



## **Making it pay and helping us stay: the viability of a rural general practice in New Zealand**

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### **Abstract**

**Aim** To provide a description of the invoices created for services delivered in a private general practice in a rural area of New Zealand with a view to assessing the value of the services to the community and the rewards to the private business.

**Method** Analysis of computer-based invoices and description of the working arrangements of the practice.

**Results** A 24-hour, 365-day service was delivered to a local community at a cost of \$129 per patient per year, exclusive of the cost of drugs, laboratory, and other investigations and hospital referrals. The rewards for the professionals were mixed, with adequate reimbursement for 8am–5pm, 5-day care but those for the out-of-hours and maternity parts of the business were poor, with hourly rates far below New Zealand's minimum wage.

**Conclusion** The recent cosmetic changes to *New Zealand Primary Health Care* have failed to resolve the challenge of delivering personal medical care to rural communities. Investment in the small business of general practice has the potential to solve the rural health crisis.

A recent Australian study<sup>1</sup> defined a viable rural general practice as one that meets the specific medical needs of the community and takes into account the professional, personal, and economic needs of the practitioners and their families. The principles involved in that study were applied to measurements made in a rural general practice in Winton, New Zealand in the financial year 1999/2000. The practice was owned by a partnership of three general practitioners with a registrar, locum GPs, practice nurses, and administrative staff.

Winton is a country town with a population of 2191 (1996 Census) situated 30 km north of Invercargill in Southland Province. The town serves a farming area with a population of approximately 7000, and 41% of the workforce are employed in agriculture or forestry-related occupations.

Only 4.4% of the population are unemployed. The ethnic background of the population is 89% NZ Pakeha/European, and 7% New Zealand Maori. Winton township has traditionally been a retirement area and 32% of the population is aged 60 years or over compared to 23% for the Winton Ward and 14% for the Southland Province as a whole.

At the time of the study, the Winton Medical Practice was run as a private business with three general practitioners as the partners. In addition, locum practitioners, a registrar, 2.5 full time equivalent (FTE) practice nurses, and 2 full time administrators were employed.

Winton Medical Practice is a training practice for undergraduate students in the Dunedin School of Medicine and the General Practice Training Programme of the RNZCGP. Sharing the same location is a birthing unit, geriatric day hospital, premises of the Plunket Society, and a private physiotherapy practice.

The workload of the practice during the study was also shared by two District Nurses employed by Southern Health. Other personnel involved in delivering services to the community were the volunteer ambulance officers of the St John Ambulance and the domiciliary services of the Southland Hospice.

## Methods

The denominator of the practice during the year was determined by using the age/sex register of the practice in May 1999. This practice register was compared with a sample of the electoral roll of the town in 1998 to identify those present on both.

All invoices for services in the financial year 1999–2000, as provided by general practitioners and nurses, were identified from the practice computer. The services invoiced were categorised into general medical services, accidents, maternity, and nursing services. The value of all these services was identified by the cost of the invoices. The sums were inclusive of 12.5% Goods and Services Tax (GST) levied on these services.

Because each invoice was given as a single sum, it was only possible to allocate the government subsidy claimed for General Medical Services (GMS), Accident Compensation Corporation (ACC), maternity and immunisation benefits, and the patient fees recommended for each service by calculating the recommended fee for each invoice. The calculation of the actual fee claimed from patients was further complicated by the fact that discount was offered for an immediate cash payment of each invoice and deducted via a negative invoice.

The practice accounts from the financial year 1 April 1999 to 31 March 2000 were used to verify the income and expenditure of the business. This identified income as coming from patients, GMS benefit, ACC, and maternity services.

## Results

On May 11 1999, 6320 (3219 males, 3101 females) individuals were enrolled with the practice. This figure was used as the denominator population.

The invoices resulting from delivery of general medical services is shown in Table 1. At that time, consultations were fully subsidised for children under 6 years, partly subsidised for older children and beneficiaries, and unsubsidised for adults.

At the time of the study, the full payment for consultation was \$34 and \$32.50 for children under 6 years. Subsidies were nationally fixed by government but additional fees could be levied for additional services as shown.

In the year of the study, the major proportion of the earnings were obtained from the provision of consultation, with 90% of the earnings coming from consultation fees, only 2% from procedures such as minor surgery and the remaining 8% from repeat prescriptions and insurance work.

**Table 1. Invoices for general medical services (NZ\$ inclusive of GST)**

Service	Number	Actual invoices	Recommended fee		
			GMS	Patient	Total
Consultations*	14,815	\$523,032**	\$179,281	\$321,559	\$500,840
<b>Procedures</b>					
Removal of lesion	55	\$2144		\$2475	\$2475
Vasectomy	19	\$4724		\$4750	\$4750
Insert IUCD	6	\$48		\$48	\$48
Catheterisation	6	\$104		\$120	\$120
<b>Other services</b>					
Repeat prescription	2939	\$35,347		\$35,268	\$35,268
Medical insurance examination	40	\$4936		\$4800	\$4800
Medical Insurance report	161	\$7078		\$7938	\$7938
<b>Total</b>	<b>18,041</b>	<b>\$576,807</b>	<b>\$179,281 (32%)</b>	<b>\$376,958 (68%)</b>	<b>\$556,239</b>

\*The totals were

Under 6 years old	1940
Subsidised juvenile	652
Subsidised adult	5512
Unsubsidised juvenile	1139
Unsubsidised adult	5473
Drug changes	99

\*\*Invoices included discount for cash

Invoices for accidents were submitted to ACC, to private medical insurers, or to the patient. The fees payable were fixed for each procedure, and a patient surcharge was added. Table 2 shows the main categories under which claims were made. Wound care, including suturing, and fracture management were the main areas of activity. However 82% of the invoices were for consultation alone. For accident work the subsidy from the ACC was 70% with the patient only paying 30%.

Many of the consultations which took place in office hours involved input from both general practitioners and practice nurses. Table 3 shows the invoices which resulted from the occasions when the practice nurses carried out these activities. A wide range of services were delivered by the nurses, but all of these had to be borne by the patient.

In 1999/2000, a GMS subsidy could only be claimed if the patient was seen by a general practitioner and this limited the development of a nurse-led service. It can be seen that the maximum charge for any of these services was \$10.

Maternity benefits in New Zealand were paid on condition that there was no private cost to the patient. Table 4 shows the activity for the year including 37 deliveries in the birthing unit adjacent to the practice which was staffed by midwives. The remaining 29 deliveries were carried out in the specialist unit, 30 km away, either by design or by transfer in labour.

**Table 2. Invoices for accident services (NZ\$ inclusive of GST)**

Service	Number	Actual invoices	Recommended fee		
			ACC	Patient	Total
Accident consultation	3570	\$114,906	\$93,379	\$27,872	\$121,251
Accident consultation (private)	454	\$15,066		\$15,436	\$15,436
Wound care	355	\$8234	\$8199	\$2074	\$10,273
Plastering	65	\$6910	\$6407	\$1450	\$7857
Aspiration/injection of joint	44	\$875	\$766	\$204	\$970
Digital anaesthesia	31	\$754	\$831	\$186	\$1017
X-rays	330	\$8590	\$7920	\$4950	\$12,870
Foreign body removal	131	\$3220	\$3304	\$621	\$4125
<b>Total</b>	<b>4980</b>	<b>\$157,955</b>	<b>\$121,006 (70%)</b>	<b>\$52,793 (30%)</b>	<b>\$173,799</b>

**Table 3. Invoices for practice nurse services (NZ\$ inclusive of GST)**

Service	Number of invoices	GMS	Patient
Child immunisation	378	\$4158	
Influenza immunisation – aged	607	\$10653	
Influenza immunisation – others	95		\$1800
Blood pressure check	162		\$810
Injections	111		\$222
Audiometry	27		\$270
ECG	149		\$1490
Nebuliser/vitalograph	54		\$292
Ear syringing	80		\$600
Liquid nitrogen	184		\$2760
<b>Total</b>	<b>1847</b>	<b>\$14,811(64%)</b>	<b>\$8244 (36%)</b>

**Table 4. Invoices for maternity services (NZ\$ inclusive of GST)**

Service	Number	Invoices	Cost per service
First antenatal	66	\$3238	\$49.07
Other antenatal	599	\$15,709	\$26.23
Deliveries	37	\$11,738	\$317.23
Puerperal care	150	\$3943	\$26.28
Infant postnatal check	61	\$1601	\$26.24
Maternal postnatal check	64	\$3133	\$48.96
<b>Total</b>	<b>977</b>	<b>\$39362</b>	<b>\$40.29</b>

Most of the consultations (94%) took place between 8am and 6pm, Monday to Friday. However Table 5 shows there were 1216 out-of-hours consultations; 1050 of these were at weekends or before 8pm, 118 were from 8pm to midnight, and 48 were from midnight to 8 am. Only 128 of these consultations (<1%) took place in the patients' home. There was no subsidy for any of these activities and the cost had to be borne by the patient. The income from these activities accounted for less than 3% of the total invoices.

**Table 5. Invoices for out-of-hours consultations and visits (NZ\$ inclusive of GST)**

Time and place of service	Number	Value of invoices
<b>Office consultations</b>		
After hours (weekends, public holidays, weekdays 6–8pm)	1029	\$12,782
Evenings (8–12 pm)	124	\$2617
Night (12 midnight–8am)	45	\$1709
<b>Home visits</b>		
During office hours	93	\$995
After hours (weekends, public holidays, weekdays 6–8pm)	22	\$428
Evenings (8–12pm)	8	\$320
Night (12 midnight–8am)	5	\$230
<b>Total</b>	<b>1326</b>	<b>\$19081</b>

Table 6 summarises the invoices and shows that there were 21,110 patient contacts with practice staff involving invoices for 27,171 different items of service (1.3 invoices per contact.) Of the contacts, 1826 (7%) were with the practice nurse alone, and 19,585 (93%) were with a general practitioner. Therefore the overall GP consultation rate was 3.1 consultations per patient per year.

The proportion of services qualifying for subsidy ranged from 100% for maternity services, 70% for accidents, 64% for seeing the nurse, 32% for seeing a GP, to zero for any form of after-hours care.

**Table 6. Summary of practice activity in 1999: frequency and cost (\$NZ inclusive of GST)**

Activity	Invoices	Contacts	Total invoices (%)	Patient	Subsidy
General medical services	18,041	14,716	\$576,807	\$392,228	\$184,579
Accidents	4980	3570	\$157,955	\$47,386	\$110,569
Maternity	977	977	\$39,412	\$0	\$39,412
Nursing	1847	1847	\$23,055	\$8244	\$14,811
Visits and after hours surcharges	1326	1326*	\$19,081	\$19,081	\$0
<b>Total</b>	<b>27,171</b>	<b>21,110*</b>	<b>\$815,310</b>	<b>\$465,939</b>	<b>\$349,371</b>

\*An additional charge in GMS or accidents.

Because the invoices for after-hours care were known, it was possible (for general medical and accident consultations) to calculate an hourly rate of invoicing for the various times at which people were seen. This was done by calculating a mean value for the invoices (\$40.18) and adding the mean values for each time.

Table 7 shows that this hourly rate varied from \$251.81 during office hours to \$1.35 during the night, both inclusive of GST.

**Table 7. Relative rewards for office and out of hours work (general medical and accidents only)**

Time	Annual hours	Contacts	Invoices	Hourly rate
Office hours	2740	17,053	\$689,968	\$251.81
Out-of-hours	6044	1233	\$67,629	\$11.43
Weekends, public holidays, weeknights	1652	1051	\$55,440	\$33.55
8pm to 12 midnight	1464	132	\$8241	\$5.63
12 midnight to 8am	2928	50	\$3948	\$1.35
<b>Total</b>	<b>8784</b>	<b>18,286</b>	<b>\$757,597</b>	<b>\$86.25</b>

Mean fee per consult = \$734,762 / 18,286 = \$40.18; Weekends etc fee: \$40.18 + \$12.57 = \$52.75;  
8pm–12 midnight fee: \$40.18 + \$22.25 = \$62.43; 12 midnight–8am fee: \$40.18 + \$38.78 = \$78.96.

All of these results are based on invoices, what then of receipts and the rewards for delivering comprehensive 24-hour care to the community? It can be seen from Table 8 that the total value of the invoices for the year was \$815,430 of which \$465,939 was billed to the patients and \$349,371 to the various forms of health subsidy. The patients were offered a discount for cash payment which amounted to \$44,612. A further \$52,666 was payable as GST, leaving patient billings at \$368,661.

Table 8 also shows the income and expenditure balance for the practice in the year. The total income of the practice from the practice accounts was \$780,742 with the addition of a practice nurse subsidy of \$44,631 and sundry income of \$22,084; 47.5% of this income came from patient fees and 49.6% from state subsidy.

The operating expenses were 50.2% of which the main items were staff wages (50%), locum payments (20.4%), and rent (6.7%) The partnership profit was \$130,611 for each partner for the year. This sum was before allowable expenses such as home office, car, and educational activities and had no provision for superannuation and study leave.

**Table 8. Income and expenditure for 1999–2000 (\$NZ exclusive of GST)**

Income		Expenditure	
Patient fees	\$370,913	Staff wages	\$195,893
GMS payments	\$220,372	Locum payments	\$79,811
ACC payments	\$88,877	Drugs/dressings	\$29,526
Maternity	\$33,865	Administration	\$57,834
Nurse subsidy	\$44,631		
Sundry	\$22,084		
<b>Total income</b>	<b>\$780,742</b>	<b>Total expenditure</b>	<b>\$391,788</b>
<b>Profit</b>	<b>\$391,833</b>		
<b>Share of profits</b>	<b>\$130,611</b>		

## Discussion

This study of the invoices generated by a rural practice in the course of a financial year provides a comprehensive picture of the activities and costs of generalist practice in New Zealand in 1999/2000 and demonstrates the complexity of running a small business in a well-defined rural community. It confirms my view of New Zealand

General Practice written in 1987<sup>2</sup> as a magnificent but sadly underrated and underutilised service.

From the invoices it can be seen how the medical needs of 6320 people were managed on the 366 days of that year. The coverage was comprehensive from antenatal care, the delivery of babies either in the local birthing unit or in shared care, through immunisation programmes. All trauma was managed locally with the doctor on call holding an ambulance pager and called to every emergency.

The centre had X-ray facilities and limb fractures and wound care were managed. Minor surgical procedures were carried out and aged and palliative care. This was all done at a cost of \$129 per enrolled patient, excluding the cost of investigation, prescriptions and referrals to secondary care. There seems little doubt that the business met the specific medical needs of the community and that this side of the viability definition was satisfied.

However the second aspect of the definition of viability takes into account the professional, personal, and economic needs of the practitioners and their families. The major difficulties lay in the strangely inappropriate way in which the various parts of this comprehensive service was funded, the necessity of personal commitment by the principals, and the commitment required by the practitioners and their families

We seemed to operate three businesses in Winton with quite different reward systems and staffing requirements:

- **The office-based practice** operated from 8am-6pm Monday through Friday with 4.2 FTE doctors, 2.5 nurses, and full support staff. This seemed to operate well with invoices valued at \$251.81 per hour. Although the government subsidy accounted for 43% of the total earnings, there seems little doubt that this was a viable area of the business. The major problem lay in the inability to utilise the practice nurses in an appropriate way. Subsidy was only available for immunisation benefit and a wide range of activities could have been explored if funding had been available to these professionals.
- **The obstetric practice** had 3 GP obstetricians providing cover 24 hours a day and 7 days per week, working in combination with fully funded midwives. This was fully subsidised by the state but for the GP obstetricians the rewards amounted to \$4.49 per hour of cover. The reasons for the virtual extinction of GP obstetrics in New Zealand have been well described by Ferguson- the only one he does not mention is that the levels of maternity benefit set by the government meant that there was no good business case for GP obstetrics.<sup>3</sup>
- **The after-hours practice** After-hours care in New Zealand, as in other countries, has always been assumed to be part of the contract between the general practitioner and the patient. However long ago it ceased to be subsidised by the state, and in cities this obligation has been fulfilled by the setting up of After Hours Medical Services. In rural areas there seemed no choice but to provide it ourselves. A recent study has shown that 97% of GPs in rural areas provided such care as compared to 40% of the GPs in Auckland.<sup>4</sup> The absurd hourly rates of reward demonstrate the cost of this responsibility to general practitioners and their families. The irony is that the partners had to pay a fixed sum to locums to encourage them to join the rota.

If we were to create a business plan for the practice from these figures the simple way to maximise profit and ensure viability is to close the obstetric and after-hours aspects of the business. This, however, could be regarded as a form of asset stripping, the practice of buying a company in order to sell its assets individually at a profit.

The only problem in this context is that these businesses would have no value unless other groups regard them as viable. For example, in the obstetric business, the total income was \$39,362 for a service that covered 365 days of the year. For the business to be operated by the current urban solution (independent LMC midwives) there would need to be at least three to provide continuous cover.

Clearly \$39,362 is not going to do this. They could all consider themselves as working part-time, but the on-call commitments would mean they are unable to have some other sort of job to supplement their maternity income. Likewise, the “after-hours care business” was worth less than \$20,000 per annum for a service which needs at least four resident doctors to operate it. The “business” solution is to use paramedics and transport to retrieve dire emergencies and ask the other patients to travel long distances to after-hours centres.

The unfortunate effect of these solutions is to create a contradiction—an office-based practice in rural areas. The problem is that the doctors, unlike the patients, no longer need to be resident and so the doctors stay in town and the patients travel. All this in towns which previously had a viable (if not lucrative) business.

## **Postscript**

Four years on, rural practice in Winton and in New Zealand is still in crisis and the question remains (taking into account the professional, personal, and economic needs of the practitioners and their families) as to which model of practice is viable by meeting the specific medical needs of the community.

In July 2002, the New Zealand Government introduced a set of primary care reforms, the basis of which seems to be political ideology rather than evidence. The language of the protagonists<sup>5</sup> of this initiative betrays their bias. We are told that the reforms are “based on the Alma Ata Declaration’s vision of primary healthcare, aimed at reducing average co-payments, moving from fee-for-service to capitation funding, promoting population health management competencies, and developing a not for profit organisational infrastructure to deliver primary care.”

One of the authors elsewhere provides his view of the role of the small business model of general practice, arguing in favour of public or nonprofit ownership “in order to protect the public from commercial exploitation.”<sup>6</sup> It could be argued that this is an important social and scientific experiment but, unfortunately, it is flawed because, simultaneous with its introduction, many funding inequities have been fixed by generous funding. The irony is that given the generous capitation payments currently available, it is calculated that the Winton population would qualify for a large increase in subsidy which would have meant that these business partners could have treated everyone free and had a generous increase in the level of their “commercial exploitation.”

The offer of a comparative study of the invoices and workload in the years following the change of model has not so far been accepted although it would doubtless give answers to this important question.

Such comparative studies might give an explanation as to why the small business model of rural general practice became uneconomic in the period 1990–2000 in New Zealand. In the author's opinion, the problem results from the political swing between the business and the population health approaches, neither of which took into account the ecology of rural areas. We need to revisit the funding involved in the provision of maternity care and after-hours care and treat these as an opportunity for growth, not a threat to viability.

This study demonstrates that, given adequate numbers of vocationally trained rural generalists and reasonable government subsidies, the small business model offers the best chance of providing adequate and appropriate services to rural areas, including obstetric, out-of-hours care and long-term continuity of care.

As Del Mar has wisely said, "GPs are at the forefront of evidence-based patient care. It would be good if GPs' financing systems were established by good evidence, but little exists regarding the effects on service of different payment systems. Thus, we need to trial different systems, not simply enact the latest political ideology."<sup>7</sup>

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**Acknowledgements:** I thank my business partners Ewan Adam and Stephen Walsh for permission to publish this data as well as the staff of the Winton Medical Practice for their part in delivering a superb service to the people of Winton.

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