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PAPER

Trends in general practice in the Waikato, 1979-80/1991-92, I: practitioner availability, service use and clinical activity

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Abstract

Aims. To document trends in availability and use of general practitioner services and in patterns of clinical activity for the Waikato over the period 1979-80 to 1991-92.

Methods. The data are drawn from a baseline and a follow-up survey of general practice in the Waikato region representing a 1% sample of all in-surgery, in-hours, week-day encounters at two points in time. The data were recorded by participating general practitioners in four collection weeks spaced over the period of a year. In total, 9468 and 10 235 patient encounter forms were completed. **Results.** While the number of general practitioners increased by a half over the period, average workload declined by a fifth, the inflation-adjusted value of the usual adult fee increased by nearly 50% and visits went up by an average of a half a visit a year. Clinical activity declined for prescribing but increased for referral and follow-up.

Conclusions. The increase in availability of general practitioners over the last decade has been associated with significant changes in patterns of practice organisation, service utilisation and clinical activity. Further research is required into the potential impact of greater service availability on patient demand and resource use.

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While the decade of the 1980s witnessed some significant structural changes in the organisation and delivery of health services in New Zealand, apart from minor adjustments to benefit levels and the introduction of the short-lived voluntary contract scheme in 1990, few modifications of any substance occurred in the primary care sector over this period.¹ Nevertheless, a steady increase in the availability of general practitioner services took place, through the 1980s, matched by a corresponding rise in utilisation and primary medical care-related public expenditure.^{2,3}

This relationship over time and across regions between general practitioner availability and levels of utilisation has been well documented for New Zealand but has only been established using cross-sectional and aggregated time-series data.³ This paper presents population- and practice-based information on trends in supply, utilisation and resource use for a single geographical area over the period of a decade.

Methods

Study site. The data for this study are drawn from baseline and follow-up surveys of general practice carried out in 1979-1980 and 1991-1992 in the Waikato region. For administrative purposes the first survey covered the then Hamilton Health District (a regional district of the Department of Health), while the second covered the Waikato Area Health Board. Only data for the common geographical area covered by the Hamilton Health District in the two surveys are included in this analysis. As can be seen from Table 1, total population at the census aged slightly and grew by a little over 10 000 over the decade 1981-91.

Data collection. The core survey instrument is the encounter report form modelled on that used in the National Ambulatory Medical Care Survey in the United States.⁴ The population of general practitioners in the two surveys was 128 and 187

respectively (see Table 1). Response rates represent the proportion of possible participating general practitioner/weeks completed. These rates were 83% and 69%, generating 9468 and 10 235 encounter forms respectively.

Table 1. Baseline and follow-up surveys of general practice in the Hamilton Health District: key features of methodology and demography.

Key feature	CoMedCa (1979-1980)	WaiMedCa (1991-1992)
Methodology		
Population of GPs	128	187 ^a
GP response rate	83%	69% ^b
Number of encounters	9468	10 235 ^c
Demography		
Population at census	257 607 (1981)	269 400 (1991)
Age structure at census		
% 0-14	30.0%	25.6%
% 15-44	44.9%	46.2%
% 45+	25.1%	26.2%
Total	100.0% (1981)	100.0% (1991)

CoMedCa: Community Medical Care Survey; WaiMedCa: Waikato Medical Care Survey; GP: general practitioner.

^aIncludes three accident and emergency practices; ^bRate calculated after excluding the three accident and emergency practices, all of which participated; ^cIncludes 542 encounters from the three accident and emergency practices in the sample.

Variables. Each patient encounter record was completed by the general practitioner at the time of the contact. A full account of sampling and data collection details, including a copy of the encounter form and a description of variable definitions, have been outlined elsewhere.⁵

Of particular relevance to the following analysis are the following definitions: New episode: first presentation to the doctor of a problem. Illness condition: a problem with which symptoms were associated. Severity: a condition was defined as "more serious" if, in the doctor's view, the gravity of the patient's complaint was high (Community Medical Care Survey) or the extent of overall disability was such that the patient was unable to fulfil the usual obligations of a person of comparable age (Waikato Medical Care Survey). Medical amenability: causes of mortality considered to be avoidable through medical intervention.⁶ Workload: mean number of consultations per week, as estimated by the participating doctor for an average week.

Patient charge: the normal fee charged for an adult consultation reported by each doctor (CoMedCa) or the mid-point of the normal adult charge reported by each practice (WaiMedCa). The 1979 figures were inflation-adjusted to 1992 using the price index for physician incomes.⁷

Rates of medical contact are calculated using as the denominator the population usually resident and at home on census night 1991, and, as numerator, the 1% sample of encounters inflated to represent all weekday encounters registered over the period of a year. The data have been age- and gender-adjusted using the age groupings 0-14, 15-24, 25-44, 45-64, 65+, with the 1991 New Zealand census distribution as the standard population.

Results

Table 2 provides summary information from the two surveys on trends in practice characteristics, service utilisation and clinical activity. As can be seen from the upper panel of the table, there have been marked changes

in the pattern of general practice over the period covered by the two surveys; in essence, the number of general practitioners increased by half, the proportion in single-handed practices declined, the average number of patients seen per week declined by a fifth, the average number of visits a year per head of population increased from 3.5 to 4.0, and the inflation-adjusted value of the total patient fee for an adult visit (that is, direct charge plus subsidy) grew from \$18.29 to \$26.92.

Table 2. Trends in practice characteristics, service utilisation and clinical activity levels: summary of sample results, 1979-80 and 1991-92.

Key feature	CoMedCa (1979-80)	WaiMedCa (1991-92)		
Practice characteristics				
Number of GPs in sample	115	172*		
Percentage in single handed practice	39.8%	29.4%		
Average number of encounters per week	166	130		
Average number of visits p.a. per capita of population	3.5 (n=9648)	4.0 (n=10 235)		
Average adult charge	\$14.24 ^b	\$26.92		
Adult subsidy	\$4.05 ^b	\$2.0 ^c		
Total Fee	\$18.29 ^b	\$28.92		
Service utilisation and clinical activity				
	Males	Females	Males	Females
Average number of visits p.a. per capita of population ^d	3.0	4.0	3.5	4.5
Percentage of visits ^d for which:				
Script written	60.0	63.0	55.6	57.7
Investigation ordered	14.8	20.6	15.9	17.8
Referral arranged	7.7	7.1	11.0	8.6
Follow-up requested	68.4	72.9	74.2	77.3

CoMedCa: Community Medical Care Survey; WaiMedCa: Waikato Medical Care Survey; GP: general practitioner.

*Includes three A&E practices; ^b1979 inflation-adjusted to 1992, excludes beneficiaries; ^cThis represents an averaging of subsidies over this period for this category of visit. Before February 1992 - which was the mid-point of the survey - the standard adult subsidy was \$4.0. After that date it dropped to \$0.0 (for higher income adults). ^dAge-adjusted.

The lower panel of the table shows that the overall increase in patient visits affected males and females equally - with both groups increasing their rate of medical contact by about half a visit a year - and for both illness and non-illness conditions. The picture for levels of clinical activity, however, was more mixed; while rates of prescribing declined and investigations remained stable, rates for both referrals and follow-up increased.

These data relate to all visits. New episodes of illness, however, might be considered least susceptible to provider influence and most likely to reflect need-related, patient-generated demand for care. Overall, other results show that the rate of medical contact increased for new episodes: from 1.8 to 2.0 for males and from 2.2 to 2.5 for females. For new episodes with a single diagnosis, visits for less serious conditions appeared to increase while those for more serious episodes declined or remained static. Medical amenability did not appear to affect the rate of increase in utilisation.

Discussion

While previous research has documented an association between supply and service activity for aggregate data both over time and between areas,^{2,3} this study has been able to follow these relationships between availability of supply

and utilisation and clinical activity much more closely - albeit only for a single region of New Zealand.

While there are some significant elements of stability to emerge from this analysis - the demographic basis of the demand for general practice services changed hardly, for example - the pattern of supply and the organisation of general practice, by contrast, were highly dynamic.

There are good grounds for accepting the results of this study as broadly representative. In the first place there are sound reasons to believe that the Waikato region provides a demographically representative cross-section, if not a replica, of the country as a whole.⁵ Secondly, there is evidence that the practitioner community is not unrepresentative of general practice in New Zealand.⁸ Thirdly, both the workload and utilisation rates are close to those previously calculated for this region (a little below and a little above the national average respectively).³ Finally, the trends in availability - an annual increment of 3.8% - are consistent with national data (an annualised growth rate for the period 1982-1990 of 4.1%).³

Previous research in New Zealand³ and overseas⁹ has documented a strong relationship in geographic variations between availability and uptake of health services. By also demonstrating an association over time between declining workload and an increase in the inflation-adjusted value of the total patient fee, this study comes much closer to establishing the potential impact of supply-related factors on the demand for medical care.^{10,11} Severity apart, the increase in uptake occurs more or less uniformly across all categories of service. These findings have implications for the planning and funding of primary medical care services and for the achievement of different policy goals in this sector of the health system.¹²

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