General practice changes in South Auckland from 1990 to 1999:

A threat to continuity of care?

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ABSTRACT

Aims

To compare composition and organisation of general practices in South Auckland between 1990 and 1999 and consider implications for continuity of care.

Methods

Mail questionnaires were sent to all general practitioners in South Auckland in 1990 and in 1999.

Results

The response rates were 88% in 1990 and 76% in 1999 (p 0.3). The mean practice size increased from 2.8 to 3.7 doctors (p 0.003), the number of GPs in solo practice halved from 31.9% to 16.7% (p 0.009), and the mean number of part-time GPs per practice doubled from 0.7 to 1.3 (p 0.0004). There was no statistically significant difference in the country of origin of the doctors between 1990 and 1999. Women in 1999, compared with the men practitioners, were more likely to work fewer than eight 'tenths' (53.3% vs 8.1%, p 0.001), were fewer years since graduation (16.1 vs 20.4, p 0.004), had worked fewer years in South Auckland (7.9 vs 12.7, p<0.001) and were less likely to be principals or partners in the practice (46.7% vs 84.7%, p<0.0001).

Conclusion

Through the 1990s there have been changes in the organisation of general practice, some of which may help and others hinder provision of continuity of care. Given that patients, practitioners and politicians value continuity of care, it is an important topic that warrants New Zealand research.

Key words

Continuity of care, general practice, gender

(NZFP 2002; 29:387–390)

Introduction

'Continuity of care' is a basic dogma of general practice[1,2] and is promoted as an important component of the new primary care strategy for New Zealand.[3] It is variously defined.[4] When studying patients, it is usually self-defined by a question that may relate to a specific provider[5] or site of care.[2,6] When studying medical records, it is usually measured by the percentage of visits a patient has made to the same doctor or practice over either one[7] or two years.[8] Continuity is highly valued by patients[9–11] and has been credited with improvements in health care[5,6] and decreasing hospitalisation.[12]

Postal questionnaires sent to all GPs and PNs in South Auckland formed part of a major study of diabetes in the area in 1990,[13] and were repeated in 1999. We report changes in practice composition or organisation between 1990 and 1999 that relate to availability of doctors or have been reported by others to be indicators of continuity of care.

Methods

In 1990 a list of all GPs known to work in South Auckland was compiled from Auckland Area Health Board records and by telephoning each practice. The questionnaires were mailed in June 1990. The responses were anonymous but tagged with a temporary identification code to track non-responders who were followed up by letter and then by telephone. The non-responding doctors came from the full range of practice sizes and localities.

In 1999 the list of GPs was obtained from a commercial mail-list company, and supplemented by phoning those in the current Telecom telephone directory but not on the commercial list. The questionnaires were posted in November 1999. We attempted to contact non-responders by phone, a second letter and a second phone call. The questionnaires were named.

SPSS 9.0 software was used for analysis. Means are compared by *t*-test for continuous data. Proportions of categorical data are compared with Chi squared and ordinal data with Mann-Whitney U. Percentages reported are the proportion of valid responses only. Statistical significance is cited at $p \leq 0.05$, and all tests are two-tailed. Ethics approval was given by the Auckland Area Health Board Ethics Committee in 1990 and the Auckland University Human Subjects Ethics Committee in 1999.

Table 1: Respondents and their practices

Results are percentages of valid responses unless stated otherwise

		1990 (n 163)	1999 (n 186)	*p*
Years since graduation	mean (se)	18.5 (0.93)	19.0 (0.70)	ns
NZ medical degree		66.9	70.3	ns
Full-time GPs per practice	mean (se)	2.1 (0.14)	2.5 (0.15)	ns
Part-time GPs per practice	mean (se)	0.7 (0.07)	1.3 (0.14)	0.0004
Full+part-time GPs per practice	mean (se)	2.8 (0.17)	3.7 (0.23)	0.003
Patients per respondent *	< 1000	13.4	14.4	ns
	1-2000	40.7	33.8	
	> 2000	45.6	51.9	
Patients whole practice *	< 1000	6.1	1.2	0.003
	1-2000	17.7	10.6	
	2-5000	40.8	34.2	
	5-10,000	16.3	32.3	
	> 10,000	19.0	21.7	
Any practice nurse		81.0	93.7	ns
Any receptionist		92.6	92.6	ns
Any practice manager		38.0	56.4	0.04

** In 1999 68% obtained this data from their computer*

Results

In 1990, 226 'GPs' were identified; 41 were unavailable (maternity or prolonged leave, retirement, moved from the area or not being a GP), leaving 185 GPs eligible. In 1999, 273 'GPs' in 149 practices were identified; 27 were unavailable for the same reasons, leaving 245 GPs eligible. The commercial list identified 72.2% of eligible GPs. The response rate in 1990 was 88.1% (163 in 101 practices), and was not significantly different from the 1999 rate of 75.9% (186 in 107 practices) (p 0.3). Almost half the 1999 respondents (49%) had worked in South Auckland for 10 or more years, so would have received the 1990 questionnaire.

Continuity is highly valued by patients and has been credited with improvements in health care and decreasing hospitalisation

Table 1 describes the doctors and their practices, comparing 1990 with 1999. In 1990, 52 (31.9%) GPs were in solo practice – 44 full-time and eight part-time. By 1999 this had dropped to 16.7% (p 0.009) – 30 full-time and one part-time. The number of part-time doctors per practice nearly doubled, and was largely responsible for the rise in total doctors per practice. 'Full-time' and 'part-time' were self-defined by the respondent. The most common practice sizes were still two or three GPs (41.3% 1990, 40.7% 1999, ns). However, the number of practices with four to six GPs increased from 14.2% to 33.1% ($p<0.0001$). In 1999, 61.8% of GPs were recording their clinical notes on computer. (Computer use was not asked about in 1990.)

When asked about the university of their medical degree, the percentages (1990, 1999) were Otago (44.2, 39.5), Auckland (22.7, 30.8), UK and Ireland (12.3, 8.6), India and Sri Lanka (10.4, 9.2), South Africa (3.1, 7.6), Australia (3.1, 1.6), USA, Canada, South Pacific, Hong Kong,

Singapore and China (4.3, 2.7). None of the differences between university of degree in1990 and 1999 were statistically significant.

In 1990, 37 respondents were women, compared with 60 in 1999 (22.7% vs 32.6%, p 0.04). In 1990 the mean years since graduation for women was 14.2 (se 1.91) and for men 19.8 (se 1.04) (p 0.01), and in 1999 was 16.1 (se 1.20) for women and 20.4 (se 0.8) for men (p 0.004). No gender differences were apparent in either 1990 or 1999 for size of practice (as indicated by numbers of GPs, patients, practice nurses, receptionists or practice managers), ethnicity of patients, proportion trained in New Zealand, or having means to recall patients.

Table 2 compares women and men respondents for questions asked only in 1999. Women accounted for the majority (76.2%) of doctors working fewer than eight 'tenths', were more recent graduates and had spent less time in South Auckland. They were much less likely than the men to be 'principal or associate' in the practice and they were more likely to be a locum or an employee. In 1999 there was no difference in proportions recording clinical notes on computer.

Table 2: Female and male respondents 1999

Results are percentages of valid responses unless stated otherwise

		Female (n 60)	Male (n 124)	*p*
Years worked in South Auckland	mean (se)	7.9 (0.90)	12.7 (0.81)	<0.001
Position in practice	principal	46.7	84.7	<0.0001
	employee	16.7	8.1	
	locum	31.7	6.4	
	other	5.0	1.9	
Tenths worked	1–4	21.7	2.4	<0.001*
	5–7.5	31.7	5.6	
	8–10	46.7	91.9	

** p calculated on ratio data before grouping*

Discussion

The main findings of this study are that in South Auckland, from 1990 to 1999 the average number of GPs per practice increased markedly, and there was a corresponding halving in the number of solo GPs. The increase in GPs per practice was mainly due to an increase in part-time workers, most of whom were women. Women were also less likely to be principals of their practice, were more recent graduates and had worked fewer years in South Auckland – this is all compatible with known data on women GPs in New Zealand.[14] We are not aware of any published information on changes in New Zealand general practice composition in the 1990s, a time of major changes in the health system.

A strength of our study is the high response rates, 88% and 76%, that compare well with other new Zealand GP mail surveys,[15,14,16] and the average response rate of 61% in one British journal.[17] GPs are less likely to reply if they are older or are not professionally active in the area being studied by a questionnaire.[17,18] The main weakness of the study is that we measured indicators of continuity of care, rather than measuring continuity directly.

It is unclear the extent to which the changes we found apply to the rest of New Zealand. South Auckland is largely urban and in the 1996 Census included a population of 341 700 (over 9% of the New Zealand population) of whom 52.9% were New Zealand European, 17.4% Maori, 16.1% Pacific, 7.9% Asian and 5.7% other ethnicities.[19] The population includes some of the most deprived people in New Zealand.[20] The proportion of women in the national medical workforce has risen from 23.9% in 1990[21] to 32.6% in 2000[22] (which matches the figure for GPs in our 1999 sample). The 1999 women GPs who responded to our survey seem very similar to a national sample of women GPs in 1996 reported by Tracey and Shaw,[14] with no statistically significant difference in mean years since graduation, proportions working less than five 'tenths', and proportions who were principals or partners in their practice.

In Auckland, over 25% of primary care consultations now take place within 'accident and medical' clinics rather than traditional general practice

The recent Primary Health Care Strategy places importance on continuity of the primary care team.[3] Nevertheless, 'continuity of doctor' is more strongly linked to better patient outcomes than is 'continuity of practice site'.[7] A Canadian study of both patients' and GPs' views of patient 'loyalty' found that patients clearly identify with a particular doctor rather than a clinic.[23] Furthermore, in one Danish study, patients rated 'continuity of doctor' more highly than did GPs.[11] 'Continuity of doctor' might be compromised by the increase in doctors per practice from 1990 to 1999, unless the practice runs a 'personal list' system limiting the access of patients to more than one doctor in a practice.[8] We are not aware of information on use of 'personal lists' in New Zealand. The increase in part-time doctors may im-

pede patient access to continuity of doctor. On the other hand, most of the part-time GPs are women, and at least in one Dutch study, women GPs provide better continuity of care than do males, as measured by women GPs having a higher proportion of repeat consultations.[24]

The university of medical degree was taken as an indication of country of origin for the GPs, and was of interest as doctors trained in different countries may have different approaches to primary care,[25] however we noted no differences from 1990 to 1999.

Regardless of changes in practice composition, the greatest challenge to continuity of care may be that, at least in Auckland, over 25% of primary care consultations now take place within 'accident and medical' clinics rather than traditional general practice (A Sullivan, personal communication 2001). Nevertheless, a recent study of Auckland North Shore patients found that even those attending an 'accident and medical' clinic placed a high value on continuity, but in this instance convenience was a higher priority.[10]

A Canadian study of both patients' and GPs' views of patient 'loyalty' found that patients clearly identify with a particular doctor rather than a clinic

The changes in practice composition that may make continuity more difficult to achieve, move general practice nearer to the 'accident and medical clinic' model of primary care delivery. Long-term it seems desirable that these clinics embrace the general practice ideal of continuity, while general practice embraces the ideal of patient convenience, so that eventually the two systems of care can integrate. It is not yet clear how the government policy favouring continuity can be brought to reality. Given the importance of continuity of care to patient priorities, health outcomes, and its place in government policy (but the realities of patient-as-consumer) there is a need for New Zealand research in this aspect of primary care.

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