Total	Independent	Member of independent practitioner association	P value
Unweighted~	n=150	n=21	n=129	
Number of appointments in average week	24.2	29.6	23.4	0.262
Time allocation for nurse appointment (mins)	16.8	17.7	16.6	0.570
Average hours spent per week: direct patient contact	16.1	17.2	16.0	0.544
Average hours spent per week: patient contact by phone	6.0	5.3	6.1	0.404
Average hours spent per week: administration	6.3	5.0	6.5	0.156
Average hours spent per week: housekeeping	2.5	2.3	2.5	0.678
Average hours spent per week: other duties	3.4	4.1	3.3	0.513

Table 6: Nurse duties—%

	Total	Independent	Member of independent practitioner association	P value
Unweighted~	n=150	n=21	n=129	
Patients make appointments specifically to see the nurse	87.9	87.5	88.0	0.957
Practice charges fee for nurse appointment	78.4	67.0	80.0	0.321
Carry out				
Immunisations	95.8	93.6	96.1	0.709
Child care advice	89.4	77.8	91.0	0.256
Cervical smears	46.0	44.6	46.2	0.915
Contraception	63.0	45.4	65.4	0.131
Dressings	94.4	83.5	95.9	0.227
Suturing	23.6	27.8	23.0	0.668
Counselling	60.3	51.1	61.6	0.376
Group education	10.4	1.5	11.6	0.042
Dietary & Lifestyle counselling	89.4	80.3	90.6	0.322
Repeat prescriptions	79.0	72.9	79.9	0.542
Blood taking	53.4	48.0	54.2	0.607
Home visiting	50.7	39.6	52.3	0.306