Family Doctors: Methodology and description of the activity of private GPs

The National Primary Medical Care Survey (NatMedCa): 2001/02 Report 1

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Executive Summary

Aims. The National Primary Medical Care Survey was undertaken to describe primary health care in New Zealand, including the characteristics of providers and their practices, the patients they see, the problems presented and the management offered. The study covered private general practices (i.e. family doctors), community-governed organisations, and Accident and Medical (A&M) clinics and Emergency Departments. It was intended to compare data across practice types as well as over time.

Subsidiary aims included gathering information on the activities of nurses in primary health care, trialling an electronic data collection tool and developing coding software.

It is intended to compare data across practice these types and between the present study and the Waikato Primary Medical Care Survey (WaiMedCa) carried out in 1991/92.

This paper provides a descriptive report on the week-day, day-time content of the work of private general practitioners (GPs). No statistical tests are applied. Other papers will report on after-hours activities and on other types of practice, and will analyse differences in practice content that have occurred over time or that exist between practice settings.

Methods. A nationally representative, multi-stage sample of private GPs, stratified by place and practice type, was drawn. Each GP was asked to provide data on themselves and on their practice, and to report on a 25% sample of patients in each of two week-long periods. Over the same period, all community-governed primary health care practices in New Zealand were invited to participate, as were a 50% random sample of all A&M clinics, and four representative hospital emergency departments.

Medical practitioners in general practices and A&M clinics completed questionnaires, as did the nurses associated with them. Patient and visit data were recorded on a purpose-designed form.

Results. Data were contributed by 199 private GPs, they logged 36,211 visits and provided detailed information on 8258.

- The characteristics of the patients were:
  - Attendance rates were higher among those below five years, and women over age 55 and men over age 65.
  - Almost half the sample was eligible for a Community Services Card or a High User Health Card.
  - About 5% of the sample had poor social support and a similar number were not fluent in English.
- Details of the consultations included:
  - GP and patient were unknown to each other in 12% of consultations.

- Mean visit duration was about 15 minutes.
- Rapport was low in 1.3% of visits and the GP was uncertain of the appropriate action to take in 2.8%.
- ACC claims were made at 9.4% of visits; maternity visits made up 2.3%.

- Problems presented had the following features:
  - Problems were judged urgent in 37.7% of visits.
  - Urgency was related to youth and to residence in a deprived area.
  - Problems were judged life-threatening in 2% of cases and the rate increased with age; the problem was self limiting in 34% of cases.
  - On average 1.4 reasons-for-visit were recorded; in 45% the problem was already diagnosed; in 5.8% a preventive activity was planned.
  - On average 1.6 problems were recorded; 49% were new or short term.
  - Respiratory was the commonest type of problem presented.
- Management activities noted were:
  - Investigations were ordered at 25% of visits; most were laboratory tests.
  - Visits resulted in emergency referral in 1.3% of cases, other medical or surgical referral in 8%, and in a specific follow-up appointment in 57%.
  - Drugs were prescribed at 66% of visits with an average of 129 items per 100 visits; the number of items, but not of prescriptions, increased with age.
  - The commonest group of drugs were those affecting the respiratory system.
  - Non-drug management was recorded at 62% of visits; the commonest item was health advice and this was given more frequently to females.
  - In the parameters examined there are only minor differences between practice types.

Conclusions and implications. No statistical tests have been applied in this report and only impressions can be drawn. There is little evidence that practice type systematically affects practice content or activities. More detailed analyses will show whether suggestive differences in treatment and referral patterns are of substantive importance. It would appear that capitated funding alone is insufficient to induce a move towards medical delegation or increase preventive activity.

1 Introduction

Primary health care is available locally, is accessible by self-referral, provides an entrée into the more general health system, and is the only current experience of medical and nursing care for the majority of the population. In New Zealand there are more than 15 million primary health care visits annually. The annual cost to the Government of primary health care, including tests and pharmaceuticals, was $1.8 billion in 2000/01 and a further $1.2 billion was added by patients, out-of-pocket or from insurance.[1]

This major sector is poorly documented in terms of record-keeping. Claims for state subsidised services are recorded centrally, but detail of the interaction is not recorded by the government.Data are available through analysis of PMS systems but there are difficulties and expenses that act against systematic analysis country-wide. Hence, detailed analysis is undertaken only intermittently. Unsubsidised services are not recorded in any summarised form. Improvements in data reporting are proposed but do not require information on diagnosis or the reason for consultation.[2]

1.1 The survey and its history

This report is the first publication from the National Primary Medical Care Survey (NatMedCa) undertaken in 2001/02, with funding from the Health Research Council of New Zealand. The purpose of the survey was to expand knowledge of the frequency and nature of the activities that comprise primary health care. The survey will also allow comparison of these activities across various settings and over time, and will investigate the feasibility of various methods of collecting such data on a routine basis.

The survey is based on the methodology of the National Ambulatory Medical Care Survey (NAMCS), under way continuously in the United States since 1973.[3] A rotating sample of practitioners is drawn from members of the American Medical Association, and data are gathered on a proportion of the ambulatory patients seen by each one over the period of a week. Data are now available on 892 million visits,[4] and include the reason for the visit, the problems managed and the treatment given, as well as patient socio-demographic information.

Surveys using the same general methodology have been undertaken previously in New Zealand. Studies were completed in the Hamilton Health District[5] and in Canterbury[6] in 1979/80, and in the Waikato in 1991/92.[7] These studies generated data on 9469, 4629 and 12,833 patient visits, respectively. Data on the practitioners and their practices were also gathered. The Waikato survey (WaiMedCa) gathered data on more items than the classic NAMCS model, with information obtained on patient occupation and ethnicity, the source of payment, and doctors' assessment of their level of uncertainty and the quality of the rapport achieved. A sub-set of patients provided information on their perception of the visit and of their progress after two weeks. WaiMedCa

generated a description of primary health care[7] and analyses of practitioner availability,[8] utilisation by patient group,[9 10 11] prescribing,[12] the contribution of nurses[13] and patient outcomes.[14]

A similar survey of general practitioners (GPs) and their patients was undertaken in Australia in 1990/01. This recorded data on 63,092 patient visits from 231 practitioners. The team responsible published a general description of the content of Australian general practice[15] and a comparison of urban and rural practice.[16]

Related studies of the morbidity encountered in general practice have been undertaken periodically in the United Kingdom since 1958,[17] with the most recent done in 1991/92.[18] Surveys of conditions presented by primary health care patients have been published from Sri Lanka[19] and South Africa.[20] Canadian use of insurance records of primary medical care usage has been mainly directed at assessing the appropriate size of the future medical workforce.[21 22]

Research has shown that better data are obtained using visit questionnaires than accessing patient records.[23] Electronic data collection possesses the potential to reduce the burden and increase the accuracy of data collection from general practice and has been used in the UK[24] and in New Zealand.[25] Such a methodology is limited by the accuracy and completeness of routine data entry and by the number of practices that do not have electronic patient records.

1.2 The public health system in New Zealand

In common with similar countries, primary health care in New Zealand has traditionally been delivered by private GPs operating within a small business model. Patients' costs have been subsidised by the government since 1941, but at present there are significant co-payments. Financial barriers to primary health care in New Zealand are high by OECD standards.[26]

There have been a number of changes in the General Medical Services benefit (GMS) in the recent past, and more are pending. The subsidy, originally set at 75% (7s/6d) of the then usual fee, did not change until 1991 and had by then become only a small percentage of the average fee. Before 1991, the major part of practitioners' incomes derived from direct or insurance-based patient payments.

In 1991, the subsidy scheme was revised and payments were targeted in favour of the young and beneficiaries.[27] Beneficiaries are identified by possession of a Community Services Card (CSC), and those who use health services frequently could obtain similar benefits by acquiring a High User Health Card (HUHC). In 1997, "free care for under-sixes" was introduced; the subsidy was increased and in many cases resulted in a free or near to free service for this age group.

Pharmaceuticals are heavily subsidised, but there is a fixed co-payment, the level of which depends on card status. Investigations have remained fully subsidised. Secondary health services are available by referral from primary health care and are typically free when accessed through public hospitals. Delays for, and actual limitations of, elective care encourage those able to access private services: approximately 50% of elective surgery is provided in the private system.[28]

1.3 Provider changes

A number of variations on the private GP practice have emerged over the last 40 years. Health practitioners may not be attracted to remote areas or to populations unable to make co-payments. In response, from the 1960s "special medical areas" – set up under the 1938 Social Security Act – were identified by the government in remoter sections of the country and provided with more highly subsidised health services. From 1980 there were a number of initiatives supported by the trade union movement to deliver affordable primary health care to families on low incomes. From the late 1980s Accident and Medical clinics (A&Ms) were developed by entrepreneurial doctors to provide urgent care; they also appealed to those wanting convenient, no-appointment care away from home.[29]

The Regional Health Authorities (RHAs), created under the Health and Disabilities Act 1993, encouraged the development of Independent Practitioners Associations (IPAs), which negotiated funding contracts, pharmacy and laboratory budgets and undertook some management services on behalf of their members. Midland RHA took the lead in developing capitated IPA contracts for primary health care, with funding determined by the number and type of people enrolled with the practice.

Community-based groups, some in the former special areas, developed services focusing on high-need groups; these services used salaried GPs, extended the role of primary health care nurses and provided access to other (e.g. dental) services. These organisations, complementing private and governmental provision of care, are usually called third-sector or community-governed practices. In addition to describing primary health care, the NatMedCa research project will examine differences in the clientele using, and the care provided by, these types of organisations.

1.4 Implications of provider changes

There is evidence that budget holding (whether for visits, tests or drugs) may alter clinician behaviour.[30] [31] On the positive side, visits may be better targeted (e.g. test results given over the telephone), nursing skills better used, unnecessary tests reduced and cheaper drugs used, where appropriate. On the negative side, patients may be under-serviced for visits, tests or treatments. International precedents may or may not apply in New Zealand,[32] and what studies have been undertaken here have expressed caution in relating contractual changes to health care improvements.[33]

A&M clinics may deal with many acute problems, improving the quality of care and reducing the pressure on Emergency Departments. However, they may be unable to provide continuity of care, undertake screening or understand family dynamics if their patients are largely casual attenders.[34]

Third sector practices – practices established and governed by community groups – aim to provide inexpensive care for populations with high social and health needs. It needs to be shown that they do attract such groups and that they are still able to provide high-quality care.[35]

1.5 Classification of providers

Discussion with service providers led to the recognition of four variables that distinguish provider types. These are given in Table 1.1.

Table 1.1 Key variables of provider types

Services	Status of practitioners	Ownership	Funding
Mainly GP Wider professional team	Self-employed Salaried	Community Practitioner Investor State	GMS FfS* Budget holding Capitation based Bulk funding

* General Medical Services and Fee for Service

The variables cluster into the six types shown in Table 1.2. The major exception to this clustering process are IPAs providing multiple services and integrated illness management. Many Māori-focused health care providers are community-governed, although some follow more traditional general practice models.

Table 1.2 Characteristics of practice types

Type	Services	Status of practitioner	Ownership	Funding
1. Independent GPs	Medicine and nursing	Self-employed	Practitioner	FfS
2. GPs within most IPAs	Medicine and nursing	Self-employed	Practitioner	FfS + Budget for drugs/tests
3. GPs within capitated IPAs	Medicine and nursing	Self-employed	Practitioner	Capitated budget for visits/drugs/tests + FfS
4. Community governed	Medicine, nursing and other health workers	Salaried	Community	Capitated budget for visits/drugs/ tests + FfS
5. Accident and medical	Special focus medicine	Salaried	Investors	FfS
6. Emergency departments	Emergency care	Salaried	State	Bulk funded

FfS = Fee for Service. Includes patient out-of-pocket payments and GMS (General Medical Services) and ACC (Accident Compensation Corporation) contributions.

1.6 This report

This report details the methodology of the study. It gives the results for primary health care practices based on private GPs. Results include response rates, patient characteristics, reasons-for-visit and problems managed, investigations, treatment and disposition.

Based on funding arrangements, the report distinguishes three types of practice within this grouping:

- independent practitioners (independent)
- IPA members (IPA)
- capitated IPA members (capitated).

(See types 1–3 in Table 1.2.) No statistical tests are applied in this report. Any comparative judgements that are made are indicative only and do not carry the weight of statistical significance. Note that percentages may not add up to exactly 100% due to rounding.

Details of visits during "office hours" (Monday to Friday, 8 am to 6 pm) are provided. Data for after-hours services and results for, and comparisons with, community-governed practices, A&Ms and emergency departments will be published elsewhere. Data on the characteristics of the practitioners and of the practices will also be analysed elsewhere.

1.7 Primary health care strategy

Since the completion of the survey, the Government has begun to implement further changes in primary health care.[36] Primary Health Organisations, eligible for management funding, will undertake to care for registered populations, extra funding targeted to those with highest need will be used to reduce user charges, and practice teams (including nurse practitioners and primary/secondary condition management) will be encouraged. A detailed description of the content of primary health care, as presented in this report for general medical practice in 2001/02, will be essential to the evaluation of these initiatives in the future.

2 Methodology

2.1 Organisation

The research, funded by the Health Research Council of New Zealand, was undertaken by a project team within the Centre for Health Services Research and Policy, School of Population Health, Faculty of Medical and Health Sciences, University of Auckland. Advice and support were provided by a research team representing the Departments of General Practice and/or Public Health at each of the four New Zealand Medical Schools.

2.2 Research design

The research followed the general methodology developed by the National Ambulatory Medical Care Survey (NAMCS) in the United States and previously used in New Zealand by Scott et al,[37] the RNZCGP[6] and McAvoy et al.[7] Randomly selected practitioners were asked to complete reports on every fourth consultation for a period of one week. This data collection was repeated after an interval of six months.

The most recent survey in New Zealand using this methodology was undertaken in the Waikato in 1991/92,[7] and combined a survey of patient visits with a survey of practitioners, practice nurses and practices. The present survey included these components but went beyond WaiMedCa in covering the whole country and by making provision for a comparison of practice types.

2.3 Questionnaires

Copies of the questionnaires are provided in the appendices. The log questionnaire (Appendix A), completed for all patients seen during the data collection period, recorded gender, date of birth, ethnicity and Community Services Card status. It also provided the means for recording the address of the fourth patient. The address was detached (at the practice) and sent to an independent agency for coding to the New Zealand Index of Deprivation (NZDep96/01), a measure of residential area deprivation.[38]

The visit questionnaire (Appendix B) recorded data about the patient, his or her problem(s) and the management recommended. In comparison with WaiMedCa, questions were added concerning the patient's level of social support, the presence of a "hidden agenda",[38] and an evaluation of the urgency and gravity of the problem. Questions about patient occupation and initiation of the visit, which had previously proven difficult to interpret, were dropped.

The practitioner questionnaire (Appendix C) obtained data on practitioner background and current activities. The nurse questionnaire (Appendix D) gathered data on the range of clinical responsibilities and other duties, and practice nurse questionnaire (Appendix E) that was utilised for nurses whose patient visits were not sampled.

The expanded practice questionnaire (Appendix F) was derived from the work of Crampton et al[35] and covered hours of access, services provided, equipment on-site, personnel employed and various aspects of practice management. In particular, the history and the contractual arrangements within the practice were recorded. Questions about clinical practices used in WaiMedCa were excluded.

2.4 Ethnicity

Previous studies of general practice have been criticised for having inaccurate data on patient ethnicity.[35 39] In the present study, copies of the ethnicity question used in the 2001 Census were provided for use with each patient. Multiple choices were allowed, though mutually exclusive categories are reported here with prioritisation of Māori and Pacific people.

2.5 Sampling

Sampling practitioners. The goal of the practitioner sampling process was to achieve representation of all practice types (see Table 1.2), with adequate numbers in each category. At the same time it aimed to meet two partially opposed criteria: to ensure representation of the whole country and to recruit participants who had contributed to the WaiMedCa Study in 1991 so that changes over time could be better assessed.

Sampling frame. A sampling frame of all active GPs was generated from telephone White Pages listings. Other sources included the Medical Council Register and laboratory client lists. Comparison of the Register with White Pages listings showed a poor match. In particular, many individuals entered on the Register did not appear to be in active practice in New Zealand. Conversely, some practitioners listed in the telephone book did not appear on the register. The laboratory list was not freely available and only included practitioners receiving results electronically.

It is unlikely that a practice would exist without a telephone listing. On the other hand, it is probable that some individual practitioners will not be listed by name, due to their recent arrival, or trainee or locum status. Provision was made to include such people during the process of recruitment. An additional check on the completeness of the sampling frame was made by comparison with the lists of members of IPAs. In no case was a practice discovered which had not already been identified.

Practice type and geographic distribution. Practice type was determined using information provided by IPAs. All North Island IPAs kindly provided a list of members. The two IPAs that included capitated practices identified any that had retained fee-for-service funding.

Geographical distribution is analysed using two parameters: population density and site. Density, or settlement size, refers to the demographic setting, and the categories are rural/small town (under 30,000), town (up to 100,000), city (up to 500,000) and metropolitan (over 500,000). Table 2.1 lists New Zealand settlements classified in this way. It has face validity in relation to health services in that Auckland has multiple major hospitals and is the only settlement with a population over 500,000, cities have tertiary hospitals, towns all have a hospital (except that Hastings and Napier share one), and rural centres do not. The total population from the settlements in each category represent similar proportions of the national population.

Table 2.1 Settlements and population density in New Zealand

Metro > 500,000	**City 100–500,000**	**Town 30–100,000**		**Rural < 30,000**
Auckland	Hamilton Wellington (includes Porirua, Lower Hutt and Upper Hutt) Christchurch Dunedin	Palmerston North Tauranga Whangarei Hastings Rotorua Napier	Invercargill New Plymouth Nelson Gisborne Wanganui	All others
928,000 (25%)	**872,000 (24%)**	**658,000 (18%)**		**1,207,000 (33%)**

The concept of site recognises differences between the North and South Islands and between the different cities and provincial areas (some characteristics of the major cities are summarised in Table 2.2). In order to achieve national representation, practitioners were stratified by site as well as by settlement size.

Table 2.2 Selected characteristics of major cities

Auckland	Largest city; large Māori and recent immigrant population; multiple IPAs
Hamilton	Smaller city; two IPAs with a high proportion of capitated practices; site of WaiMedCa survey
Wellington	Capital city; single IPA
Christchurch	Majority of GPs belong to Pegasus, an early IPA with unique funding arrangements
Dunedin	Smaller city; South Island location

The cost of recruitment in sparsely populated areas suggested that an area sample should be used. Rural Waikato and the Coromandel Peninsula were sampled so that practitioners who had participated in WaiMedCa would be well represented. The Bay of Plenty, Taranaki and Wanganui were added so that there would be adequate representation of capitated practices. Canterbury, Otago, Oamaru/Timaru and Southland were included to represent the South Island. This process selected a scattering of rural areas well dispersed across the country.

Of the total population, areas representing 18% were not sampled. Table 2.3 compares the populations of the small towns and rural areas selected with those not sampled. Note that the percentage of Māori is lower in the included areas but that age distribution and gender are closely similar.

Table 2.3 Population comparison (1996 Census)

	New Zealand	Auckland cities	Hamilton, Wellington,* Christchurch Dunedin	Total rural and towns sampled †	Total rural and towns not sampled ‡	Total sampled
Total population	3,618,306	927,774	872,463	1,150,425	667,644	2,950,662
Males	49	49	49	50	49	49
Females	51	51	51	50	51	51
Age under 5	8	8	7	8	8	8
Age 5–19	23	22	21	23	23	22
Age 20–64	58	60	60	56	56	58
Age over 64	12	10	12	13	13	11
European	72	60	77	76	73	71
Māori	14	12	10	17	20	13
Other	14	28	13	7	7	15

***** Wellington includes Porirua, Upper Hutt and Lower Hutt.

† Towns and rural areas included rural Auckland, Waikato, Bay of Plenty, Taranaki, Wanganui, Kapiti, Canterbury, Otago and Southland.

‡ Towns and rural areas not selected at the first stage of sampling in stratum 7: Northland, Tairawhiti, Hawke's Bay, Wairarapa, Manawatu, Nelson/Marlborough and the West Coast.

Sampling process. Seven strata were used in the sample selection of GPs for NatMedCa. While the first stratum covered those GPs working in community-governed practices, GPs in private practice (i.e. family doctors) were sampled through strata 2–7. The strata for sample selection were defined as follows:

1. a single stratum of GPs working in community-governed non-profits, who were sampled with certainty wherever they were located
2. GPs who had participated in the earlier WaiMedCa study
3. independent GPs in metropolitan and city areas
4. IPA GPs in metropolitan and city areas
5. capitated GPs in metropolitan and city areas
6. GPs in areas surrounding the big cities
7. GPs in towns and rural areas.

In order to generate adequate, and approximately equal, numbers of GPs in strata 2–7, different sampling fractions were chosen. In the analysis presented in this report (which excludes community-governed practices), results are weighted to compensate for the different likelihood of being sampled.

To define the population – and initial strata – for private GPs, a grid was constructed with columns corresponding to three practice types and rows distinguishing settlements by size and site. An additional category of GPs who participated in WaiMedCa was also created. The number of practitioners within each cell was determined from the sampling frame (i.e. listings in the telephone White Pages). The overall description of the population of private GPs is shown in Table 2.4, together with a column for GPs in community-governed non-profits. Note that GPs in stratum 7 (towns and rural areas) were sampled in two stages:

1. a representative four out of 11 areas were first selected on judgement criteria
2. 59 GPs were then sampled randomly from these four areas.

Account was taken of the two-stage sampling process in stratum 7 in the calculation of standard errors in all subsequent analyses.

Table 2.4 Practitioner population, by practice type and stratum

	Independent	IPA	Capitated	Community-governed non-profit †	Total
North Shore City	35	99	2	1	137
Waitakere City	52	34	6	9	101
Auckland City	122	168	12	3	305
Manukau City	46	81	24	13	164
Auckland	**255**	**382**	**44**	**26**	**707**
Hamilton	22	9	27	3	61
Wellington	97	161	0	25	283
Christchurch	60	257	0	3	320
Dunedin	10	77	0	0	87
Cities	**189**	**504**	**27**	**31**	**751**
Rural Auckland	49	47	8	0	104
Rural Waikato	17	31	33	2	83
Rural Wellington	16	29	0	0	45
Rural Canterbury	12	59	0	0	71
Rural Otago	11	55	0	0	66
City-surrounding rural	**105**	**221**	**41**	**2**	**369**
City	9	4	30	0	43
Rural	8	24	43	0	75
WaiMedCa	**17**	**28**	**73**	**0**	**118**
Northland	3	62	20	8	93
Bay of Plenty*	28	11	150	0	189
Gisborne	26	4	4	10	44
Taranaki*	26	12	38	3	79
Hawke's Bay	5	92	11	1	109
Wanganui*	0	39	3	4	46
Manawatu	7	75	0	0	82
Wairarapa	13	10	0	0	23
Nelson/Blenheim	5	82	0	0	87
West Coast	1	11	0	0	12
Southland*	28	65	0	0	93
Towns/rural	**142**	**463**	**226**	**26**	**857**
National total	**708**	**1598**	**411**	**85**	**2802**

* Area in sample.

† Community-governed non-profits sampled wherever identified.

The private GP population data – which form the basis for the current report – are summarised in Table 2.5, which also gives the size of the samples drawn.

Table 2.5 Summary of private GP population and sample drawn

	Independent	IPA	Capitated	Total
Population sampled				
WaiMedCa	17	28	73	118
Auckland/cities	444	886	71	1401
All towns/rural	247	684	276	1198
Total	708	1598	420	2717
Sample drawn				
WaiMedCa	8	11	39	58
Auckland/cities	50	72	40	162
Towns and rural	18	51	45	114
Total	76	134	124	334

In Table 2.6 the sampling probabilities used in weighting the results for all strata are shown (the weighting factor is the inverse of the sampling probability). Note that for Auckland and the cities the sampling probability differed by practice type, while for the towns and rural areas a single sampling probability was applied across types.

The number sampled was calculated to allow for a 30% refusal/ineligible rate. The actual process of listing practitioners and drawing a sample was undertaken by the project team in the North Island, by Pegasus IPA in Christchurch, and by HealthLink South IPA for the remainder of the South Island. The sampled practitioners were entered on master sheets for each geographical area.

Table 2.6 Sample size and sampling percentage, all strata

Stratum	Description	Population of GPs	Sample drawn	GP weights	GPs in sample
1	Community-governed	66	63	1.00*	63
2	WaiMedCa	118	58	2.03	38
3	City independent	444	50	8.88	23
4	City IPA	886	72	12.31	51
5	City capitated	71	40	1.78	21
6	Areas around the big cities	367	55	6.67	33
7	Remaining town and rural	831	59	14.08	33
Total		**2783**	**397**		**262**

* Sampled with certainty.

Replacement and ineligibility. When attempts were made to contact a GP it was sometimes found that he or she was on sabbatical, had moved or had retired. In such cases, if a new practitioner had been appointed specifically to take on the departed person's workload, the new practitioner was asked to participate. Where there was no direct replacement, the sampled GP was marked ineligible. The other cause of ineligibility was the discovery that the individual was in speciality practice.

As mentioned above, it was anticipated that additional practitioners who had not appeared on the sampling frame might be discovered when the practice of a sampled practitioner was approached. This might be because the practitioner was newly arrived or was an assistant, a trainee or a locum. When such people were identified they were added to the overall sample, and 13%, matching the average sampling ratio were requested to join the study.

Nurses. Nurses work within most primary health care organisations but there is no way to list them prior to a visit to a practice. Each practitioner was asked to identify the practice nurse with whom they worked most closely. These nurses were asked to complete a practice nurse questionnaire.

Some nurses work as independent nurse practitioners. Among Health Care Aotearoa (see below) members, where nurses have an expanded role, nurses were treated as autonomous practitioners. None of these were present in the sample of private GPs analysed in this report.

2.6 Timing

Practitioners were approached serially in order to distribute data collection periods seasonally. Data collection began in March 2001 and continued over 18 months. Each practitioner was asked to initiate the second week of data collection six months after the first.

2.7 Other organisations (results not included in this report)

Community-governed organisations, and A&M clinics were also studied. A list of community-governed organisations was obtained from their umbrella organisation, Health Care Aotearoa. To this were added organisations that fulfilled at least two of the following criteria:

- they had a community board of governance (i.e. board members who were not health professionals)
- there was no equity ownership by GPs or others associated with the organisation
- there was no profit distribution to GPs or others working for the organisation.

A list of A&M clinics was obtained from White Pages listings and supplemented by data from their association. These two types of clinic have in common that medical practitioners are typically salaried and are not listed in the White Pages.

The number of practitioners working in third-sector organisations is relatively small, and these clinics are of particular interest given their dedication to poorly served populations. All clinics were approached, and all practitioners and nurses were asked to participate. Among A&M clinics a sampling percentage of 50% was adopted, and all practitioners within the sampled clinics were asked to participate.

Leading suppliers of primary health care software were approached and asked to develop an option to allow visit data, comparable to that provided by a paper questionnaire, to be gathered and transmitted electronically. The author of Next Generation© software took on this task, and all practitioners using that programme were asked to contribute to an "electronic arm" of the study.

A group of emergency departments were also asked to participate by providing electronic data on visits taking place during a week from each quarter of the year in 2001. These departments were selected to represent a range of populations.

Finally, approaches were made to GP after-hours services. The nature of the work and the large number of participating practitioners constitute major barriers to the acceptance of survey research in this context. Grouped data on after-hours care has been gathered to estimate the relative volume of this work.

The data from after-hours services, community-governed organisations, A&M clinics, the electronic GP survey and the emergency departments will be presented elsewhere.

2.8 Sampling of visits

A pad of forms, structured to select each fourth patient, was provided. On the first page the visits of four patients could be logged; on the second, a detailed record of the visit of the fourth patient was entered. The process was repeated on each subsequent pair of pages.

2.9 Recruitment and data collection processes

Recruitment of selected practitioners included the following steps:

1. a letter from the project team requesting participation, accompanied by a letter of support from the local Professor of General Practice
2. a phone call from the Clinical Director or the Project Manager requesting an interview
3. a practice visit, at which an information booklet was presented and, with agreement, a time for data collection was set; an estimate of weekly patient numbers was obtained and practitioners signed a consent form

4. delivery of the visit record pad and other questionnaires by courier
5. a phone call early in the week of data collection as a reminder
6. follow-up phone call(s) if the data pack was not returned
7. a phone call prior to the second week of data collection
8. delivery of the second visit record pad by courier
9. follow-up phone call(s) if the second data pack was not returned
10. a short questionnaire was sent to GPs who felt unable to contribute to the research.

Note that a small payment was made to practitioners based on the number of completed visit forms. This was seen as recognition of the opportunity cost of contributing to research, and was based on an hourly rate similar to the after-cost earnings of GPs. The Royal New Zealand College of General Practitioners recognised participation as a practice review activity able to be submitted for post-graduate education credit (MOPS).

2.10 Data

Data management and entry. Unique identifying numbers were assigned to each practice and each practitioner who agreed to participate. A separate number was assigned to the associated practice nurse. These numbers were entered on the questionnaires and visit report pad prior to dispatch. The practitioners returned the forms at the end of the week of data collection using a pre-addressed courier pack. The patients' addresses were recorded and sent from the practice directly to an independent organisation for geo-coding and assignment of NZDep scores.

The progress of recruitment was entered on the master sheet. First, refusal, ineligibility or agreement to participate was recorded. Subsequently, dispatch and receipt of both phases of documents were logged. Data entry was undertaken by trained, experienced individuals using pre-formatted electronic forms. A data manager checked entries for accuracy using predetermined processes.

Weighting. In drawing the sample of GPs for NatMedCa, stratification was used to obtain adequate representation of each practice type and each area of the country (see Table 2.6). In each data base (practices, practitioners, visits), each line of data was weighted to compensate for this stratification and for the variable rates of sampling. Seven weighting strata were defined, as shown in Table 2.6.

Table 2.6 shows the GP weights associated with each stratum (calculated as the inverse of the sampling probability). Visit weights were calculated as GP weight x 4 (where 4 is the inverse of the sampling probability of each patient visit). The weight for each practice was calculated approximately by multiplying the GP weight by the inverse of the number of GPs in the practice, to compensate for the increased likelihood of sampling large practices. The weights for nurses were calculated as the practice weight multiplied by the number of nurses in the practice.

Community-governed non-profit GPs were sampled with certainty. Therefore the weight is equal to 1.

Statistical considerations. The proportions given in this and the companion reports are estimated using analytic approaches that take account of the stratified, multi-stage sampling scheme, the weights associated with each stratum, and clustering at different sampling stages. The precision of these estimated proportions can be assessed using standard error estimates that take into account the study's design parameters.

For the GP dataset (N = 199), standard errors of the percentages varied from approximately 2.1% on small percentages (around 7%) to approximately 4% on larger percentages (around 50%). For the practice dataset (N = 167), standard errors of the percentages were approximately 1.7% on small percentages (around 6%) to approximately 4.2% on large percentages (around 60%). For the visits dataset (N = 8258), standard errors of the percentages varied from approximately 0.4% on small percentages (around 5%) to approximately 0.9% on larger percentages (around 60%). Ninety-five percent confidence intervals can be estimated as approximately the percentage ± 2 standard errors of the percentage.

Standard errors have not been included routinely in the results to avoid cluttering already dense tables. Standard errors for means vary according to the distribution of the variable, so it is not possible to include indicative standard errors here.

Data classification. Patients' addresses were collected and coded, using the NZDep[38] classification of Census mesh blocks, into one of 10 deprivation categories (1 = lowest, 10 = highest). Note that in order to maintain patient anonymity, the addresses were sent directly from the practices to an independent organisation (Critchlow Associates, Wellington) for coding. The dataset available to the research team contained only the NZDep96/01 deciles for each patient.

Reason-for-visit and diagnosis were also coded, using READ version 2 (READ2). A significant number of visits to GPs do not result in a clear pathological diagnosis[40] and READ makes provision for symptoms, administrative functions, intended actions and other types of entry. Practitioners entered the variables as free text, and coding was performed electronically. The coding software, developed by Dr Ashwin Patel, assigned a READ code to each entry. When no fit was found, the software presented a set of options and the operator could choose an appropriate term. Once an entry had been manually coded any repeat would then be coded automatically in the same way.

When a coding fit was questionable, the entry was reviewed by medical personnel, who also undertook random checks of all coding. The details of the software and the checking process will be reported elsewhere. Drugs were coded (according to the Pharmacodes/ ATC system) using similar software, as were other therapeutic actions.

2.11 Grouping reasons-for-visit and problems, and drugs

READ is a hierarchical system and classifies reasons-for-visit and diagnoses either into pathology-based groups identified by a letter or, when specific pathology has not been reported, into numbered categories which include symptoms and proposed actions. The primary (first digit) categories are given in Table 2.7. In reporting the frequency of the various categories the first digit of the code was used as a grouper (e.g. H = respiratory system). Where a group of problems, indicated by the second digit, reach a threshold of 0.5% (e.g. H3 = chronic obstructive airway disease), these are also reported.

However, all the numbered action, investigation and administration categories (see Table 2.7) are treated as a single category and the value of the number is used as the second-level grouper. Where a symptom was system-specific (e.g. cough), the case was assigned to the equivalent lettered category.

Table 2.7 READ2 chapter headings

Pathology-based categories		Other categories	
A.	Infectious/parasitic	1.	History and symptoms
B.	Cancers/neoplasms	2.	Examination
C.	Endocrine/nutritional/metabolic/immunity	3.	Diagnostic procedures
D.	Blood / blood-forming organs	4.	Laboratory tests
E.	Mental	5.	Radiology
F.	Nervous system / sense organs	6.	Preventive procedures
G.	Cardiovascular/circulatory	7.	Surgical procedures
H.	Respiratory system	8.	Other procedures
J.	Digestive system	9.	Administration
K.	Genito-urinary system		
L.	Pregnancy/childbirth/puerperium		
M.	Skin / subcutaneous tissue		
N.	Musculoskeletal / connective tissue		
P.	Congenital		
Q.	Perinatal		
R.	Symptoms		
S/T.	Injury/poisoning		
Z.	Unspecified conditions		

Drugs were classified using the Pharmacodes/ATC system (see Table 2.8). The categories are anatomically based. However, anti-bacterials, which may be used across

systems, make up their own sub-group under anti-infective agents. Analgesics, which may also be used across systems, are included in drugs affecting the nervous system. In general, each group has a variety of sub-groups, which may be quite disparate. We have followed the system consistently even when reassignment of drug groups might have been possible (e.g. lipid-lowering drugs could have been put under the cardiovascular system but were left in metabolic).

Table 2.8 List of level 1 categories (Pharmacodes/ATC system)

Drug group	
1	Alimentary tract and metabolism
4	Blood and blood-forming organs
7	Cardiovascular system
10	Dermatologicals
13	Genito-urinary system
14	Systemic hormone preparations (excludes oral contraceptives)
16	Infections – agents for systemic use
19	Musculoskeletal system
22	Nervous system
25	Oncology agents and immunosuppressants
28	Respiratory system and allergies
31	Sensory organs
38	Extemporaneously compounded preparations and galenicals
40	Special foods

2.12 Ethical issues

Ethical approval, co-ordinated by the Auckland Ethics Committee, was obtained from ethics committees in all areas represented in the survey. Of particular concern was the long-term management of the data. An advisory and monitoring committee was appointed with representation from the general public and from each of the relevant professional groups. This group has the overall task of ensuring that the data are used in the public interest. Proposed analyses are provided to the group for comment, as are papers being prepared for dissemination.

GPs were provided with a full description of the research and were aware that they could withdraw from the study at any time. A signed consent was obtained at the time of recruitment, following an open discussion of the project. GP confidentiality was maintained and the dataset identifies individuals by code only.

GPs were specifically requested to refrain from putting any questions to their patients that were not justified by clinical "need-to-know". Given the anonymity of the patient data and the fact that GPs' questioning and management were not altered for the study, patient consent was not sought.

3. Recruitment and Data Collection

The sampling frame of GPs was generated in the second half of 2000. A total of 2717 GPs were identified and, of these, 25% worked in Auckland, 28% in the other major cities and 46% in smaller towns (mostly in towns with a population of less than 30,000). Only 16% worked in those rural areas that were not selected in the first stage of the sampling process in stratum 7.

Of the GPs, 26% were classified as independent, 59% as members of IPAs, and 15% (also IPA members) as capitated. GPs working in A&M centres and in community-governed organisations are excluded from this analysis. Table 2.4 (above) gives the number of GPs, both private and community-governed, by area and by practice type. Table 3.1 gives the number of private GPs contributing to the part of the survey reported here, by practice type and site. A total of 199 responded, of whom 18.6% were independent, 44.2% IPA and 37.2% capitated. Auckland supplied 22.6%, the cities 26.6%, small towns and rural areas 33.2%, and 19.6% had contributed to WaiMedCa.

Table 3.1 also gives the number of returned log and visit questionnaires. Overall, 36,211 visits were logged and 8258 visit questionnaires completed. Of those logged visits, 17.2% were from independent GPs, 44.1% from IPA GPs and 38.7% from capitated ones. Auckland supplied 22.7%, the cities 21.5%, small towns and rural areas 34.3%, and 21.5% had contributed to WaiMedCa. The percentage of logs associated with a visit form was 22.8%, and there was little variation by practice type of site (22.1–23.8%).

Table 3.1 Number of private GPs responding, and number of log (and visit) questionnaires submitted

	Independent*	IPA*	Capitated*	Total*
Auckland	12 1987 (470)	24 4228 (982)	9 1997 (478)	45 8212 (1930)
Hamilton	2 392 (90)	1 191 (47)	8 1346 (318)	11 1929 (455)
Wellington	8 891 (186)	8 1094 (259)	2 242 (57)	18 2227 (502)
Christchurch	1 56 (12)	14 2733 (634)	1 221 (49)	16 3010 (695)
Dunedin	0 0	4 632 (151)	0 0	4 632 (151)
Small town North Island	0 0	1 80 (20)	14 2334 (520)	15 2414 (540)
Small town South Island	1 149 (37)	1 77 (12)	1 187 (46)	3 413 (95)
Rural North Island	8 1711 (386)	12 2460 (540)	11 2279 (502)	31 6450 (1428)
Rural South Island	1 224 (25)	15 2735 (614)	1 189 (44)	17 3148 (683)
WaiMedCa – Hamilton	2 434 (101)	1 278 (66)	9 1610 (347)	12 2322 (514)
WaiMedCa – rural	2 388 (93)	7 1457 (339)	18 3609 (833)	27 5454 (1265)
All New Zealand	37 6232 (1400)	88 15965 (3664)	74 14014 (3194)	199 36211 (8258)

* After-hours visits were excluded.

The response rate was calculated for eligible private GPs (see Table 3.2). Overall, the response rate was 71% for phase 1 and 66.4% for phase 2. Those from rural practices who had contributed to WaiMedCa had a higher response rate (mean 82.3%), as did Wellington GPs (mean 85.6%). South Island GPs had a lower response rate (Christchurch 61%, Dunedin 58.4%, rural 63.2%).

Nearly a fifth of private GPs included in the sample proved to be ineligible (17.4% in phase one and 20.7% in phase two). Of these, 55% had left the practice, 13% were found to be in specialist practice and 32% gave other acceptable reasons.

Table 3.2 Percentage private GP response rate (of number eligible) and [percentage exclusion rate (of total number eligible plus ineligible)]

	Independent		IPA		Capitated		Total	
	Phase 1	**Phase 2**	**Phase 1**	**Phase 2**	**Phase 1**	**Phase 2**	**Phase 1**	**Phase 2**
Auckland	**66.7** (18) [43.8 (32)]	**64.7** (17) [46.9 (32)]	**80.0** (30) [3.2 (31)]	**72.4** (29) [6.5 (31)]	**50.0** (18) [21.7 (23)]	**47.1** (17) [26.1 (23)]	**68.2** (66) [23.3 (86)]	**63.5** (63) [26.7 (86)]
Hamilton	**100.0** (2) [50.0 (4)]	**100.0** (2) [50.0 (4)]	**100.0** (1) [–]	**100.0** (1) [–]	**61.5** (13) [7.1 (14)]	**61.5** (13) [7.1 (14)]	**68.8** (16) [15.8 (19)]	**68.8** (16) [15.8 (19)]
Wellington	**100.0** (6) [33.3 (9)]	**100.0** (6) [33.3 (9)]	**80.0** (10) [9.1 (11)]	**70.0** (10) [9.1 (11)]	**100.0** (2) [–]	**100.0** (1) [50.0 (2)]	**88.9** (18) [18.2 (22)]	**82.4** (17) [22.7 (22)]
Christchurch	**100.0** (1) [66.7 (3)]	**100.0** (1) [67.7 (3)]	**60.9** (23) [4.2 (24)]	**54.6** (22) [8.33 (24)]	**100.0** (1) [–]	**100.0** (1) [–]	**64.0** (25) [10.7 (28)]	**58.3** (24) [14.3 (28)]
Dunedin	**0.0** (1) [50.0 (2)]	**0.0** (1) [50.0 (2)]	**80.0** (5) [–]	**60.0** (5) [–]	–	–	**66.7** (6) [14.3 (7)]	**50.0** (6) [14.3 (7)]
Small town North Island	– [100.0 (2)]	– [100.0 (2)]	**50.0** (2) [–]	**0.0** (1) [50.0 (2)]	**77.8** (18) [28.0 (25)]	**72.2** (18) [28.0 (25)]	**75.0** (20) [31.0 (29)]	**68.4** (19) [34.5 (29)]
Small town South Island	**100.0** (1) [–]	**100.0** (1) [–]	**25.0** (4) [–]	**0.0** (4) [–]	**100.0** (1) [–]	**100.0** (1) [–]	**50.0** (6) [–]	**33.3** (6) [–]
Rural North Island	**66.7** (12) [7.7 (13)]	**66.7** (12) [7.7 (13)]	**70.6** (17) [19.1 (21)]	**60.0** (15) [28.6 (21)]	**68.8** (16) [11.1 (18)]	**66.7** (15) [16.7 (18)]	**68.9** (45) [13.5 (52)]	**64.3** (42) [19.2 (52)]
Rural South Island	**50.0** (2) [–]	**50.0** (2) [–]	**63.7** (22) [8.3 (24)]	**61.9** (21) [12.5 (24)]	**100.0** (1) [–]	**100.0** (1) [–]	**64.0** (25) [7.4 (27)]	**62.5** (24) [11.1 (27)]
WaiMedCa – Hamilton	**66.7** (3) [25.5 (4)]	**66.7** (3) [25.0 (4)]	**100.0** (1) [50.0 (2)]	**100.0** (1) [50.0 (2)]	**69.2** (13) [13.3 (15)]	**66.7** (12) [20.0 (15)]	**70.6** (17) [19.1 (21)]	**68.8** (16) [23.8 (21)]
WaiMedCa – rural	**100.0** (2) [50.0 (4)]	**100.0** (2) [50.0 (4)]	**100.0** (7) [22.2 (9)]	**100.0** (7) [22.2 (9)]	**78.3** (23) [4.2 (24)]	**73.9** (23) [4.2 (24)]	**84.4** (32) [13.5 (37)]	**81.3** (32) [13.5 (37)]
All New Zealand	**72.9** (48) [36.8 (76)]	**72.3** (47) [38.2 (76)]	**71.3** (122) [9.0 (134)]	**63.8** (116) [13.4 (134)]	**69.8** (106) [14.5(124)]	**66.7** (102) [17.7(124)]	**71.0** (276) [17.4(334)]	**66.4** (265) [20.7(334)]

Table 3.3 compares the participating and non-participating private GPs. Note that among non-participants there was a higher proportion of men and of GPs aged 35–44. Non-participants saw more patients (131 vs 103) and worked more half-days (8.4 vs 7.8) per week; however, they saw about two more patients (15.6 vs 13.2) per half day.

Table 3.3 Characteristics of participant and non-participant private GPs (percentages)

	Participants* (N = 199)	Non-participants (N = 56)
Gender % female	37.5	23.8
Age		
< 35	9.4	3.3
35–44	43.6	53.6
45–54	34.0	34.1
55–64	9.1	9.1
> 64	4.0	0
Total	100% Mean age = 45.1	100% Mean age = 45.3
Years in practice		
< 6	7.6	12.4
6–15	48.4	44.2
16–25	31.9	34.2
> 25	12.1	9.2
Total	100% Mean = 15.6	100% Mean = 15.3
Years this practice		
< 6	29.1	25.2
6–15	43.3	43.8
16–25	20.6	24.0
> 25	7.0	7.2
Total	100% Mean = 11.1	100% Mean = 11.8
Place of graduation		
New Zealand	65.6	76.6
UK	12.2	13.6
Australia	2.4	0
Other	19.8	9.8
Total	100%	100%
% RNZCGP	78.0	–
% NZMA	52.6	48.5
Size of practice (FTE)	2.1	2.2
Mean daytime patients/week	103.2	131.1
Mean half-days worked per week	7.8	8.4
Mean daytime patients per half-day	13.2	15.6

* GPs who provided visits data.

4. Characteristics of Patients

The tables in this section exclude missing data unless otherwise indicated. Table 4.1 shows the distribution of visits by patient age, distinguishing patient gender and practice type. In interpreting this information the shorter duration of the <1 and 1–5 age bands should be noted. Children under one year, and those in the 1–4 years range, are represented proportionately at four and two-and-a-half times the adult rate, respectively. There is a higher proportion of males than females in the 0–14 and 55–74 age-brackets, while the reverse is the case in the 15–44 age bracket. There appears to be little difference in patient age distribution across practice types.

Table 4.1 Distribution of patients by age and gender, as percentage of all visits (from log)

Age (years)	Whole survey			Independent	IPA	Capitated
	Males	Females	Both	Both	Both	Both
< 1	5.4	3.5	4.3	4.1	4.4	4.3
1–4	11.9	8.1	9.7	9.7	9.4	10.2
5–14	11.4	7.8	9.3	10.0	9.2	8.9
15–24	7.7	9.8	8.9	8.4	9.0	9.0
25–34	8.3	12.0	10.5	10.7	10.4	10.4
35–44	11.1	12.5	11.9	12.5	11.9	11.6
45–54	11.5	12.1	11.9	12.4	11.6	12.1
55–64	11.2	10.4	10.7	10.7	10.4	11.4
65–74	11.0	10.1	10.4	10.2	10.6	10.1
75+	10.0	13.2	11.9	10.8	12.3	11.7
Missing	0.7	0.6	0.6	0.6	0.7	0.4
Total (N)	**100% (15,204)**	**100% (20,942)**	**100% (36,211)**	**100% (6232)**	**100% (15,965)**	**100% (14,014)**

Table 4.2 presents the percentage distribution of visits, by age group and gender, as a ratio of the age and gender distribution of the population (if individuals of all ages visited GPs with the same frequency all the numbers would be unity). Again, the consultation rate is twice the average in the first five years of life. It also increases substantially above average in women from age 55 and in men from age 65.

Table 4.2 Ratio of visits to national population, by age and gender (log data)

	All ages	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	0.86	1.96	0.60	0.48	0.52	0.62	0.75	1.06	1.45	2.00
Female	1.14	1.92	0.60	0.85	0.95	0.91	1.07	1.33	1.73	2.29

The distribution of ethnicity among patients is presented in Table 4.3. Note that, overall, 75.8% affiliate with New Zealand European, 11.8% with Māori, 3.7% with Pacific peoples, 3.7% are distributed between Chinese and Indian affiliation, and 5.1% are given as "other". These figures parallel national population data. New Zealand European patients make up a higher-than-average proportion of the clientele of IPA practices and a lower-than-average proportion of capitated practice patients. The table also gives card status, with 48.5% of individuals claiming some government benefit. Possession of an HUHC is much less common than possession of a CSC. These card data vary little between practice types, but independent practices have a slightly lower level of card-holding patients.

Table 4.3 Percentage distribution of all patients, by ethnicity and card status (from log)

	Total*	Independent	IPA	Capitated
N	36,211	6,232	15,965	14,014
Ethnicity				
New Zealand European	75.8	75.7	79.0	69.6
Māori	11.8	10.0	7.9	20.5
Samoan	1.8	1.2	2.5	0.7
Cook Island	0.7	0.2	1.0	0.6
Tongan	0.9	0.3	1.3	0.4
Niuean	0.3	0.2	0.5	0.1
Chinese	1.8	3.7	1.5	1.2
Indian	1.9	3.4	1.3	2.0
Other	5.1	5.4	5.0	5.0
Total	100%	100%	100%	100%
Card status				
No card	51.6	56.7	52.6	46.6
CSC	41.6	37.0	41.8	44.1
HUHC	2.8	2.6	2.8	2.8
Both cards	2.3	1.1	1.2	5.0
Missing	1.8	2.6	1.7	1.4
Total	100%	100%	100%	100%

* Ethnicity was self-reported, with multiple categories allowed; one ethnic category was then assigned per patient according to prioritisation of Māori and Pacific peoples; 447 patients (1.2%) had missing data.

Table 4.4 summarises three measures of social well-being. Social support was judged to be good or very good in 75.7% of patients and poor or very poor in only 5.5%. The area measure of deprivation (NZDep decile) was fairly evenly spread, with just a suggestion that people from poorer areas consult more frequently. Approximately 4% of patients were not fluent in English. Independent practice patients had higher levels of patient support and were less likely to come from NZDep decile 8, 9 and 10 areas.

Table 4.4 Social support, NZDep2001 of residence, and fluency in English: percentage of all patients

	Whole survey	Independent	IPA	Capitated
Social support				
5. Very good	47.7	57.9	48.1	40.7
4. Good	28.0	21.6	28.2	31.5
3. Average	15.5	13.8	16.0	15.5
2. Poor	4.8	3.8	4.1	6.9
1. Very poor	0.7	0.7	0.5	1.0
Unknown	3.3	2.3	3.0	4.4
Total (N)	100% (8202)	100% (1388)	100% (3635)	100% (3179)
Decile				
1	10.7	12.2	12.7	6.0
2	9.9	10.3	11.5	6.3
3	9.3	7.1	10.2	8.8
4	10.7	12.2	11.1	9.0
5	10.7	14.0	10.3	9.8
6	9.1	11.3	9.2	7.5
7	9.4	11.8	8.5	9.7
8	10.6	8.7	10.4	11.9
9	9.0	7.7	8.1	11.7
10	10.7	4.8	8.0	19.4
Total (N)	100% (7001)	100% (1133)	100% (3138)	100% (2730)
% Not fluent	4.0%	4.3%	4.7%	2.6%
(N)	(7368)	(1237)	(3289)	(2842)

There was considerable inter-correlation of the various measures. As Table 4.5 shows, possession of a benefit card increased smoothly across the quintiles of the NZDep from 29.4% to 65.4% (panel A). Similarly, card possession increased from 35.7% for those with very good social support to 81.1% for those with very poor support (panel B). In both these instances, card-holding appeared to provide some compensation for disadvantage. However, deprivation and lack of social support varied together. Those from the most deprived neighbourhoods had a 30.9% chance of having very good social support, while those from the most privileged neighbourhoods had a 61.5% chance (panel C).

Table 4.5 Relationship between measures of deprivation

A. Percent possessing a Community Services Card, by NZDep2001 quintile					
Quintile (N)	1 (1350)	2 (1330)	3 (1317)	4 (1383)	5 (1458)
Card %	29.4	39.8	49.4	56.9	65.4

B. Percent possessing a Community Services Card, by level of social support						
Social support (N)	5 Very good (3818)	4 Good (2263)	3 Average (1215)	2 Poor (385)	1 Very poor (60)	Unknown (272)
Card %	35.7	51.9	66.8	76.9	81.1	40.4

C. Percent "very good" social support, by NZDep2001 quintile					
Quintile (N)	1 (1362)	2 (1356)	3 (1335)	4 (1409)	5 (1491)
% Very good	61.5	52.5	47.6	42.4	30.9
Mean score	4.5	4.3	4.2	4.1	3.9

5. Relationship with Practice

Overall, 7.5% of patients were new to the practice and 12.3% of patients were new to the GP (Table 5.1). New-to-practitioner visits are least frequent for independent GPs (11.4%) and more frequent in capitated practices (15.1%). The latter may reflect higher rates of loss and recruitment of GPs in practices taking on new capitated contracts. IPA members had the fewest new-to-practice visits (6.2%). Overall, for 8.1% of patients the practice was not the usual source of care.

Table 5.1 Relationship with practice: three measures

	Total	Independent	IPA	Capitated
% new to practice	7.5	9.6	6.2	8.8
% new to practitioner	12.3	11.4	11.2	15.1
% not usual source (minimum N)	8.1 (8125)	7.8 (1373)	7.5 (3610)	9.2 (3142)

Table 5.2 shows the distribution of new patients by age. The highest percentage of new-to-practice patients was found in the 15–24 years age group (16.7%); thereafter the percentage dropped with age (2.3% after 75). The pattern was similar for the percentage of new-to-practitioner patients (maximum 23.4%, minimum 4.4%).

Table 5.2 New patients: percentage of age group

Patient age group	Percent of age group new to doctor (N = 8097)	Percent of age group new to practice (N = 8111)
< 1	23.2	15.5
1–4	12.1	5.7
5–14	15.3	8.9
15–24	23.4	16.7
25–34	16.8	11.0
35–44	13.3	7.9
45–54	9.9	5.9
55–64	9.1	4.6
65–74	4.4	2.5
75+	4.4	2.3

The distribution of numbers of visits reported by patients is presented in Table 5.3. The largest percentage of patients (16.9%) reported only one visit to the GP in the previous year, and two-thirds reported six or fewer visits in that time. Ten or more visits were reported by more than a fifth (21.4%) and the largest number reported was 154 (almost three per week). The mean number of visits reported for the previous year was 6.6. As shown in Table 5.3, patients of IPA GPs reported seven visits, and patients of both independent and capitated practices reported about six in the previous year. Note that a patient sample systematically over-represents frequent attenders.

Table 5.3 Patient-reported number of visits to practice in previous 12 months: percentage distribution

Number *	Total	Independent	IPA	Capitated
1	16.9	20.4	15.1	18.4
2	9.7	11.6	8.8	10.4
3	10.5	12.6	9.7	11.0
4	10.6	9.5	11.4	9.7
5	8.2	7.3	8.6	8.1
6	9.2	8.1	9.7	9.1
7	4.5	4.3	4.6	4.4
8	6.0	5.3	6.1	6.1
9	3.0	2.5	3.2	2.9
> 9	21.4	18.4	22.8	19.9
Total (N)	100% (8021)	100% (1350)	100% (3549)	100% (3122)
Maximum	(154)	(144)	(154)	(111)
Mean	6.6	6.1	7.0	6.1

* Includes the current visit.

GPs reported that rapport was high in two-thirds of visits and medium in less than one-third (Table 5.4). It was reported as low in only 1.3% of visits. Independent GPs reported more visits in the high-rapport category and fewer visits in the medium (22.3%).

Table 5.4 Practitioner-reported rapport: percentage distribution

Rapport	Total	Independent	IPA	Capitated
1. Low	1.3	1.2	1.5	1.1
2. Medium	29.8	22.3	31.1	31.8
3. High	68.8	76.5	67.3	67.2
Total (N)	100% (8125)	100% (1377)	100% (3581)	100% (3167)

6. Visit Characteristics

The source of payment is given in Table 6.1. These data come from several questions with differential rates of incomplete data, so sample sizes vary (as shown). The great majority of visits (88.3%) were standard medical visits financed by the patient, with or without general medical benefit subsidisation. These visits can be disaggregated by category: under-sixes contributed 17.9%, older children contributed another 10.5% (of whom a slim majority were not covered by a card), and adults contributed 71.9%, evenly divided by card status. There was little variation in rates across practice types.

ACC visits comprised 9.4% of the total, and maternity care was indicated in 2.3% of visits; 1.9% were eligible for both GMS and ACC payments (and have been included in the ACC total).

Table 6.1 Source and type of payment cited, as percentage of visits

Source of payment*	Total	Independent	IPA	Capitated
% visits cash/ GMS	**88.3**	**88.6**	**89.2**	**87.1**
Under 6 (Y)	17.9	20.9	17.0	17.6
Child, card (J1)	4.6	4.5	4.3	4.9
Child, no card (J3)	5.9	5.4	6.3	5.6
Adult, card (A1)	36.2	31.6	36.7	37.6
Adult, no card (A3)	35.7	37.6	35.8	34.3
Total cash/GMS	100%	100%	100%	100%
% visits ACC payment	**9.4**	**8.4**	**8.5**	**10.8**
% visits maternity care	**2.3**	**3.0**	**2.3**	**2.1**
Total (N)	100% (7916)	100% (1328)	100% (3502)	100% (3086)

* Categories are mutually exclusive, with maternity or ACC taking precedence over cash/GMS where more than one is cited.

Mean visit duration was 14.9 minutes and varied little across practice types (Table 6.2). Two-thirds of visits took between 10 and 15 minutes, while about a tenth lasted beyond 20 minutes.

Table 6.2 Duration of visit: percentage distribution

Duration	Total	Independent	IPA	Capitated
Shorter < 10 minutes	12.0	9.7	12.8	11.8
Average 10–15 minutes	61.7	67.4	59.4	62.8
Longer 15–20 minutes	15.0	13.4	14.9	16.3
Longest > 20 minutes	11.3	9.5	12.9	9.1
Total (N)	100% (8016)	100% (1350)	100% (3534)	100% (3132)
Mean duration (minutes)	14.9	14.8	15.1	14.7

About one in 20 visits was judged very urgent (ASAP) and an additional third required same-day attention (Table 6.3). About one-sixth allowed latitude of one month. About one in fifty visits included life-threatening problems (these were defined to include acute problems, such as sudden chest pain, or new symptoms of serious import, such as rectal bleeding, but to exclude serious conditions already being managed). Fully a third of visits were judged to be for conditions that were self-limiting, even though the most serious of multiple problems was scored. These figures were similar for each practice category.

Table 6.3 Urgency and severity of visit: percentage distribution

	Total	Independent	IPA	Capitated
Urgency				
4. ASAP	5.1	6.2	4.4	5.9
3. Today	32.6	35.7	33.6	29.0
2. This week	43.5	39.9	43.6	45.7
1. This month	18.7	18.2	18.5	19.4
Total (N)	100% (8179)	100% (1384)	100% (3620)	100% (3175)
Severity				
4. Life-threatening	2.0	2.2	2.0	2.0
3. Intermediate	41.0	38.3	40.2	44.2
2. Self-limiting	34.4	35.6	33.7	35.0
1. Not applicable	22.6	24.0	24.2	18.8
Total (N)	100% (8118)	100% (1365)	100% (3602)	100% (3151)

An additional measure of the significance of the visit is the patient's level of disability (Table 6.4). Among those for whom data were provided, 33.9% had no disability. Among those with disability, for only a quarter was it permanent. For 67.4% of those with a disability, the effect was minor and temporary (affecting 43% of all patients). In this same group, 9.3% had a major, permanent disability (accounting for 6% of patients overall).

Table 6.4 Level of disability as percentage distribution

Level of disability	Total	Independent	IPA	Capitated
None	33.9	33.8	36.4	29.1
Minor	55.1	54.1	53.6	58.7
Major	11.0	12.2	10.1	12.2
Total (N)	100% (8128)	100% (1379)	100% (3590)	100% (3159)
Temporary	75.1	77.5	72.9	77.6
Permanent	24.9	22.5	27.1	22.4
Total (N)	100% (5254)	100% (904)	100% (2283)	100% (2067)
Minor temporary	67.4	66.7	66.6	69.0
Major temporary	7.8	10.8	6.3	8.6
Minor permanent	15.6	14.5	17.3	13.4
Major permanent	9.3	8.0	9.8	9.0
Total (N)	100% (5237)	100% (902)	100% (2270)	100% (2065)

Uncertainty is an important potential component of clinical practice (Table 6.5). In a third of visits, GPs reported low-level uncertainty as to the appropriate action for the patient. Medium uncertainty was reported in one in eight cases and high uncertainty in one in 40. Independent GPs noted low uncertainty less often, but had the same rate of medium and high uncertainty as other GPs.

Table 6.5 Percentage distribution of level of uncertainty as to appropriate action, by practice type

Level of uncertainty	Total	Independent	IPA	Capitated
1. None	50.1	58.1	51.0	43.5
2. Low	34.6	26.8	32.9	42.5
3. Medium	12.6	12.4	12.9	12.1
4. High	2.8	2.7	3.3	1.9
Total (N)	100% (8192)	100% (1385)	100% (3630)	100% (3177)

The final table in this section shows the relationships between these factors and some factors from the previous section and patient characteristics (Table 6.6). New-to-practice is commoner among men and among those from deprived areas. Mean rapport varies little across age, gender and deprivation measures. Duration of visit is higher in the middle age group (15–54 years) and for those from less deprived areas. Urgency is more often high among the young and for those from more deprived areas. Severity increases slightly with age, and possibly with deprivation of area. Levels of uncertainty do not appear to vary by patient characteristics.

Table 6.6 Relationship between patient type and visit characteristics

	Age < 25	Age 25–44	Age 45–64	Age 65+	Male	Female	Decile 1–3	Decile 4–7	Decile 8–10
% new to practice	11.0	9.3	5.3	2.4	8.9	6.5	7.0	7.1	8.1
Mean rapport*	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6
Mean duration (minutes)	12.6	15.9	16.6	15.6	14.6	15.1	15.6	15.1	14.1
Mean urgency*	2.4	2.2	2.1	2.1	2.3	2.2	2.1	2.3	2.3
Mean severity*	2.1	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.3
Mean uncertainty*	1.6	1.7	1.7	1.7	1.6	1.7	1.7	1.7	1.7
Minimum N for column	2613	1872	1769	1684	3288	4722	1955	2659	2218

* Categories have been converted to numerical scores as indicated in Tables 5.4, 6.3 and 6.5.

7. Reasons for Visit

The visit report form (see Appendix D) provides space for up to four reasons-for-visit (RfV) and the GP is asked to use the patient's own words. Many responses are, in fact, diagnoses and it is unclear if the patients used diagnostic terminology or if the GP translated a symptom or a request into a diagnosis. The following tables exclude missing data.

Table 7.1 gives the mean number of RfV per 100 visits, by age group and gender. On average, there were 140 RfV recorded per 100 visits. Females presented slightly more RfV than males. The number increased from age group 15–24 for females and from age group 25–34 for males. The average number of RfV decreased among those 75 and over.

Table 7.1 Reasons for visit: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	137	129	122	120	121	132	139	151	150	158	144
Female	145	126	120	118	141	146	150	155	162	157	151

Table 7.2 shows the frequency of RfV grouped by READ2 chapter (first digit level). The first column gives the occurrence of any reason cited in each grouping as a percentage of all visits, and the second gives their frequency as a percentage of all reasons. Where possible, an item is attributed to an anatomical system (e.g. musculoskeletal) or process (e.g. cancer) recognised by the initial alphabetical digit of the READ code; a considerable number of RfV were actions (e.g. examination or prescription) or non-specific symptoms identified by numerical codes. In the table, sub-chapter headings (identified by the second digit of the code) are included if they reach a frequency of 0.5%.

The largest grouping of RfV was "Actions", which made up 20.3% of all RfV and were reported at 25.8% of visits. Within this large category, therapeutic procedures accounted for 8.4% of RfV, preventive procedures for 5.8%, operations for 3.5%, and administrative activities for 2.5%.

Non-specific symptoms accounted for 12.4% of RfV and occurred at 16.7% of visits. Investigations, including history and examination, made up 7.7% of RfV and occurred at 10.7% of visits.

The most common system-based grouping was Respiratory. Respiratory RfV made up 12.5% of RfV and occurred at 17.1% of visits. The commonest sub-chapters were respiratory symptoms at 7.1% of RfV, infections at 2.7%, chronic obstructive airway disease at 1.1%, and pneumonia and influenza at 0.9%.

Other systems reported frequently as RfV were musculoskeletal (7.2%), nervous system (7%), skin (4.5%), digestive (4.3%), genito–urinary (3.8%) and cardiovascular (3.7%). Injury or poisoning made up 4.8% of RfV. In general, the percentage of visits at which each category was recorded was about a third higher than the percentage of all visits; no group seemed to have a much greater tendency to occur alone (as represented by a narrower than average gap between the rate per 100 visits and the percentage of RfV).

Table 7.2 Distribution of reasons-for-visit chapters and sub-chapters

RfV grouping, READ2 chapters and sub-chapters*	RfV grouping, % of visits	RfV grouping as % of reasons
Actions	**25.8**	**20.3**
Therapeutic procedures		8.4
Preventive procedures		5.8
Operations		3.5
Administration		2.5
Respiratory	**17.1**	**12.5**
Respiratory symptoms		7.1
Acute respiratory infections		2.7
Chronic obstructive airways disease		1.1
Pneumonia and influenza		0.9
Symptoms non-specific	**16.7**	**12.4**
Ear, nose and throat symptoms		3.6
Abdominal and pelvic symptoms		1.4
Head and neck symptoms		0.7
Investigations	**10.7**	**7.7**
Examination		3.9
History		2.2
Diagnostic procedures/lab test/radiology		1.7
Musculoskeletal / connective tissue	**9.8**	**7.2**
Rheumatism, excluding the back		2.5
Vertebral column syndromes		2.5
Arthropathies and related disorders		1.9
Nervous system / sense organs	**9.7**	**7.0**
Central nervous system (CNS) symptoms		3.6
Ear diseases		1.7
Disorders of eye and adnexa		1.1
Injury/poisoning	**6.7**	**4.8**
Abrasions		0.5
Sprains and strains of joints and adjacent muscles		0.5
Unspecified conditions	**6.3**	**4.5**
Health status and contact with health services factors		4.2

RfV grouping, READ2 chapters and sub-chapters*	RfV grouping, % of visits	RfV grouping as % of reasons
Skin / subcutaneous tissue	**6.2**	**4.5**
Symptoms affecting skin and integumentary tissue		1.7
Skin and subcutaneous tissue infection		1.0
Dermatitis/dermatoses		0.9
Digestive	**6.0**	**4.3**
Gastro-intestinal tract (GIT) symptoms		3.4
Genito-urinary	**5.2**	**3.8**
Genito-urinary symptoms		1.4
Female genital tract disorders		1.0
Urinary system diseases		0.6
Disorders of breast		0.6
Cardiovascular/circulatory	**4.9**	**3.7**
Cardiovascular symptoms		1.4
Blood pressure (BP) – hypertensive disease		1.2
Mental	**3.2**	**2.4**
Neurotic, personality, other non-psychotic disorders		1.3
Non-organic psychoses		1.0
Infectious/parasitic	**2.2**	**1.6**
Viral and chlamydial diseases		0.8
Endocrine/nutritional/metabolic/immunity	**2.1**	**1.5**
Endocrine gland diseases, including goitre		0.9
Cancers/neoplasms	**1.7**	**1.2**
Benign neoplasms		0.7
Pregnancy/childbirth/puerperium	**0.2**	**0.2**
Congenital	**0.2**	**0.1**
Blood / blood-forming organs	**0.2**	**0.1**
Perinatal	**0.01**	**0.01**
Not coded	**0.4**	**0.3**
Total (N)	**(8258)**	**100% (11,604)**

* Major groupings are based on READ2 chapters. Where possible, symptoms from chapters 1 and R have been attributed to the corresponding body system (chapters A to Q). Chapters 1 to 5 have been broadly classified under "Investigations", and chapters 6 to 9 and a to v under "Actions". READ2 sub-chapters at the two-digit level are shown where they comprise ≥ 0.5% of all reasons.

The frequency of categories of RfV is compared across practice types in Table 7.3. IPA GPs reported more than average numbers of RfV per visit and capitated ones fewer. IPA GPs more often reported "actions" but, in general, the differences in relative frequency of RfV categories between practice types appear minimal and there is no obvious pattern.

Table 7.3 Frequency of reasons-for-visit (by READ2 chapter) across practice types, rate per 100 visits

READ2 chapter	Total	Independent	IPA	Capitated
Actions	28.8	25.5	30.7	27.2
Respiratory	17.7	19.0	16.5	19.3
Symptoms non-specific	17.6	16.3	18.4	17.0
Investigations	11.0	12.1	11.1	10.0
Musculoskeletal / connective tissue	10.2	11.0	9.5	11.1
Nervous system / sense organs	10.0	11.0	10.1	9.0
Injury/poisoning	6.8	7.6	6.9	6.2
Unspecified conditions	6.4	5.7	6.2	7.0
Skin / subcutaneous tissue	6.3	8.1	6.0	6.0
Digestive	6.1	6.6	5.8	6.2
Genito-urinary	5.3	4.7	5.8	4.8
Cardiovascular/circulatory	5.3	5.1	5.5	5.0
Mental	3.4	3.3	3.3	3.5
Infectious/parasitic	2.3	1.4	2.8	1.9
Endocrine/nutritional/metabolic/immunity	2.1	2.4	2.1	2.1
Cancers/neoplasms	1.7	1.1	1.8	2.0
Pregnancy/childbirth/puerperium	0.2	0.1	0.2	0.4
Congenital	0.2	0.02	0.2	0.2
Blood / blood-forming organs	0.1	0.2	0.1	0.2
Perinatal	0.01	0	0.02	0
Not coded	0.4	0.5	0.5	0.2
Total reasons per 100 visits	**142.0**	**141.6**	**143.4**	**139.4**

Table 7.4 classifies RfV by "components" (i.e. type of reason rather than anatomical system implicated). RfV were most commonly symptoms (31.2%), diseases (31.3%) or treatments (12%). There was little difference between practice types in the relative frequency of RfV by type of reason.

Table 7.4 Comparison of reason for visit components across practice types, as percentage of all reasons

RfV component	Total	Independent	IPA	Capitated
Disease	31.3	33.3	30.9	30.6
Symptoms	31.2	30.3	30.4	33.1
Treatments	12.0	10.5	12.5	11.8
Investigations	7.7	8.6	7.8	7.2
Prevention	5.8	5.5	6.3	5.1
Injury/poisoning	4.8	5.3	4.8	4.4
Administrative	2.5	2.1	2.6	2.6
Unspecified conditions	4.5	4.0	4.3	5.0
Not coded	0.4	0.3	0.4	0.2
Total (N)	100% (11,604)	100% (1965)	100% (5251)	100% (4388)

8. Problems Identified and Managed

The visit form (see Appendix D) made provision for recording up to four diagnoses/ problems, and GPs were encouraged to include all sorts of problems, including well-person care, psycho-social difficulties and practitioner-identified issues, as well as defined pathology. The term "problem" is used hereafter, rather than the more traditional "diagnosis". Table 8.1 gives the distribution of the number of problems per visit. Almost 56% of patients had a single problem, about 27% had two, 12% three and 6% four. The mean number of problems was close to 1.7 per visit for each type of practice.

Table 8.1 Percentage distribution of number of problems per visit

Number of problems	Total	Independent	IPA	Capitated
No problem	0.3	0.5	0.2	0.2
1 problem	55.5	57.8	56.0	53.2
2 problems	26.6	27.0	25.7	28.1
3 problems	11.7	9.7	12.1	12.2
4 problems	5.9	5.0	6.0	6.3
Total (N)	100% (8528)	100% (1400)	100% (3664)	100% (3194)
Mean number of problems	1.67	1.61	1.68	1.71

Females presented more problems per visit than males. As Table 8.2 shows, both genders tended to present more problems with increasing age, except that the <1 age group was above the trend and the oldest age group below.

Table 8.2 Number of problems: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	161	142	130	136	133	153	160	171	191	193	185
Female	172	134	133	129	159	167	181	186	191	201	192

Table 8.3 shows the frequency of problems grouped by READ2 chapter (first digit level). The first column gives the occurrence of any problem in the grouping as a percentage of visits, the second gives their frequency as a percentage of all problems, and the third gives their frequency as a percentage of new problems. As with RfV, where possible an item is attributed to an anatomical system (e.g. musculoskeletal) or process (e.g. cancer), recognised by the initial alphabetical digit of the READ2 code; a significant number of problems could not be attributed in this way and are presented under Actions, Investigations or Non-specific symptoms. In the table, sub-chapter headings (identified by the second digit of the code) are included if they reach a frequency of 0.5% of all problems.

Respiratory problems were the most common at 14.7% of all problems, followed by actions at 11.3%, cardiovascular at 9.2%, nervous system and sense organs at 8.2%, injury/poisoning at 7.1%, skin at 6.7%, musculoskeletal at 5.7% and investigations at 5.3%.

Groups of problems at the sub-chapter level that reached a threshold of 3% included acute respiratory infections (7.9%), preventive procedures (5.5%), hypertensive disease (4.6%), ear diseases (3.8%) and chronic obstructive airways disease (3.2%).

Many categories of problem were less frequent as new problems, indicating they were commonly followed up. However, respiratory, nervous system, injury, skin, infections, genito-urinary and non-specific symptoms appeared relatively more frequently as new problems.

Table 8.3 Distribution of problems managed, by READ2 chapter and sub-chapter

Problem grouping, by READ2 chapter*	Problem grouping – % of visits	Percent of all problems	Percent of new problems
Respiratory	**22.8**	**14.7**	**23.1**
Acute respiratory infections		7.9	16.7
Chronic obstructive airways disease		3.2	0.9
Pneumonia and influenza		1.4	2.4
Respiratory symptoms		1.2	1.9
Actions	**17.0**	**11.3**	**5.7**
Preventive procedures†		5.5	3.0
Operations		2.3	1.2
Therapeutic procedures		1.9	0.5
Administration		1.1	0.8
Cardiovascular/circulatory	**13.7**	**9.2**	**3.1**
BP – hypertensive disease		4.6	0.6
Arteriosclerotic heart disease		1.5	0.3
Cardiovascular symptoms		0.5	0.9
Nervous system / sense organs	**13.2**	**8.2**	**10.0**
Ear diseases		3.8	5.3
Disorders of eye and adnexa		1.6	2.4
CNS symptoms		1.4	1.5
Injury/poisoning	**11.6**	**7.1**	**10.1**
Sprains and strains of joints and adjacent muscles		2.4	3.7
Abrasions		0.6	1.0
Contusions		0.6	1.1
Skin / subcutaneous tissue	**10.7**	**6.7**	**9.3**
Dermatitis/dermatoses		2.5	3.1
Skin and subcutaneous tissue infections		1.4	2.5

Problem grouping, by READ2 chapter*	Problem grouping – % of visits	Percent of all problems	Percent of new problems
Musculoskeletal / connective tissue	**8.9**	**5.7**	**4.4**
Arthropathies and related disorders		2.1	1.1
Rheumatism, excluding the back		1.7	1.8
Vertebral column disorders		1.4	1.2
Osteopathy/chondropathy / acquired musculoskeletal deformity		0.5	0.4
Investigations	**8.5**	**5.3**	**4.2**
History		2.5	1.7
Examination		1.7	1.8
Diagnostic procedures/ lab test / radiology		1.2	0.8
Mental	**7.7**	**4.9**	**3.1**
Neurotic, personality and other non-psychotic disorders		2.5	2.2
Non-organic psychoses		2.3	1.0
Genito-urinary	**7.4**	**4.6**	**5.3**
Female genital tract disorders		1.4	1.2
Urinary system diseases		1.3	1.9
Genito-urinary symptoms		0.8	0.9
Digestive	**7.2**	**4.4**	**4.5**
Duodenal diseases		1.5	1.1
Gastro-intestinal tract (GIT) symptoms		1.2	1.9
Diseases of intestines and peritoneum		0.5	0.4
Infectious/parasitic	**6.8**	**4.3**	**7.1**
Viral and chlamydial diseases		1.3	2.0
Mycoses		1.0	1.6
Bacterial food poisoning		0.9	2.0
Viral diseases with exanthema		0.5	0.7
Endocrine/nutritional/metabolic/immunity	**6.1**	**4.0**	**1.0**
Endocrine gland diseases, including goitre		2.2	0.4
Metabolic and immunity disorders		1.7	0.4
Symptoms non-specific	**5.6**	**3.5**	**4.2**
Ear, nose and throat symptoms		0.5	0.9
Cancers/neoplasms	**3.9**	**2.4**	**2.5**
Benign neoplasms		0.8	1.2
Unspecified conditions	**3.8**	**2.3**	**1.5**
Health status and contact with health services factors		2.1	1.4

Problem grouping, by READ2 chapter*	Problem grouping – % of visits	Percent of all problems	Percent of new problems
Blood / blood-forming organs	**0.8**	**0.5**	**0.3**
Pregnancy/childbirth/puerperium	**0.5**	**0.3**	**0.3**
Congenital	**0.3**	**0.2**	**0.1**
Perinatal	**0.06**	**0.03**	**0.05**
Not coded	**0.7**	**0.4**	**0.3**
Total (N)	**(8258)**	**100% (13,583)**	**100% (4860)**

* Major groupings are based on READ2 chapters and a similar process was applied as for reason-for-visit. Sub-chapters are shown where they comprise ≥ 0.5% of all problems.

† Preventive procedures include immunisation.

As Table 8.4 shows, there was no obvious difference in the relative frequency of these problem groups across practice types. While capitated GPs showed a slightly higher frequency of respiratory problems and IPA GPs reported more actions (and independent GPs fewer), the rank ordering of the categories was virtually identical for GPs in all practice types. Capitated GPs had the highest overall reported rate of problems per 100 visits.

Table 8.4 Comparison of frequency of problems (per 100 visits) across practice types

Problems (READ2 chapter)	Total	Independent	IPA	Capitated
Respiratory	24.5	24.5	23.2	27.3
Actions	19.0	15.8	20.3	18.2
Cardiovascular/circulatory	15.5	14.5	15.4	16.1
Nervous system / sense organs	13.7	14.3	14.1	12.6
Injury/poisoning	11.9	13.4	12.0	11.0
Skin / subcutaneous tissue	11.2	12.8	11.0	10.5
Musculoskeletal / connective tissue	9.5	8.4	9.0	11.2
Investigations	8.9	8.0	9.2	8.9
Mental	8.2	7.2	8.8	7.6
Genito-urinary	7.7	6.4	8.1	7.6
Digestive	7.4	7.1	7.1	8.0
Infectious/parasitic	7.2	7.0	7.6	6.4
Endocrine/nutritional/metabolic/immunity	6.7	7.4	6.3	7.2
Symptoms non-specific	5.9	5.4	5.8	6.2
Cancers/neoplasms	4.1	3.4	3.7	5.2
Unspecified conditions	3.8	3.3	3.7	4.3
Blood / blood-forming organs	0.8	0.9	0.7	0.9
Pregnancy/childbirth/puerperium	0.4	0.2	0.3	0.8
Congenital	0.3	0.2	0.3	0.3
Perinatal	0.1	0	0.1	0.1
Not coded	0.7	0.8	0.7	0.6
Total problems per 100 visits	**167.4**	**160.8**	**167.6**	**171.1**

The distribution of new problems by age and gender is given in Table 8.5. Overall, there was a new problem at just under 60% of visits. The percentage peaked in the 5–14 years age group at about 75%, and then diminished with age. Gender differences were small, but women appear to have the onset of more new problems at age 15–24, presumably associated with contraception and pregnancy.

Table 8.5 Age and gender distribution of new problems (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	59	75	71	81	67	68	63	52	43	48	36
Female	58	62	70	72	72	65	62	55	48	45	39

An analysis of the frequency of problem categories by practice type is given in Table 8.6. The overall rate of new problems and the relative rates of different categories of new problems varied little between practice types.

Table 8.6 Comparison of frequency of new problems (per 100 visits) across practice types

Problems (READ2 chapter)	Total	Independent	IPA	Capitated
Respiratory	13.5	14.4	12.4	15.0
Injury/poisoning	5.9	6.2	6.1	5.2
Nervous system / sense organs	5.8	6.4	5.9	5.3
Skin / subcutaneous tissue	5.4	7.2	4.9	5.4
Infectious/parasitic	4.1	3.8	4.5	3.6
Actions	3.3	2.9	3.3	3.6
Genito-urinary	3.1	2.8	3.1	3.3
Digestive	2.6	2.3	2.7	2.8
Musculoskeletal / connective tissue	2.5	2.4	2.4	2.8
Investigations	2.4	2.2	2.7	2.0
Symptoms non-specific	2.4	2.2	2.3	2.8
Mental	1.8	1.9	2.0	1.6
Cardiovascular/circulatory	1.8	1.8	1.8	1.8
Cancers/neoplasms	1.4	1.2	1.6	1.3
Unspecified conditions	0.9	1.0	0.8	0.8
Endocrine/nutritional/metabolic/immunity	0.6	1.1	0.4	0.6
Pregnancy/childbirth/puerperium	0.2	0.1	0.1	0.3
Blood / blood-forming organs	0.1	0.2	0.1	0.2
Congenital	0.1	0.1	0.03	0.1
Perinatal	0.03	0	0.02	0.1
Not coded	0.2	0.1	0.3	0.1
New problems per 100 visits	**58.3**	**60.3**	**57.6**	**58.6**

The visit questionnaire provided space to record the type of problem. New problems made up around 35% of all problems and short-term follow-up 15%. Long-term follow-up accounted for 23%, long-term with flare-up 8%, and preventive 5%. These figures were similar across practice types.

Table 8.7 Comparison of percentage of problem status across practice types

Status	Total	Independent	IPA	Capitated
New problem	34.8	37.5	34.4	34.2
Short-term follow-up	14.5	16.1	13.8	15.0
Long-term follow-up	23.2	21.2	23.6	23.7
Long-term with flare-up	8.0	7.4	8.6	7.3
Preventive	4.9	3.4	5.4	4.9
(Not given)	14.5	14.4	14.3	15.0
Total (N)	100% (13,583)	100% (2248)	100% (6180)	100% (5155)

Table 8.8 gives the rates, per 100 visits, of common groups of problems by age and gender. Table 8.9 gives rates for common problems by calendar month.

Respiratory problems were less common in females, and in both genders peaked in the 1–4 years age group. They were commonest between June and August (winter) and least common December to February (summer), and were the only group of problems with an obvious seasonal pattern.

Cardiovascular problems increased with age, beginning markedly at age group 45–54 years, with men having higher rates initially but women overtaking them in the 65–74 age group. Nervous system/sense organ problems were highest among children, peaking at age group 1–4 years, indicating the significance of ear disease in this group. Injury and poisoning was more frequent among males, becoming frequent at ages 5–14 and decreasing after age group 25–34. Disease of the skin had a stable occurrence across age groups and between genders.

Musculoskeletal problems became more common among age group 25–34, but were relatively stable thereafter. Mental illness increased from age group 15–24 and peaked at 35–44. Genito-urinary problems were much more common among women (despite the exclusion of pregnancy). Among females the peak was between 15 and 54; among males there was a progressive rise with age.

Table 8.8 Age- and gender-specific rates (per 100 visits) of common groups of problems

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Respiratory											
Male	28	45	45	41	27	27	25	19	17	21	19
Female	22	31	44	38	22	17	20	19	18	18	15
Cardiovascular											
Male	16	0.8	0.4	0.5	2	5	6	22	36	35	39
Female	15	1	2	0.5	1	4	9	14	28	40	38
Nervous system / sense organs											
Male	14	17	28	17	10	11	13	9	10	13	10
Female	14	19	26	14	10	9	14	14	13	13	13
Injury/poisoning											
Male	14	3	6	13	25	22	18	17	12	11	10
Female	11	3	7	14	9	10	11	9	14	12	14
Skin and subcutaneous tissue											
Male	11	11	9	10	20	11	9	11	8	13	12
Female	11	17	15	14	9	9	10	7	9	12	15
Musculoskeletal											
Male	9	0.9	0.7	2	3	5	14	14	15	14	12
Female	10	0.9	1	2	4	6	10	13	13	22	18
Mental											
Male	7	0.9	0.9	7	9	10	13	10	7	7	7
Female	9	0.9	2	2	5	11	12	13	9	8	10
Genito-urinary											
Male	4	3	3	3	0.8	3	3	3	6	8	8
Female	10	0	4	4	13	15	16	17	7	7	8
Infectious/parasitic											
Male	7	6	12	14	11	13	6	4	4	2	3
Female	7	12	11	13	13	7	7	6	4	4	2
Digestive											
Male	7	10	7	4	6	9	6	8	5	7	13
Female	7	5	5	5	7	8	7	8	9	10	8
Endocrine/nutritional/metabolic/immunity											
Male	7	0.7	1	0.8	0.8	4	5	11	17	14	11
Female	6	1	0.7	0.6	2	5	6	8	13	14	8
Cancers/neoplasms											
Male	4	0	0	0.8	1	3	3	5	7	9	12
Female	4	0.1	0.7	1	3	2	5	6	6	5	5

Infectious diseases were similar across the genders and decreased after the 25–34 age group, being much the highest in childhood and early adulthood. Digestive problems had a stable occurrence across age groups and between genders. Endocrine problems manifested most frequently across age groups 45–74 and were similar for both males and females. Problems related to neoplasia increased progressively after the twenties; rates were similar across the genders.

Table 8.9 Seasonal variation: groups of problems as a percentage of all problems

Problem grouping (READ2 chapter)	March–May (autumn)	June–August (winter)	September–November (spring)	December–February (summer)
Respiratory	14.7	18.4	14.9	10.3
Actions	12.9	9.2	11.0	12.1
Cardiovascular	9.2	9.3	9.0	9.5
Nervous / sense organs	8.1	8.3	8.6	7.7
Injury/poisoning	7.0	7.6	7.2	6.8
Skin / subcutaneous tissue	6.9	5.7	6.3	8.0
Musculoskeletal	5.4	4.7	6.9	5.8
Investigations	5.2	5.1	5.2	5.9
Mental	4.9	5.1	3.9	5.8
Digestive	4.6	4.2	4.7	4.0
Genito-urinary	4.2	4.7	4.4	5.2
Endocrine/nutritional, etc.	3.9	4.9	3.6	3.7
Symptoms non-specific	3.8	2.8	3.8	3.5
Infectious/parasitic	3.6	4.6	4.2	4.8
Unspecified conditions	2.3	1.9	2.4	2.6
Cancers/neoplasms	2.2	2.3	2.4	2.9
Blood / blood-forming	0.4	0.3	0.5	0.5
Pregnancy/childbirth, etc.	0.3	0.3	0.2	0.3
Congenital	0.1	0.2	0.1	0.3
Perinatal	0.1	0	0	0.1
Not coded	0.3	0.5	0.7	0.2
Total (N)	100% (3502)	100% (3811)	100% (3351)	100% (2919)

9. Laboratory Tests and Other Investigations

The visit questionnaire recorded laboratory tests and other investigations; Table 9.1 shows the categories used. A test or investigation was ordered in 24.8% of visits and a laboratory test was ordered for 17.2%. The frequencies of the different types of laboratory tests were: haematology 9.1%, biochemistry 11.0%, and other laboratory 5.3%. Imaging was ordered at 4.1% of visits, and other non-laboratory at 8.2%.

Table 9.1 Rate per 100 visits at which tests and investigations were ordered

Test group*	Rate per 100 visits (N = 8258)		Test sub-group
Any laboratory test	**17.2**		
Haematology	9.1	8.7	Full blood count
		3.8	Sed rate
		2.9	Fe, B12, folic acid
Biochemistry	11.0	5.4	Serum glucose
		6.0	Creatinine/urea
		5.0	Liver function
		5.1	Lipids
		4.1	Thyroid
		3.6	Other chemistry
Other	5.3	4.1	Culture
		1.9	Pap smear
Imaging	**4.1**	2.9	Plain X-ray
		0.1	Contrast
		1.2	Ultrasound
Other	**8.2**	0.4	ECG
		0.1	Spirometry
		7.8	Other
Any test/investigation	**24.8**		

* "Missing" is counted as "none".

Rates of testing were similar across practice types (Table 9.2), except that rates of cervical smears were low for capitated practices.

Table 9.2 Frequency of tests and investigations (per 100 visits), by practice type

Practice type	Total	Independent	IPA	Capitated
All laboratory tests	**17.2**	**19.0**	**17.2**	**16.2**
Haematology	9.1	9.4	9.2	8.6
Biochemistry	11.0	11.9	10.8	10.8
Culture	4.1	4.8	4.0	4.0
Cervical smear	1.9	2.3	2.0	1.3
Imaging	**4.1**	**4.1**	**4.2**	**3.9**
Other	**8.2**	**8.2**	**8.5**	**7.6**
Any test/investigation (N)	**24.8 (8258)**	**26.3 (1400)**	**25.0 (3664)**	**23.6 (3194)**

The frequencies of tests and investigations by age and gender are given in Table 9.3.

The rate of any test/investigation for males increased until age group 55–64 years and then fell slightly. For females, the rates rose and peaked earlier, reaching a maximum at 35–44. Females overall accessed more tests than males (averaging a lead of eight over ages 5–44).

Similarly, the frequency of haematology tests for males increased to a maximum in the 25–64 years age groups; in females rates rose earlier and peaked in the 35–44 group. Overall rates were slightly higher for women, but utilisation by men predominated in the 45–64 age-band.

The frequency of biochemistry tests for males increased for each age group to a peak in the 55–64 years band, and declined somewhat thereafter. In females, use increased with age but male use was notably greater in the 45–64 range.

In comparison, the frequency of microbiology tests was greater in the lower age groups. The overall rate was considerably higher for females at all ages except infancy.

The contribution of cervical smears to the rate of testing for females is shown. It begins at 15 years, reaches a peak in the 25–34 age group and falls off sharply after age 55.

For males the frequency of imaging jumps in the 15–24 years group and remains high until age 65–74. The rates for females are higher overall and show a similar age pattern.

The rate of other tests increased with age, peaking at 55–64 years for males and at 15–24 for females.

Table 9.3 Tests and investigations: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1 –4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Any test/investigation											
Male (N=3387)	22	6	10	10	20	25	26	29	34	28	26
Female (N=4816)	27	6	9	16	30	34	35	32	31	29	24
Haematology											
Male	8	0	2	2	6	10	13	14	13	8	11
Female	10	0.8	0.2	4	12	10	16	10	10	11	11
Biochemistry											
Male	11	0	1	1	5	11	15	20	22	16	16
Female	11	2	0.1	2	10	10	14	12	15	16	12
Microbiology culture											
Male	3	3	4	4	5	4	1	2	0.8	1	2
Female	5	2	5	7	7	8	5	6	4	3	3
Cervical smear											
Female	3	0	0	0	5	7	7	6	2	0.2	0.4
Imaging											
Male	4	0.6	1	2	4	3	5	5	4	6	2
Female	4	0.8	0.5	3	4	6	7	5	5	5	3
Other tests											
Male	8	2	3	3	9	10	9	8	15	10	7
Female	8	3	3	5	13	12	9	9	8	9	7

Table 9.4 gives the problems managed when a laboratory test was ordered. From the final column it will be noted that tests were ordered most frequently for haematology problems (55%), and were frequent with genito-urinary problems (38%), non-specific symptoms (32%) and cardiovascular problems (29%).

Table 9.4 Problems most frequently managed at visits that included an order for a laboratory test

Problem grouping (READ2 chapter)	Rate per 100 visits where test ordered (N = 1410)	Rate per 100 – all visits (N = 8258)	Percent of visits for that problem group where test ordered
Actions	24.4	4.2	24.7
Cardiovascular/circulatory	22.7	3.9	28.5
Genito-urinary system	16.0	2.8	37.6
Respiratory system	15.9	2.8	12.0
Investigations	14.3	2.5	28.9
Endocrine/nutritional/metabolic/ immunity	12.8	2.2	36.2
Skin / subcutaneous tissue	10.8	1.9	17.5
Digestive system	10.7	1.8	25.7
Mental	10.5	1.8	23.6
Nervous system / sense organs	10.3	1.8	13.5
Symptoms non-specific	10.3	1.8	31.8
Musculoskeletal / connective tissue	10.2	1.8	19.7
Infectious/parasitic	7.9	1.4	20.0
Injury/poisoning	5.7	1.0	8.5
Unspecified conditions	5.0	0.9	22.8
Cancers/neoplasms	3.8	0.7	16.8
Blood / blood-forming organs	2.4	0.4	54.5
Pregnancy/childbirth/puerperium	0.6	0.1	23.6
Congenital	0.6	0.1	30.5
Perinatal	0	0	0
Not coded	0.8	0.1	19.6

Table 9.5 gives the problems managed when an X-ray was ordered. From the final column it will be noted that X-rays were ordered in 12% of musculoskeletal problem visits, 8% of injuries and poisonings and 6% of visits for haematology problems.

Table 9.5 Problems most frequently managed at visits that included an order for an X-ray

Problem grouping (READ2 chapter)	Rate per 100 visits where X-ray ordered	Rate per 100 – all visits (N=8258)	Percent of visits for that problem group where X-ray ordered
Musculoskeletal / connective tissue	33.9	1.05	11.8
Injury/poisoning	32.2	0.94	8.1
Respiratory system	20.2	0.59	2.6
Actions	13.3	0.39	2.3
Investigations	11.2	0.33	3.9
Cardiovascular/circulatory	8.8	0.26	1.9
Mental	8.7	0.25	3.3
Genito-urinary system	6.1	0.18	2.4
Symptoms non-specific	5.4	0.16	2.8
Digestive system	5.4	0.16	2.2
Nervous system / sense organs	4.6	0.13	1.0
Cancers/neoplasms	3.9	0.10	2.9
Endocrine/nutritional/metabolic/immunity	3.6	0.11	2.0
Infectious/parasitic	3.2	0.09	1.7
Skin /subcutaneous tissue	2.8	0.08	0.8
Unspecified conditions	2.6	0.08	2.0
Blood / blood-forming organs	1.5	0.04	5.6
Pregnancy/childbirth/puerperium	0	0	0
Congenital	0	0	0
Perinatal	0	0	0
Not coded	0.6	0.02	2.7

10. Pharmacological Treatment

This section analyses the treatments recommended. First the frequency of drug and non-drug treatments is given, then the types of drug are described. Analysis of non-drug treatments is given in section 11.

Space was provided on the visit report (see Appendix D) for up to four problems, but any number of drugs could be entered. Drugs were classified according to the Pharmacodes/ATC system. The purpose-designed software mentioned in the Methodology section was used to code each item. Note (Table 10,1) that a prescription was given at 66.2% of visits, and "other treatments" were recorded at 62% of visits. Both pharmacological and "other treatments" together were recorded at 36.2%. No treatment was recorded at 8% of visits. These percentages were similar across practice types, although independent GPs gave non-drug treatments at fewer visits.

Table 10.1 Percentage of visits at which treatments were given, by treatment modality and practice type

Treatment	All visits	Independent	IPA	Capitated
No treatment	8.0	9.4	7.6	7.9
Prescription only	30.0	33.8	29.4	29.0
Other treatments only	25.9	24.4	27.5	23.6
Both types of treatment	36.2	32.5	35.6	39.5
Total (N)	100% (8258)	100% (1400)	100% (3664)	100% (3194)
Percent prescriptions	66.2	66.3	65.0	68.6
Percent other treatments	62.0	56.9	63.1	63.1

The number of drugs or other treatments given, by visit and by problem, is shown in Table 10.2. For every 100 visits, 243 treatments were given, consisting of 129 script items and 114 other treatments. For every 100 problems, 145 treatments were given, consisting of 77 script items and 68 other treatments. It appears that independent GPs offered fewer treatments, drug and non-drug, per visit and per problem.

Table 10.2 Number of treatment items by practice type – number per 100 visits and per 100 problems

N visits = N problems =		Total 8258 13,583	Independent 1400 2248	IPA 3664 6180	Capitated 3194 5155
All treatments	Per 100 visits	243	223	243	257
	Per 100 problems	145	138	144	150
All script items	Per 100 visits	129	126	128	133
	Per 100 problems	77	78	76	78
All other treatment items	Per 100 visits	114	97	115	124
	Per 100 problems	68	60	68	72

The relationship between prescribing and age and gender is shown in Table 10.3. Note that prescribing rates were relatively similar in all categories except for infants, where it was slightly lower, and in older people, where it was slightly higher.

Table 10.3 Any prescription: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	66	56	68	68	66	64	61	61	74	72	70
Female	66	51	68	66	67	58	63	66	69	78	69

By comparison, the number of items per prescription (Table 10.4) rose steadily from age 35–44, with a slight decline for those over 75.

Table 10.4 Prescription items: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	129	84	115	117	107	107	106	116	164	174	174
Female	129	82	106	108	116	105	107	120	155	185	168

Table 10.5 shows the frequency of use of drugs types, by level 1 group, as the percentage both of prescription items and of all visits. Systemic anti-infectives were the commonest drugs reported, making up 18.4% of script items and being prescribed at 21.6% of all visits. Other common groups were nervous system drugs (14.4% and 15.8%), cardiovascular system drugs (13.1% and 10.8%), respiratory system drugs (10.8% and 10%) and alimentary tract drugs (8.4% and 8.8%). Each group is considered below.

Table 10.5 Distribution of drugs, by group (Pharmacodes/ATC level 1)

Drug group		Percent of all prescription items	Percent of all visits	Rate per 100 – all visits
16	Infections – agents for systemic use	18.4	21.6	23.7
22	Nervous system	14.4	15.8	18.6
7	Cardiovascular system	13.1	10.8	17.0
28	Respiratory system and allergies	10.8	10.0	14.0
1	Alimentary tract and metabolism	8.4	8.8	10.9
19	Musculoskeletal system	6.4	7.6	8.3
4	Blood and blood-forming organs	6.1	6.0	7.8
10	Dermatologicals	5.9	6.4	7.7
14	Systemic hormone preparations (excludes oral contraceptives)	4.4	5.3	5.7
13	Genito-urinary system	3.7	4.0	4.8
31	Sensory organs	1.3	1.6	1.7
38	Extemporaneously compounded preparations and galenicals	1.0	1.1	1.3
25	Oncology agents and immunosuppressants	0.3	0.3	0.4
40	Special foods	0.1	0.1	0.1
Medication – non-specific		5.6	6.8	7.2
Total (N)		**100% (10,540)**	**(8258)**	**129.0**

Table 10.6 gives the distribution of the most frequently prescribed drug sub-groups at the second level of grouping. Anti-bacterials head the list, being prescribed at a rate of 21.9 per 100 visits and making up 17.0% of prescription items. Types of anti-bacterials are distinguished in Table 10.7. The next most frequent were analgesics, prescribed at a rate of 9.8 per 100 visits and making up 7.6% of prescription items. Non-steroidal anti-inflammatory agents, most commonly used as analgesics, were used at a rate of 6.7 per 100 visits and made up 5.2% of scripts.

Table 10.6 Most frequently prescribed drug subgroups

Drug sub-group (Pharmacodes/ATC level 2)*	% of script items (N = 10,540)	Per 100 visits (N = 8258)
Anti-bacterials	17.0	21.9
Analgesics	7.6	9.8
Anti-inflammatory non-steroidal drugs (NSAIDs)	5.2	6.7
Inhaled corticosteroids	3.5	4.5
Diuretics	3.4	4.4
Agents affecting the renin-angiotensin system	3.3	4.2
Anti-depressants	3.1	4.0
Beta-adrenoceptor agonists (tablets)	2.9	3.7
Corticosteroids topical	2.8	3.6
Anti-thrombotic agents	2.7	3.5
Beta adrenoceptor blockers	2.6	3.3
Anti-ulcerants	2.5	3.2
Lipid-modifying agents	2.1	2.6
Calcium channel blockers	1.9	2.4
Corticosteroids and related agents	1.8	2.3
Diabetes and diabetes management	1.6	2.1
Contraceptives hormonal	1.5	1.9
Anti-histamines	1.5	1.9
Nitrates	1.0	1.2
Laxatives	1.0	1.3

* Includes drug sub-groups with frequencies ≥ 1% of all script items.

In the sub-sections that follow, each group of drugs is considered in turn. The percentages cited in the text are drawn from the last column in the first table of each section, and refer to the percentage of the drug group made up by its major constituent sub-groups.

10.1 Anti-bacterials (Tables 10.7, 10.8 and 10.9)

The main categories (level 2) of systemic anti-infective agents were anti-bacterials (94.8%) and urinary tract agents; the anti-bacterial antibiotics are classified into penicillins (52.4%), macrolides (9.1%), tetracyclines (6.1%) and cephalosporins and cephamycins (5.6%). There is a residual category of other antibiotics (11.7%) (Table 10.7).

These drugs were most used in those under 15 and were given equally to each gender. The problems most commonly treated were acute respiratory and ear infections. Adding up the different READ2 sub-chapters (see Table 10.9), respiratory problems accounted for 52.1% of anti-infective scripts, skin problems for 18.2%, ear disease for 15.6%, and urinary disease for 6.5%. Skin infections were treated with anti-bacterials

in three-quarters of cases; acute respiratory and urinary infections and abrasions of the skin were so treated in more than half of cases.

Table 10.7 Infections: agents for systemic use – sub-groups

Drug group, sub-group (level 2) (Anti-infective script items N = 2012)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 16. Infections – agents for systemic use	**18.4**	**23.1**	**100**
Anti-bacterials	**17.0**	**21.9**	**94.8**
Penicillins	9.4	12.1	52.4
Macrolides (erythromycins etc)	1.7	2.1	9.1
Tetracyclines	1.1	1.4	6.1
Cephalosporins and cephamycins	1.1	1.3	5.6
Other antibiotics	2.1	2.7	11.7
Agents for urinary tract infections	**0.5**	**0.5**	**2.2**

Table 10.8 Anti-infective drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	26	27	43	42	31	27	26	15	18	17	13
Female	22	21	38	40	32	18	19	20	18	18	13

Table 10.9 Most frequent problems managed by anti-infective drugs

Problem (READ2 sub-chapter)		Percent of anti-infective* prescription items	Percent of problems so treated	Percent of new problems so treated
H0	Acute respiratory infections	38.2	53.7	55.5
F5	Ear diseases	14.3	42.1	53.8
M0	Skin and subcutaneous tissue infections	9.2	73.0	82.8
K1	Other urinary system diseases	6.5	57.4	72.8
H2	Pneumonia and influenza	5.9	48.7	51.1
H3	Chronic obstructive airways disease	5.6	19.4	33.1
F4	Disorders of eye and adnexa	3.9	28.1	38.0
M2	Other skin and subcutaneous tissue disorders	3.2	14.9	17.8
M1	Dermatitis/dermatoses	3.2	14.4	15.3
SD	Abrasions	2.6	53.3	56.8
17	Respiratory symptoms	2.4	30.6	41.8
A5	Viral diseases with exanthema	1.4	31.3	19.6
1C	Ear symptoms	1.3	29.5	31.8
J0	Oral cavity, salivary glands & jaw diseases	1.2	32.8	38.9
AB	Mycoses	1.1	12.8	9.8

* This drug group includes systemic anti-bacterials, anti-fungals and anti-virals.

10.2 Nervous system (Tables 10.10, 10.11 and 10.12)

The main categories of nervous system drugs used were analgesics (52.7%), anti-depressants (21.5%), sedatives and hypnotics (6.5%), anti-nausea and vertigo drugs (5.4%), anti-epilepsy drugs (3.8%) and anxiolytics (3.8%) (Table 10.10).

These drugs were equally used across the age bands and in both genders (but note that the categories represented are disparate). Adding up the different READ2 sub-chapters (see Table 10.12), psychiatric problems accounted for 29.9% of nervous system scripts, respiratory problems for 24%, CNS disease for 10.2%, musculoskeletal symptoms for 14.6%, ear disease for 6.8% and various types of symptoms for 3.7%.

Psychoses and "other CNS diseases" were so treated in more than half of cases; about a third of non-psychotic, hereditary and degenerative CNS diseases were treated with these drugs. A wide range of pain-causing problems were occasionally treated, presumably with analgesics.

Table 10.10 Nervous system drugs – sub-groups

Drug group, sub-group (level 2) (Nervous system script items N = 1547)	Percent of all prescription items	Per 100 visits	Percent of drug group
Total: 22. Nervous system	**14.4**	**18.6**	**100**
Analgesics	7.6	9.8	52.7
Anti-depressants	3.1	4.0	21.5
Sedatives and hypnotics	1.0	1.2	6.5
Anti-nausea and vertigo agents	0.8	1.0	5.4
Anti-epilepsy drugs	0.6	0.7	3.8
Anxiolytics	0.5	0.7	3.8

Table 10.11 Nervous system drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1 –4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	19	20	25	23	13	16	19	18	17	16	17
Female	18	19	17	16	11	15	18	21	19	21	25

Table 10.12 Most frequent problems managed by nervous system drugs

Problem (READ2 sub-chapter)		Percent of nervous system* script items	Percent of problems so treated	Percent of new problems so treated
H0	Acute respiratory infections	20.7	20.6	23.8
E1	Non-organic psychoses	18.5	64.6	57.9
E2	Neurotic, personality and other non-psychotic disorders	11.4	36.0	20.6
F5	Ear diseases	6.8	14.2	18.6
F2	Other CNS disorders	6.1	54.6	55.8
N0	Arthropathies and related disorders	5.3	20.5	20.1
8B	Other therapy	4.2	22.4	20.6
S5	Sprains and strains of joints and adjacent muscles	4.2	14.2	17.5
N1	Vertebral column syndromes	3.5	20.1	25.1
H2	Pneumonia and influenza	3.3	19.2	28.6
A7	Other viral and chlamydial diseases	3.1	18.4	27.0
R0	Symptoms	2.6	8.4	5.6
1B	CNS symptom	2.5	14.8	9.7
A0	Bacterial food poisoning	2.3	19.6	22.4
N2	Rheumatism, excluding the back	1.6	7.6	6.1
F1	Hereditary and degenerative diseases of the CNS	1.6	30.6	27.2
19	Gastrointestinal symptoms	1.1	7.3	5.9
A5	Viral diseases with exanthema	1.1	17.4	28.8

* This drug group includes analgesics and psychological drugs.

10.3 Cardiovascular system (Tables 10.13, 10.14 and 10.15)

The main categories of cardiovascular system drugs were diuretics (25.9%) angiotensin-altering (24.7%), beta blockers (19.4%), calcium channel blockers (14.1%), nitrates (7.1%) and anti-arrhythmics (4.7%).

The use of these drugs increased with age, from age group 35–44, and were used equally by each gender. By far the largest category of problem treated was hypertension, which accounted for 59.1% of cardiovascular scripts; 84.1% of cardiovascular scripts were for anti-hypertensives, although other diagnoses were referenced. Arteriosclerotic heart disease accounted for 15.2% and other heart or non-specific problems accounted for 21.9%. A large proportion of such problems were so treated.

Table 10.13 Cardiovascular system drugs – sub-groups

Drug group, sub-group (level 2) (Cardiovascular script items N = 1325)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 7. Cardiovascular system	**13.1**	**17.0**	**100**
Diuretics	3.4	4.4	25.9
Agents affecting the renin-angiotensin system	3.3	4.2	24.7
Beta adrenoceptor blockers	2.6	3.3	19.4
Calcium channel blockers	1.9	2.4	14.1
Nitrates	1.0	1.2	7.1
Anti-arrhythmics	0.6	0.8	4.7

Table 10.14 Cardiovascular drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	17	0	0.8	0.4	2	3	6	16	38	42	51
Female	17	1	1	0.2	0.7	1	5	12	31	45	51

Table 10.15 Most frequent problems managed by cardiovascular drugs

Problem (READ2 sub-chapter)	Percent of cardiovascular prescription items	Percent of problems so treated	Percent of new problems so treated
G2 BP – hypertensive disease	59.1	75.6	43.4
G3 Arteriosclerotic heart disease	15.2	59.3	44.2
G5 Other forms of heart disease	13.6	65.5	21.2
8B Other therapy	6.1	24.0	0
C1 Other endocrine gland diseases	2.2	7.9	0
R1 Non-specific abnormal findings	2.0	19.5	5.9
24 CVS examination	1.9	42.8	0

10.4 Respiratory system (Tables 10.16, 10.17 and 10.18)

The main categories of respiratory system drugs were inhaled corticosteroids (32.1%), beta-agonists (26.4%), anti-histamines (13.6%), nasal preparations (6.4%), and combined beta-adrenoceptor agonist and anti-cholinergic agents (inhaled) (5.0%).

The use of these drugs had a peak in the 1–14 years age group and they were used more frequently by males. The commonest problem treated was chronic obstructive airway disease (41.3%), with other respiratory conditions making up the bulk of the remainder (40.7%). Ear diseases accounted for 5.3% of respiratory drug scripts. Two-thirds of chronic obstructive airway disease and of "other respiratory tract diseases" were treated with respiratory system drugs.

Table 10.16 Respiratory system drugs – sub-groups

Drug group, sub-group (level 2) (Respiratory script items N = 1131)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 28. Respiratory system and allergies	**10.8**	**14.0**	**100**
Inhaled corticosteroids	3.5	4.5	32.1
Beta-adrenoceptor agonists (tablets)	2.9	3.7	26.4
Anti-histamines	1.5	1.9	13.6
Nasal preparations	0.7	0.9	6.4
Inhaled combined beta-adrenoceptor agonist and anti-cholinergic agents	0.6	0.7	5.0

Table 10.17 Respiratory drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	15	12	20	24	13	15	14	11	10	18	13
Female	13	4	17	18	11	12	13	14	14	14	11

Table 10.18 Most frequent problems managed by respiratory drugs

Problem (READ2 sub-chapter)		Percent of respiratory prescription items	Percent of problems so treated	Percent of new problems so treated
H3	Chronic obstructive airways disease	41.3	69.4	68.6
H0	Acute respiratory infections	25.8	17.6	15.6
H1	Other upper respiratory tract diseases	8.0	61.6	63.6
F5	Ear diseases	5.3	7.5	8.9
17	Respiratory symptoms	4.3	16.0	19.5
H2	Pneumonia and influenza	2.6	10.3	11.9
14	Past medical history	2.4	22.4	57.3
M2	Other skin and subcutaneous tissue disorders	2.4	5.4	6.6
8B	Other therapy	2.3	8.2	15.8
M1	Dermatitis/dermatoses	2.3	5.0	4.5
SN	Other and unspecified external effect causes	2.3	33.0	37.4
TE	Accidents due to natural/environmental factors	1.3	36.9	37.4

10.5 Alimentary system (Tables 10.19, 10.20 and 10.21)

The main categories of alimentary system drugs were anti-ulcerants (29.4%), anti-diarrhoeals (9.2%), laxatives (11.9%), and antacids and anti-flatulents (6.4%). These together made up 56.9% of alimentary drugs. Drugs used to treat diabetes made up 19.3%, and vitamins 8.3%.

The use of these drugs increased with age and was similar across the genders. The commonest problems treated were gastric intestinal diseases or symptoms, which accounted for 45.5% of scripts (see Table 10.21). "Other endocrine disease", which included diabetes, accounted for 18.8%.

Treatment with these drugs occurred in three-quarters of cases of duodenal disease and nutritional deficiency. About half the cases of diabetes and of "other diseases of the intestines and peritoneum" were so treated.

Table 10.19 Alimentary system drugs – sub-groups

Drug group, sub-group (level 2) (Alimentary script items N = 863)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 1. Alimentary tract and metabolism	**8.4**	**10.9**	**100**
Anti-ulcerants	2.5	3.2	29.4
Diabetes and diabetes management	1.6	2.1	19.3
Laxatives	1.0	1.3	11.9
Anti-diarrhoeals	0.8	1.0	9.2
Vitamins	0.8	0.9	8.3
Antacids and anti-flatulents	0.5	0.7	6.4

Table 10.20 Alimentary drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	11	10	4	0.5	10	11	8	12	16	17	23
Female	11	3	4	2	6	10	8	9	19	24	17

Table 10.21 Most frequent problems managed by alimentary drugs

Problem (READ2 sub-chapter)		Percent of alimentary prescription items	Percent of problems so treated	Percent of new problems so treated
J1	Duodenal diseases	27.3	78.1	69.6
C1	Other endocrine gland diseases	18.8	50.3	19.3
19	Gastrointestinal symptoms	10.9	40.3	27.3
A0	Bacterial food poisoning	5.2	25.1	18.2
J5	Other diseases of the intestines and peritoneum	4.9	48.2	46.1
G8	Vein, lymphatic and circulatory diseases NOS	4.4	26.2	42.2
8B	Other therapy	4.1	12.0	0
R0	Symptoms	3.7	6.6	6.3
N3	Osteopathy/chondropathy / acquired musculoskeletal deformity	3.2	24.9	19.7
G2	BP – hypertensive disease	2.4	2.3	0.8
C3	Other metabolic and immunity disorders	2.4	6.5	8.4
J3	Hernia of abdominal cavity	2.4	47.2	16.9
N0	Arthropathies and related disorders	2.3	5.0	2.2
C2	Nutritional deficiencies	1.9	70.0	67.9
AB	Mycoses	1.7	7.8	6.2
H3	Chronic obstructive airways disease	1.7	2.3	0.5
17	Respiratory symptoms	1.4	6.7	6.2
G3	Arteriosclerotic heart disease	1.4	4.2	3.4

10.6 Musculoskeletal system (Tables 10.22, 10.23 and 10.24)

The main categories of musculoskeletal system drugs were non-steroidal anti-inflammatory agents (80.7%) and treatments for gout (8.4%). The use of these drugs increased with age until about age 60, and was more frequent for males. The commonest problems treated included acute and chronic musculoskeletal pain, which accounted for 53.2% of scripts (see Table 10.24). Treatment with these drugs occurred in about a third of such cases.

Table 10.22 Musculoskeletal system drugs – sub-groups

Drug group, sub-group (level 2) (Musculoskeletal script items N = 683)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 19. Musculoskeletal system	**6.4**	**8.3**	**100**
Anti-inflammatory non-steroidal drugs (NSAIDs)	5.2	6.7	80.7
Hyperuricaemia and anti-gout	0.5	0.7	8.4

Table 10.23 Musculoskeletal drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	9	0.8	1	3	9	10	11	14	17	12	11
Female	8	0	1	4	5	7	9	11	11	12	8

Table 10.24 Most frequent problems managed by musculoskeletal drugs

Problem (READ2 sub-chapter)		Percent of musculoskeletal prescription items	Percent of problems so treated	Percent of new problems so treated
S5	Sprains and strains of joints and adjacent muscles	20.2	32.8	40.8
N0	Arthropathies and related disorders	18.1	33.5	21.1
N1	Vertebral column syndromes	12.7	35.0	44.5
N2	Rheumatism, excluding the back	11.3	25.7	34.2
C3	Other metabolic and immunity disorders	9.6	22.3	19.0
8B	Other therapy	4.0	10.2	0
R0	Symptoms	3.7	5.7	8.8
H0	Acute respiratory infections	3.2	1.5	1.8
F2	Other central nervous system disorders	2.7	11.6	28.4
K5	Other female genital tract disorders	2.6	7.0	8.9
F5	Ear diseases	2.5	2.5	2.8
SE	Contusion	2.2	15.0	15.9
1B	CNS symptom	2.1	5.8	6.8
G2	BP – hypertensive disease	1.8	1.5	5.7
19	Gastrointestinal symptoms	1.2	3.8	3.9
J0	Oral cavity, salivary glands and jaw diseases	1.2	11.5	8.7
14	Past medical history	1.0	6.8	0

10.7 Blood and blood-forming organs (Tables 10.25, 10.26 and 10.27)

The main categories of haematology drugs were anti-clotting agents (44.9%), lipid-modifying agents (33.3%), anti-anaemics (7.7%), and fluids/electrolytes (7.7%). The use of these agents was most common among older people. The commonest problems treated were cardiovascular (53.4%), with deficiency anaemias and pregnancy among the less frequent problems.

Table 10.25 Drugs affecting blood and blood-forming organs – sub-groups

Drug group, sub-group (level 2) (Blood script items N = 618)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 4. Blood and blood-forming organs	**6.1**	**7.8**	**100**

Anti-thrombotic agents	2.7	3.5	44.9
Lipid-modifying agents	2.1	2.6	33.3
Anti-anaemics	0.5	0.6	7.7
Fluids and electrolytes	0.5	0.6	7.7

Table 10.26 Blood/blood-forming organs drug: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	9	0.4	2	1	3	2	4	9	18	23	21
Female	7	3	1	0.4	4	3	4	3	10	19	15

Table 10.27 Most frequent problems managed by blood/blood-forming organ drugs

Problem (READ2 sub-chapter)		Percent of blood/blood-forming organ script items	Percent of problems so treated	Percent of new problems so treated
G3	Arteriosclerotic heart disease	20.7	44.4	12.6
G2	BP – hypertensive disease	17.7	12.4	3.6
C3	Other metabolic and immunity disorders	11.2	22.1	4.0
G5	Other forms of heart disease	9.8	26.0	17.1
8B	Other therapy	7.1	15.3	0
id	Foods for special diets	7.0	61.4	0
44	Blood chemistry	4.7	46.8	16.2
G6	Cerebrovascular disease	4.0	34.0	20.2
A0	Bacterial food poisoning	4.0	14.1	10.7
K5	Other female genital tract disorders	3.5	8.2	7.9
C1	Other endocrine gland diseases	2.9	5.7	0
D0	Deficiency anaemias	2.7	25.9	46.0
62	Antenatal care	2.3	7.9	13.2
19	Gastrointestinal symptoms	1.3	3.6	3.2
G8	Vein, lymphatic and circulatory diseases NOS	1.2	5.3	2.1

10.8 Dermatological (Tables 10.28, 10.29 and 10.30)

The main categories of dermatologicals were topical steroids (46.8%), emollients and barrier creams (11.7%), topical anti-fungals (11.7%), and scalp treatments (9.1%). The use of these drugs was most common in babies and young people, and was similar across the genders, except that female infants had a particularly high occurrence. The commonest problems treated were dermatoses (49.9%) and various types of skin infection (29.7%). A high proportion of dermatoses were so treated.

Table 10.28 Dermatological drugs – sub-groups

Drug group, sub-group (level 2) (Dermatological script items N = 638)	Percent of all scripts	Per 100 visits	Percent of drug group
Total: 10. Dermatologicals	**5.9**	**7.7**	**100**
Corticosteroids topical	2.8	3.6	46.8
Emollients and barrier creams	0.7	0.9	11.7
Anti-fungals topical	0.7	0.9	11.7
Scalp preparations	0.5	0.7	9.1

Table 10.29 Dermatological drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	7	8	9	11	10	5	5	7	8	5	6
Female	8	23	16	11	7	7	6	5	5	5	6

Table 10.30 Most frequent problems managed by dermatological drugs

Problem (READ2 sub-chapter)		Percent of dermatological prescription items	Percent of problems so treated	Percent of new problems so treated
M1	Dermatitis/dermatoses	49.9	70.3	69.5
AB	Mycoses	13.0	46.1	47.2
M0	Skin and subcutaneous tissue infections	7.4	18.2	24.1
M2	Other skin and subcutaneous tissue disorders	5.8	8.5	12.3
AD	Other infectious and parasitic diseases	3.6	59.2	81.1
SD	Abrasions	3.5	22.1	28.0
A5	Viral diseases with exanthema	3.4	23.2	33.3
A7	Other viral and chlamydial diseases	2.7	7.1	8.1
G8	Vein, lymphatic and circulatory diseases NOS	2.2	10.4	10.2
TE	Accidents natural and environmental factors	1.9	35.6	23.0
2I	General sign qualifications	1.9	37.8	54.6
R0	Symptoms	1.7	2.4	3.6
K2	Male genital organ diseases	1.2	8.4	23.2
F5	Ear diseases	1.1	1.0	0.1

10.9 Systemic hormones (Tables 10.31, 10.32 and 10.33)

The main categories of hormones was the corticosteroids (40.4%), hormone replacement therapy (17.5%), thyroid and anti-thyroid agents (17.5%), and oestrogen/progestogen preparations (15.8%). The age and gender relations of these drugs were affected by the numbers of menopausal women in whom they were used. The commonest problems treated were chronic obstructive airway disease (20.2%) and

thyroid disease (12.3%). These groups of conditions were so treated in 17.2% and 65.1% of cases, respectively.

Table 10.31 Systemic hormone drugs – sub-groups

Drug group, sub-group (level 2) (Systemic hormone script items N = 450)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 14. Systemic hormone preparations (excluding contraceptives)	**4.4**	**5.7**	**100**
Corticosteroids and related agents	1.8	2.3	40.4
Hormone replacement therapy	0.8	1.0	17.5
Thyroid and anti-thyroid agents	0.8	1.0	17.5
Other oestrogen or progestogen preps	0.7	0.9	15.8

Table 10.32 Systemic hormone drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	3	0.4	0.8	2	3	4	2	3	2	5	5
Female	8	0.6	1	2	7	4	6	13	14	12	10

Table 10.33 Most frequent problems managed by systemic hormone drugs

Problem (READ2 sub-chapter)		Percent of systemic hormone prescription items	Percent of problems so treated	Percent of new problems so treated
H3	Chronic obstructive airways disease	20.2	17.2	18.1
C0	Stroma – goitre	12.3	65.1	10.1
K5	Other female genital tract disorders	11.2	22.2	19.8
8B	Other therapy	9.7	17.8	11.4
61	Contraception	7.4	18.0	4.7
H0	Acute respiratory infections	6.6	2.3	2.1
N3	Osteopathy/chondropathy / acquired musculoskeletal deformity	6.4	31.3	9.1
N2	Rheumatism, excluding the back	5.7	9.3	1.3
15	Gynaecological history	2.8	24.4	11.3
17	Respiratory symptoms	2.2	6.8	4.5
K1	Other urinary system diseases	2.0	4.4	1.9
F5	Ear diseases	1.9	1.4	1.3
C1	Other endocrine gland diseases	1.9	3.2	0
1A	Genitourinary symptoms	1.9	7.7	0
G2	BP – hypertensive disease	1.8	1.1	0.8
C3	Other metabolic and immunity disorders	1.8	3.0	5.3
ZV	Health status and contact with health services factors	1.5	2.0	1.7
66	Chronic disease monitoring	1.5	14.8	0
N0	Arthropathies and related disorders	1.0	1.4	0

10.10 Genito-urinary system (Tables 10.34, 10.35 and 10.36)

The main categories of genito-urinary drugs were contraceptives (62.5%), urinary agents (16.7%), and gynaecological anti-infectives (12.5%). The use of these drugs was much more common in females and peaked between ages 15 and 44. The commonest problems were contraception (37.1%), and yeast infections and various other gynaecological issues. Contraception as a problem was associated with the use of contraceptive pills in 70% of cases; 76% of contraceptives were hormonal.

Table 10.34 Genito-urinary drugs – sub-groups

Drug group, sub-group (level 2) (Genito-urinary script items N = 399)	Percent of all script items	Per 100 visits	Percent of drug group
Total: 13. Genito-urinary system	**3.7**	**4.8**	**100**
Contraceptives	**2.3**	**3.0**	**62.5**
Hormonal	1.5	1.9	39.6
Non-hormonal	0.4	0.6	12.5
Unknown	0.4	0.5	10.4
Urinary agents	**0.6**	**0.8**	**16.7**
Gynaecological anti-infectives	**0.5**	**0.6**	**12.5**

Table 10.35 Genito-urinary drugs: age and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	2	0.6	0.3	0.4	2	2	0.4	2	4	5	5
Female	7	0.1	0.2	3	23	19	9	3	1	2	2

Table 10.36 Most frequent problems managed by genito-urinary drugs

Problem (READ2 sub-chapter)		Percent of genito-urinary prescription items	Percent of problems so treated	Percent of new problems so treated
61	Contraception	37.1	71.4	88.8
AB	Mycoses	11.7	25.9	27.4
K2	Male genital organ diseases	6.4	29.1	24.8
K5	Other female genital tract disorders	6.1	9.5	14.5
8B	Other therapy	6.0	8.7	0
ZV	Health status and contact with health services factors	5.5	5.7	5.9
1A	Genito-urinary symptoms	5.0	16.2	19.6
K1	Other urinary system diseases	4.4	7.6	6.9
E2	Neurotic, personality and other non-psychotic disorders	3.9	3.3	5.8
G2	BP – hypertensive disease	2.8	1.3	0
H0	Acute respiratory infections	2.3	0.6	0.9
M2	Other skin and subcutaneous disorders	2.2	2.0	3.5
M1	Dermatitis/dermatoses	1.5	1.3	0.8
K4	Female pelvic inflammatory diseases	1.5	22.7	28.9
C1	Other endocrine gland diseases	1.4	1.9	0
7E	Upper female genital tract operations	1.0	1.9	0

10.11 Sensory organ system (Tables 10.37 and 10.38)

Sensory organ preparations made up 1.4% of prescriptions (1.2% being eye preparations). The use of these drugs was much more common in males but showed little age-related change.

Table 10.37 Sensory organ drugs: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	2	0.8	2	3	1	2	3	2	3	2	1
Female	2	4	3	2	2	0.4	1	1	1	3	0.9

Table 10.38 Most frequent problems managed by sensory organ drugs

Problem (READ2 sub-chapter) (Sensory organ script items N = 143)	Percent of sensory organ prescription items	Percent of problems so treated	Percent of new problems so treated
F4 Disorders of eye and adnexa	49.2	27.5	31.5
F5 Ear diseases	41.5	10.8	11.0
M1 Dermatitis/dermatoses	3.5	0.4	0.8
8B Other therapy	3.4	0.5	0
1C Ear symptoms	2.4	5.8	5.5

Table 10.39 compares the occurrence of various types of script by practice type. Levels appear comparable, except that the level of prescribing of cardiovascular system drugs appears low for independent GPs.

Table 10.39 Comparison of prescribing rates for different drug groups, by practice type (percent of visits)

Drug group (Pharmacodes/ATC level 1)	Total (N = 8258)	Independent (N = 1400)	IPA (N = 3664)	Capitated (N = 3194)
16. Infections – systemic agents	21.6	22.9	19.7	24.4
22. Nervous system	15.8	15.2	15.7	16.3
7. Cardiovascular system	10.8	8.6	11.2	11.3
28. Respiratory system	10.0	10.3	9.5	11.0
1. Alimentary / metabolism	8.8	8.1	8.7	9.6
19. Musculoskeletal system	7.6	8.0	7.1	8.3
10. Dermatologicals	6.4	7.3	6.8	5.1
4. Blood and blood-forming organs	6.0	6.2	5.9	6.3
14. Systemic hormones	5.3	5.7	5.3	5.0
13. Genito-urinary system	4.0	4.3	4.2	3.4

11. Non-drug Treatments

The visit questionnaire (see Appendix D) provided space to record up to four diagnoses/problems. In each case GPs were asked to record actions taken and treatments given. During data entry the GP's text was recorded in full. Data on drug treatments have been presented above (section 10); here data on "other treatments" and "actions" are reported. They were coded on the basis of individual words, although these actions sometimes overlapped (e.g. "school letter" would code twice to "administration"). Only one action of each type (e.g. administration) could be counted for each problem.

Table 11.1 gives the frequency of non-drug treatments and actions. Health advice was not only given but also recorded at a rate of 38.5 per 100 visits. Investigation, examination and screening was the second most common type of action recorded (29). Referral and follow-up were recorded at 16 and 6.9 per 100 visits, respectively. Minor surgery was relatively common (6.6), as were administrative activities (5.7). "Other procedures" (3.8) and dressings (3.1) were less common. Immunisation and complementary medicine occurred in 2.1 and 1.7 per 100 visits, respectively.

Data on referral and follow-up were specifically requested elsewhere on the visit questionnaire (see Appendix D). Data values are virtually identical for referral, which is undoubtedly an action. Follow-up, which might well not be considered to be an action, was under-reported here.

Table 11.1 Frequency of non-drug treatments

Non-drug treatments	Percentage of all treatments	Frequency per 100 visits	Frequency per 100 problems
Health advice	33.7	38.5	23.0
Investigation/examination/screening	25.4	29.0	17.3
Referral	14.0	16.0	9.6
Follow-up	6.1	6.9	4.1
Minor surgery	5.8	6.6	4.0
Administration	5.0	5.7	3.4
Other procedures	3.3	3.8	2.3
Dressing	2.7	3.1	1.9
Immunisation	1.9	2.1	1.3
Complementary medicine	1.5	1.7	1.0
Physical medicine	0.6	0.7	0.4
Total (N)	**100% (9171)**	**114.2**	**68.2**

Table 11.2 shows the age and gender distribution of "health advice". Rates were similar at all ages, but the giving of health advice was reported for women 30% more frequently than for males. This differential applied to babies (< 1) even though women were most likely the recipient of the advice for both genders.

Table 11.2 Health advice: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55– 64	65–74	75+
Male	33	38	34	32	33	35	38	34	35	33	22
Female	43	42	33	32	45	50	56	50	41	39	31

Minor surgery (Table 11.3) was evenly spread by age and gender except for the under-fives, when it was less common, and the over 75s, where it was more frequent.

Table 11.3 Minor surgery: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male	7	0.4	3	7	8	6	8	8	9	8	13
Female	6	1	2	8	6	6	7	7	6	6	8

When non-drug treatments and actions are compared across practice types (Table 11.4), it appears that independents were in general slightly less active (96.6 such actions per 100 visits), but more likely than average to undertake "other procedures" and physical medicine. IPA GPs were overall slightly more active (114.6 actions per 100 visits), but less likely to record administrative activity or "other procedures." Capitated GPs were the most active (124 actions per 100 visits) and least likely to undertake minor surgery.

Table 11.4 Comparison of non-drug treatments by practice type (per 100 visits)

Non-drug treatments	Total	Independent	IPA	Capitated
Health advice	38.5	30.2	39.0	42.6
Investigation/examination/screening	29.0	26.6	29.9	28.8
Referral	16.0	13.6	15.4	18.8
Follow-up	6.9	3.4	7.4	8.0
Minor surgery	6.6	6.6	6.8	6.3
Administration	5.7	5.5	5.0	7.2
Other procedure	3.8	4.7	3.2	4.4
Dressing	3.1	3.1	3.4	2.5
Immunisation	2.1	1.4	2.1	2.6
Complementary medicine	1.7	0.3	2.0	2.0
Physical medicine	0.7	1.2	0.5	0.7
Total (N visits)	**114.2 (8258)**	**96.6 (1400)**	**114.6 (3664)**	**124.0 (3194)**

12. Disposition

More than half (57.2%) of the patients were given a specified follow-up appointment within three months of the visit; one in six (15.8%) were referred on, and 1.3% were sent for emergency evaluation. As shown in Table 12.1, these figures differed little across practice types.

Table 12.1 Frequency of types of disposition, by practice type (percent of visits)

	Total*	Independent	IPA	Capitated
Follow-up within three months	**57.2**	**56.8**	**57.1**	**57.6**
Referred on	**15.8**	**14.5**	**16.0**	**16.1**
Emergency	1.3	1.3	1.1	1.7
Unspecified	0.8	1.2	0.7	0.8
Medical/surgical specialties	8.0	7.4	8.2	7.8
Non-medical	5.7	4.6	6.0	5.8
(N)	(8258)	(1400)	(3664)	(3194)

* "Missing" is counted as "none"; follow-up and referral are not mutually exclusive; one referral is counted per visit; referral types are mutually exclusive; and "emergency" referrals are given precedence.

The frequency of follow-up was least for those aged 5–14 but increased steadily with age, with no drop-off for the oldest patients (Table 12.2).

Table 12.2 Follow-up to three months: age and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male (N=3387)	56	53	44	36	44	48	53	61	68	69	75
Female (N=4816)	58	50	42	36	44	56	59	60	66	72	77

Among follow-up requests, patients with haematological, cardiovascular, mental, metabolic and neoplasmic conditions were followed up in at least 75% of cases. Perinatal, respiratory and infectious problems were followed up in less than 52% of cases (Table 12.3).

Table 12.3 Rates of follow-up, by problem grouping

Problem grouping (based on READ2 chapters)	Percent of problems so treated	Percent of new problems so treated
Blood / blood-forming organs	82.3	81.6
Cardiovascular/circulatory	80.4	75.9
Mental	79.8	80.6
Endocrine/nutritional/metabolic/immunity	78.7	85.4
Cancers/neoplasms	77.0	75.8
Musculoskeletal /connective tissue	70.9	62.5
Congenital	70.8	51.4
Genito-urinary	70.0	63.6
Pregnancy/childbirth/puerperium	69.8	63.4
Symptoms non-specific	69.5	65.0
Digestive	67.8	59.4
Investigations	66.5	55.2
Nervous system / sense organs	63.8	59.1
Injury/poisoning	62.1	51.8
Unspecified conditions	58.6	38.0
Skin / subcutaneous tissue	56.0	50.6
Actions	54.4	49.4
Perinatal	51.6	32.3
Respiratory	46.9	36.8
Infectious/parasitic	43.1	34.6
Not coded	70.8	70.1

Referral occurred most commonly in the 15–44 years age band, suggesting an association with injury and (possibly) pregnancy rather than with illness (Table 12.4).

Table 12.4 Referral: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male (N=3387)	15	9	6	10	15	20	21	11	17	19	20
Female (N=4816)	16	9	5	9	14	22	24	20	16	16	14

Elective referral to medical and surgical services increased with age, with peaks at 35–44 and 65–74 years for men, and at 35–44 years for women (Table 12.5).

Table 12.5 Elective medical/surgical referral: age and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male (N=3387)	8	4	2	5	7	7	13	6	11	12	9
Female (N=4816)	8	3	3	4	6	10	13	10	7	9	8

Among elective referrals, patients with congenital, genito-urinary and neoplasmic and musculoskeletal conditions were referred on in at least 14% of cases. Infectious, respiratory and perinatal problems were referred on in less than 6% of cases (Table 12.6).

Table 12.6 Rates of elective referral, by problem grouping

Problem grouping (based on READ2 chapters)	Percent of problems so treated	Percent of new problems so treated
Congenital	22.0	43.6
Genito-urinary	19.3	14.9
Cancers/neoplasms	17.5	16.2
Musculoskeletal / connective tissue	14.2	11.0
Pregnancy/childbirth/puerperium	13.0	3.4
Digestive	12.4	11.1
Unspecified conditions	12.4	8.8
Mental	12.0	14.0
Symptoms non-specific	11.7	4.9
Blood / blood-forming organs	11.6	0
Cardiovascular/circulatory	10.7	14.0
Nervous system / sense organs	10.6	8.7
Endocrine/nutritional/metabolic/immunity	10.3	18.1
Investigations	9.1	8.3
Actions	7.2	10.0
Injury/poisoning	6.6	5.5
Skin / subcutaneous tissue	6.5	4.2
Infectious/parasitic	5.2	2.2
Respiratory	3.8	2.7
Perinatal	0	0
Not coded	18.7	31.8

Rates of emergency referral were fairly consistent across the life course, with a peak in the first year of life and after age 75 (although this was less marked for women) (Table 12.7).

Table 12.7 Emergency referral: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male (N=3387)	1.4	3.4	1.1	1.0	1.3	0.5	0.5	0.9	1.3	1.2	3.7
Female (N=4816)	1.3	3.8	0.2	1.8	1.4	1.4	0.6	1.4	1.8	1.1	1.2

Among emergency referrals, only pregnant patients had a high rate of emergency referral (18.4%) (Table 12.8).

Table 12.8 Rates of emergency referral, by problem grouping

Problem grouping (based on READ2 chapters)	Percent of problems so treated	Percent of new problems so treated
Pregnancy/childbirth/puerperium	18.4	12.5
Cardiovascular/circulatory	2.3	6.3
Genito-urinary	2.0	3.9
Respiratory	1.4	1.3
Endocrine/nutritional/metabolic/immunity	1.4	11.8
Injury/poisoning	1.3	2.0
Skin / subcutaneous tissue	1.3	0.9
Digestive	1.1	1.0
Symptoms non-specific	1.0	1.3
Nervous system / sense organs	1.0	1.2
Infectious/parasitic	1.0	1.1
Musculoskeletal / connective tissue	0.7	1.1
Actions	0.7	0
Mental	0.6	0
Cancers/neoplasms	0.6	1.6
Unspecified conditions	0.6	0
Investigations	0.4	0.9
Blood / blood-forming organs	0	0
Congenital	0	0
Perinatal	0	0
Not coded	0	0

Non-medical referral occurred in 5% of visits. A peak for men in the 15–34 band suggests a relationship with sport and work-related injury. For women the peak occurs later.

Table 12.9 Non-medical referral: age- and gender-specific rates (per 100 visits)

	All ages	< 1	1–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Male (N=3387)	5	2	2	4	8	10	7	4	3	5	5
Female (N=4816)	6	2	1	3	6	9	10	8	7	5	4

Patients with injuries (15.4%), musculoskeletal (15.2%) and mental (11.1%) problems had the highest rates of non-medical referral (Table 12.10).

Table 12.10 Rates of non-medical referral by problem grouping

Problem grouping (based on READ2 chapters)	Percent of problems so treated	Percent of new problems so treated
Injury/poisoning	15.4	18.5
Musculoskeletal / connective tissue	15.2	21.8
Mental	11.1	16.7
Actions	8.2	7.7
Investigations	7.9	11.7
Endocrine/nutritional/metabolic/immunity	7.0	8.1
Congenital	6.9	35.1
Symptoms non-specific	6.7	9.1
Genito-urinary	6.5	8.2
Digestive	5.9	5.6
Unspecified conditions	5.7	8.2
Nervous system / sense organs	4.8	5.0
Pregnancy/childbirth/puerperium	4.5	5.9
Cancers/neoplasms	4.2	5.1
Blood / blood-forming organs	3.9	0
Skin / subcutaneous tissue	3.9	3.7
Cardiovascular/circulatory	3.4	7.3
Respiratory	2.0	2.0
Infectious/parasitic	1.6	1.6
Perinatal	0	0
Not coded	7.6	15.6

Table 12.11 shows the destination of the referrals. Of all visits, 1.3% ended in a referral to the emergency department, 8% in a referral to a medical or surgical specialist, and 5.7% in a non-medical referral. The commonest specialties cited were orthopaedics and physiotherapy.

Table 12.11 Destination of referrals: percentage distribution and frequency per 100 visits

Destination	Percentage of referrals	Frequency per 100 visits
Emergency referral	**8.2**	**1.3**
Referral unspecified	**5.1**	**0.8**
Medical/surgical specialties	**50.6**	**8.0**
Orthopaedics	7.1	1.11
ENT	4.8	0.75
Cardiology	3.8	0.60
Gynaecology	3.5	0.55
Gastroenterology	2.9	0.45
Urology	2.8	0.43
Ophthalmology	2.4	0.38
Paediatrics	2.4	0.38
Psychiatry	2.1	0.33
Dermatology	1.7	0.27
Neurology	1.7	0.27
Rheumatology	1.6	0.25
Plastic surgery	1.4	0.22
Obstetric	1.2	0.19
Non-medical referrals	**36.1**	**5.7**
Physiotherapist	11.5	1.8
Radiology	8.9	1.4
Nursing	2.2	0.35
Counselling	2.2	0.34
Midwife	1.4	0.22
Dental	1.0	0.15
Audiology	1.0	0.15
Total (N)	**100% (1306)**	**15.8 (8258)**

13 Summary and Discussion

The NatMedCa survey set out to add to knowledge of the activities of GPs in New Zealand. Following the NAMCS model and building on previous New Zealand experience, the survey obtained data from 199 GPs; 36,211 visits were logged and details were provided from 8258 of them. Provision was made to compare types of practice. Private GPs were grouped as independent, IPA members or capitated IPA members, and the data they submitted have been reported above. Further reports on the activities of community-governed, accident and medical clinics, and emergency departments will follow, as will a report on after-hours work.

A sample was drawn from the 2717 GPs identified nationwide. A variable sampling fraction was used in different strata in order to adequately represent all practice types. The response rate was 71% for the first week of reporting and 66.4% for the second. Those who did not contribute were more likely to be male and to be in the peak working period of their careers. They reported seeing 27% more patients than respondents and worked proportionately more hours.

13.1 Results

The distribution of patient ages, relative to the population, showed that those under five attended disproportionately often and that usage increased from age 55 in women and 65 in men. Females outnumbered males overall. Reported ethnicity was distributed similarly to that of the population at large, and deprivation (NZDep) deciles (for residential address) were equally represented.

Almost half the population was eligible for some medical subsidy. About 5% of the population was judged to have poor or very poor social support and a similar percentage had a poor command of English. Indices of disadvantage (high NZDep decile, Community Services Card possession and low social support) were well correlated.

At a sizeable number of consultations (12%) patient and GP were unknown to each other, and this was most likely if the patient was aged 15–24. GPs felt that rapport had been low during 1.3% of visits and only medium at 30%.

ACC-related issues accounted for 9.4% of consultations and 2.3% were for maternity. Medical conditions made up 88% of consultations and 1.9% were for both medical and ACC issues.

More than 37% of visits were judged to be urgent, requiring "ASAP" or same-day attention. About 2% were judged to be for new life-threatening conditions and 34% were for self-limiting ones. Urgency was greater with young patients and with those from highly deprived neighbourhoods. The average severity of the condition varied upward with age.

The GP was notably uncertain concerning appropriate action in 15% of visits. Mean visit duration was 15 minutes, but about 10% of visits lasted for more than 20 minutes. Duration was highest for middle-aged patients and for those from less deprived areas.

On average, 1.4 reasons-for-visit were given per consultation and the number increased with age. When reasons-for-visit were classified, the most common type was "actions" (26%), and the second most common was non-specific symptoms (17%). The most frequently mentioned (body) systems were respiratory (17%) and musculoskeletal (10%). An alternative classification of reasons-for-visit shows 31% were diseases, 31% symptoms, 12% treatments, 8% tests and 5.8% preventive activities.

GPs were asked to identify up to four problems. Of all visits, 56% dealt with a single problem and the mean number of problems was 1.6. The number of problems increased with age. Of all problems, 49% were new or short term and this figure decreased with age; 31% were long term and 5% preventive (15% no data). The commonest problems were respiratory, which occurred at 23% of visits, followed by "actions" at 17%, and cardiovascular at 14%. Only respiratory problems showed a clear seasonal pattern, being twice as common in the winter months.

Tests and investigations were ordered following a quarter of consultations and two-thirds of these were laboratory tests. Females had more tests than males. A specific follow-up appointment was given at 57% of visits and this figure increased from a third in the 1–4 years age group to three-quarters after age 75. The patients were sent for medical or surgical consultations in 8% of cases, and for non-medical referrals the frequency was 5.7%. An emergency consultation followed 1.3% of visits, with higher rates in the first year of life and after 75 years of age in men.

A prescription was given at 66% of visits, with 128 items being given for each 100 visits, or 77 per 100 problems managed. The prescription rate was relatively constant, but the number of items prescribed increased with age.

The most commonly used drug category was the anti-infectives, and the great majority of these were antibiotics; drugs of this category were prescribed in just over a fifth of visits (21.6%). The second most common category, drugs affecting the nervous system, was prescribed at 15.8% of visits, but it includes two disparate sub-categories: analgesics (9.8 per 100 visits) and psychoactive drugs (5.9). Drugs affecting the cardiovascular system were prescribed at 10.8% of visits and 84% of these were anti-hypertensives. Respiratory system drugs were prescribed at 10% of visits; more than half of these were asthma treatments, prescribed at 8.9 per 100 visits.

Non-drug actions were recorded at 62% of visits. Health advice was the most frequent such action, recorded at a rate of 39 per 100 visits, and was more often offered to females. Minor surgery and administrative actions each amounted to about 6 per 100 visits.

Comparison of the various parameters discussed above shows only subtle differences across practice types. The following impressions have not been examined statistically and could result from random variation or be explained by differences in the population served. For example, capitated practices make more ACC claims, but this could be explained by the age and socio-economic characteristics of their clientele. The modal practice type is (non-capitated) IPA. IPA GPs recorded more reasons per visit and reported more actions under the reasons-for-visit category.

GPs belonging to capitated IPA practices saw more new patients, more ACC patients and treated more respiratory problems. They saw fewer urgent cases and recorded fewer reasons-for-visit. Capitation might influence practice activities so that fewer self-limiting problems are seen, more preventive visits undertaken, longer visits encouraged and less routine follow-up scheduled; none of these appear to be the case on this initial examination of the data. The use of tests and of patterns of treatment should be better focused; to estimate whether such differences can be detected requires a more detailed analysis of the data.

Independent GPs saw fewer deprived patients – fewer with Community Services Cards, more with low deprivation (NZDep) addresses and more with good social support. Such GPs saw fewer patients unknown to them, had fewer low-rapport visits and experienced less uncertainty. They saw more maternity cases, more urgent cases and more new problems and recorded fewer preventive visits. Independent GPs ordered more laboratory tests but recorded fewer actions and prescribed fewer drugs. They reported fewer referrals (emergency and routine) and follow-up appointments, and undertook more procedural interventions.

These differences will be further investigated. For any difference it will be interesting to see if the explanation lies with the nature of the people seen, with the practice style of the GP, or with the practice type.

13.2 Strengths of this survey

- The sampling frame included the majority of New Zealand GPs.
- Stratification ensured that all types of practice and each region were represented and can be compared.
- Previous similar surveys in New Zealand and Australia ensure comparability across time and between nations.
- Simultaneous collection of data from other primary health care organisations (particularly community-governed and A&M clinics) will allow comparisons to be made.
- A greater range of data has been gathered for comparison with other surveys. In particular there is data on:
  - the patient's relationship with the practice
  - the urgency and severity of the problems dealt with
  - the GP's uncertainty and his/her estimation of rapport
  - the GP's background and current activities
  - practice characteristics.
- Ethnicity has been reported using a method comparable to the national census.
- The data collected will be useful in evaluating changes produced in response to the Government's Primary Health Care Strategy.

13.3 Limitations of this survey

- The sample of areas from the rural stratum was chosen on judgement criteria at the first selection stage rather than by a strictly random process. The areas not selected at the first stage of sampling in the rural stratum represented 16% of GPs serving 18% of the total population and 37% of the rural population. A comparison of the rural populations between selected and non-selected areas is presented above (Table 2.3).
- Approximately 30% percent of the GP sample declined to participate. They tended to be male and reported greater than average patient loads. If the busiest GPs differ in some systematic way in their activities, this may bias the results.
- The survey of patient visits is practitioner- rather than population-based. Thus data refer to the actual work of primary health care providers rather than to population utilisation or to the needs of the population. For some analyses, knowledge of the denominator population is necessary.[41]
- Data are cross-sectional and deal with visits rather than episodes of illness.
- The reliability and validity of the information provided by GPs has not been confirmed by independent measurement.

- Sampling has not been designed to identify a specific Māori dimension among health care providers.
- Data from after-hours general practice are excluded.

13.4 Conclusions

The National Primary Medical Care survey set out to characterise patients seen in primary health care, to describe the problems they present and to give an account of their management. This report has presented the methodology and the findings for the weekday, daytime work of private GPs.

The major significance of these findings will be elucidated in future comparisons with previous research and with other practice groupings, particularly community-governed and A&M clinics.

Differences between types of private general practice seem to be small, but require more complex analysis. For example, the suggestion that the patients of capitated GPs make more frequent claims on ACC is interesting but needs to be confirmed after controlling for the patients' age, gender and deprivation status. Similarly, the apparent distinctiveness of independent GPs needs detailed analysis. For example, it may be that their higher no-treatment rates are explained by reduced patient deprivation. The data held on practices and GPs also provide a number of variables that should be controlled before conclusions can be reached. These include practice setting (e.g. urban/rural, area deprivation) and GP characteristics (e.g. age and gender).

The adoption of capitation funding is the most radical change encompassed by the types of practice distinguished here. It is in the process of being adopted more widely under the present government's Primary Health Care Strategy. Future study will reveal whether capitation will induce positive change, result in cost shifting (to ACC, for example) or have little effect on practice style. The results presented here will provide an essential baseline for such work.

The NatMedCa data in their present form will be of value to those needing data on the frequency with which various issues occur in general practice in New Zealand.

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Appendix A: Log of Visits

NATMEDCA

National Primary Medical Care Survey

(F) LOG OF VISITS

Practitioner Study ID Number _____ **Questionnaire Number** _____

Please complete this log for all patients. Fill in the visit form ONLY for the fourth patient.
Start Here

Patient One	Patient Two
Gender male ☐ female ☐	**Gender male ☐ female ☐**
Date of birth: day mth yr	**Date of birth: day mth yr**
Ethnicity:	**Ethnicity:**
(see options on cover, tick the space or spaces that apply)	(see options on cover, tick the space or spaces that apply)
1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9☐	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9☐
Com'ty Services Cd yes☐ no ☐	Com'ty Services Cd yes☐ no ☐
High user card yes☐ no ☐	High user card yes☐ no ☐

Patient Three	Patient Four
Gender male ☐ female ☐	**Gender male ☐ female ☐**
Date of birth: day mth yr	**Date of birth: day mth yr**
Ethnicity:	**Ethnicity:**
(see options on cover, tick the space or spaces that apply)	(see options on cover, tick the space or spaces that apply)
1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9☐	1☐ 2☐ 3☐ 4☐ 5☐ 6☐ 7☐ 8☐ 9☐
Com'ty Services Cd yes☐ no ☐	Com'ty Services Cd yes☐ no ☐
High user card yes☐ no ☐	High user card yes☐ no ☐
	Please complete report for this visit.

→ **Please enter address here for patient number 4**

Questionnaire number _____

_____ _____
number Street

Town/Suburb _____

COMPLETE REPORT FORM →

Appendix B: Visit Report

Practitioner ID Number _____ | **NATMEDCA** | **(G) VISIT REPORT** | **Questionnaire number**

1 **Date of visit** - day _____ month _____ year_____

3 **Was there a hidden agenda apart from the reason(s) for visit?** yes ☐ no ☐

REASON FOR VISIT (persons own words)

1._____

2._____

3._____

4._____

4 **How would you assess this person's social circumstances?**
good ☐ average ☐ poor ☐ threatening ☐ unknown ☐

5 **What is this person's marital status?** married ☐ de facto ☐ separated ☐ divorced ☐ widowed ☐ never married ☐

6 **Please include all issues** (well person care, psycho-social difficulties, practitioner identified issues etc.) **as problems and mention all interventions under treatment** (scripts, immunisation, smears, certification, reassurance, counselling etc.)
***Please give Drug name, dose, interval, duration as on prescription**

DIAGNOSIS/PROBLEM

1_____

Status of problem: new ☐ short-term FU ☐ long-term FU ☐ Long-term with flare-up ☐ preventative ☐
***Action, treatment, drugs** for this problem:

DIAGNOSIS/PROBLEM

2_____

Status of problem: new ☐ short-term FU ☐ long-term FU ☐ Long-term with flare-up ☐ preventative ☐
***Action, treatment, drugs** for this problem:

DIAGNOSIS/PROBLEM 3_____

Status of problem: new ☐ short-term FU ☐ long-term FU ☐ Long-term with flare-up ☐ preventative ☐
***Action, treatment, drugs** for this problem:

DIAGNOSIS/PROBLEM

4_____

Status of problem: new ☐ short-term FU ☐ long-term FU ☐ Long-term with flare-up ☐ preventative ☐
*Action, treatment, drugs for this problem

7

INVESTIGATIONS ORDERED

☐ FBC	☐ Culture
☐ Sed rate	☐ Pap Smear
☐ Fe etc, B12, FA	☐ ECG
☐ Serum glucose	☐ Plain X-Ray
☐ Creatinine/urea	☐ Contrast etc
☐ Liver function	☐ Ultrasound
☐ Lipids	☐ Spirometry
☐ Thyroid	☐ Other

DISPOSITION

Follow-up within 3/12? yes ☐ no ☐

Referred on? yes ☐ no ☐

To specialist (enter speciality)

_____

Sent to Acute Assessment Unit or Emergency Dept. yes ☐ no ☐

GENERAL AND EVALUATION (worst problem)

Is person new to practice? yes ☐ no ☐
Is patient new to practitioner? yes ☐ no ☐
Is practice usual source of care? yes ☐ no ☐
Number visits to practice in previous 12 months: _____
Has/will person see nurse today? yes ☐ no ☐
Has/will person see doctor today? yes ☐ no ☐
Source of payment? Cash/GMS ☐ ACC ☐
Duration of visit? shorter ☐ average (10-15min) ☐ longer ☐
Was patient (child's caregiver) fluent in English? yes ☐ no ☐
Practitioner perception of urgency of this visit?
ASAP ☐ today ☐ this week ☐ this month ☐
Severity? life threatening ☐ intermediate ☐ self-limiting ☐ NA ☐
Disability? Extent: none ☐ minor ☐ major ☐
Type: temporary ☐ permanent ☐
Uncertainty as to diagnosis or management?
none ☐ low ☐ medium ☐ high ☐
General rapport achieved? low ☐ medium ☐ high ☐

Appendix C: Practitioner Questionnaire

NATMEDCA
National Primary Medical Care Survey

(C) PRACTITIONER QUESTIONNAIRE

Practitioner Study ID number_____ Practice Study ID Number_____

Medical Practitioners please complete this box

1. Age at last birthday (years) _____

2. Gender – Male ☐ Female ☐

3. What is your ethnicity:
(tick the space or spaces that apply to you)

(1) New Zealand European ☐
(2) Maori ☐
(3) Samoan ☐
(4) Cook Island Maori ☐
(5) Tongan ☐
(6) Niuean ☐
(7) Chinese ☐
(8) Indian ☐
(9) Other ☐

4. How many years in this practice _____

5. Total years in General Practice_____

6. Post Graduate Qualifications

(a) M/FRNZCGP ☐
(b) Overseas M/FRNZCGP equivalent ☐
(c) Dip Obs ☐
(d) Dip Anaesth ☐
(e) Other ☐
(specify) _____

7. Are you a member of the NZ Medical Association? yes ☐ no ☐

8. How many hours per month do you spend on CME / MOPS? _____hours

9. Where did you obtain your medical degree?

(a) New Zealand ☐
(b) Australia ☐
(c) United Kingdom ☐
(d) Asia ☐
(e) North America ☐
(f) Other ☐(specify)_____

10. What are your employment arrangements during regular day-time for your standard office hours?

(a) Self-employed ☐ (b) Salaried ☐

11. (a) Do you provide after hours cover? yes ☐ no ☐

(b) If yes, how often do you provide cover on week nights?
(e.g. 1 in 5 nights)? _____

(c) If yes, how often do you cover at the weekend?
(e.g. 63 hours every 3 weeks)? _____

12. What are your after-hours employment arrangements?

(a) Self-employed ☐ (c) Not applicable ☐
(b) Salaried ☐

13. (a)Do you provide medical care to rest homes? yes ☐ no ☐

(b) If yes, do you claim GMS for rest home visits?
yes ☐ no ☐

14. Number of half days worked per week _____

15. Average number of day-time patients per week _____

16. Do you undertake obstetric deliveries? yes ☐ no ☐

17. (a) Do you provide telephone consultations in place of face-to-face consultations? yes ☐ no ☐

(b) If yes, please estimate the number of hours per week for telephone consultations _____

Appendix D: Nurse Questionnaire

NATMEDCA

National Primary Medical Care Survey

(D) NURSE QUESTIONNAIRE

Practitioner Study ID number_____ Practice Study ID Number_____

Nurses and Midwives please complete this box

1. Age at last birthday(years) _____

2. Gender – Male ☐ Female ☐

3. What is your ethnicity?

(tick the space or spaces that apply to you)

(1) New Zealand European ☐

(2) Maori ☐

(3) Samoan ☐

(4) Cook Island Maori ☐

(5) Tongan ☐

(6) Niuean ☐

(7) Chinese ☐

(8) Indian ☐

(9) Other ☐

4. How many years in this practice? _____

5. How many years as an Independent Practitioner? ____

6. What are your Post Graduate Qualifications?

(specify) _____

7. How many hours per month do you spend on CME? _____hours

8. Are you a member of:

(a) NZNO ☐ (c) College of Midwives ☐

(b) College of Nursing ☐ (d) Other ☐ (specify)

_____

9. Where did you qualify?

(a) New Zealand ☐

(b) Australia ☐

(c) United Kingdom ☐

(d) Asia ☐

(e) North America ☐

(f) Other ☐ (specify)_____

10. What are your employment arrangements?

(a) Self employed/profit sharing ☐

(b) Salaried ☐

11. Number of half days worked per week? _____

12. Average number of patients per week? _____

13. Are you a Registered Nurse? yes ☐ no ☐

14. Are you a Registered Midwife? yes ☐ no ☐

Appendix E: Practice Nurse Questionnaire

NATMEDCA

National Primary Medical Care Survey

(E) PRACTICE NURSE SURVEY

Practice Nurse Study ID number _____ Practice Study ID Number_____

BACKGROUND INFORMATION

1. **Age at last birthday (years)** _____

2. **Gender** male ☐ female ☐

3. **What is your ethnicity?** (tick the space or spaces that apply to you)

   (1) New Zealand European ☐
   (2) Maori ☐
   (3) Samoan ☐
   (4) Cook Island Maori ☐
   (5) Tongan ☐
   (6) Niuean ☐
   (7) Chinese ☐
   (8) Indian ☐
   (9) Other ☐

4. **What were your initial qualifications?**

(a) RGN ☐ (b) RGON ☐ (c) RCpN ☐ (d) EN ☐ (e) RM ☐ (f) BA/BHSc/BN ☐ (g) Other ☐

5. **Please give any post-graduate qualifications** _____

6. **How long have you worked as a nurse?** (approx. full time equivalent years) _____

7. **How long have you worked as a practice nurse?** (approx. full time equivalent years) _____

8. **Please indicate if you have a membership in a Professional Organisation.**

(a) NZNO ☐ (b) College of Nursing ☐ (c) Other (please specify)_____ (d) None ☐

ACTIVITIES

9. **How many hours do you work at the practice in an average week? hrs/wk** _____

10. **Approximately how many hours do you spend on the following duties in an average week?**
    (use decimals if appropriate eg 2.3 hrs)

    (a) Direct Patient contact _____ hrs
    (b) Patient contact by phone _____ hrs
    (c) Administration _____ hrs
    (d) Housekeeping _____ hrs
    (e) Other duties _____ hrs (specify)

    _____

11. (a) Do your clients make appointments specifically to see you? yes ☐ no ☐

(b) If yes, how many appointments would you take in an average week? _____

12. How long is usually allocated for a nurse appointment? _____ minutes

13. Does your practice charge a fee for nurse appointments? yes ☐ no ☐

14. What practice nurse clinics are offered at your practice?

(a) None	☐	(e) Smears	☐
(b) Hypertension	☐	(f) Asthma	☐
(c) Diabetes	☐	(g) Immunisation	☐
(d) Contraception	☐	(h) Antenatal	☐
		(i) other	☐ (specify)_____

15. Which of the following patient-contact duties do you *carry out* ? (A) and which may be undertaken without *immediate* doctor referral? (B)

ACTIVITY TYPE	CARRY OUT (A)		INDEPENDENTLY (B)	
	yes	no	yes	no
(a) Immunisations	☐	☐	☐	☐
(b) Child Care Advice	☐	☐	☐	☐
(c) Cervical Screening	☐	☐	☐	☐
(d) Contraception	☐	☐	☐	☐
(e) Dressings	☐	☐	☐	☐
(f) Suturing	☐	☐	☐	☐
(g) Counselling	☐	☐	☐	☐
(h) Group Education Activity	☐	☐	☐	☐
(i) Dietary/Lifestyle Advice	☐	☐	☐	☐
(j) Repeat Prescriptions	☐	☐	☐	☐
(k) Blood Taking	☐	☐	☐	☐
(l) Home Visiting	☐	☐	☐	☐

Many thanks for helping us by completing this questionnaire.
For information on the Survey, phone:
Antony Raymont, Medical Director on 09 483 4555 or 0800 007925, 021 998 118

The contribution of Rose Lightfoot in selecting these questions is acknowledged.

Appendix F: Practice Questionnaire

NATMEDCA

National Primary Medical Care Survey

(A) PRACTICE QUESTIONNAIRE

Practice Study ID Number_____ **Please tick the appropriate box(es).**

ACCESS

1. Please indicate the standard day, half days closed, and extra hours the practice is open.

(a) standard day (eg 8.30am – 5.00pm) Open _____ Close _____

(b) half days closed (eg Wed. pm) _____

(c) extra hours (eg Thursday evening or Saturday morning)_____

2. Does the practice use a booking system? yes ☐ no ☐

3. What booking interval is usual? _____ minutes

4. (a) Do practitioners in the practice make home visits? yes ☐ no ☐

(b) If yes, what is the average number of home visits made per week? _____

5. What after-hours arrangements does the practice have? (tick all that apply)

(a) Provides own after-hours cover ☐

(b) Member of collective after-hours service ☐

(c) Sign out to after-hours service ☐

(d) Other ☐ (please specify)_____

6. Does the practice/local GP organisation undertake any of the following?

(a) Formal community needs assessment yes ☐ no ☐

(b) Locality service planning yes ☐ no ☐

(c) Inter-sectoral case management yes ☐ no ☐

SERVICES PROVIDED

7. What screening programmes with dedicated recall and follow up systems are provided?

(a) Cervical smear ☐ (c) Mammogram ☐

(b) Diabetes ☐ (d) Other ☐ (please specify)_____

_____

_____

8. Does the practice provide:
(please tick all that apply).

(a) Minor surgery yes ☐ no ☐

(b) Mental health services yes ☐ no ☐

(c) Group health promotion yes ☐ no ☐

(d) Formal counselling services yes ☐ no ☐

(e) Community worker services yes ☐ no ☐

(f) Dental health services yes ☐ no ☐

(g) Occupational medicine yes ☐ no ☐

(h) Dedicated adolescent medicine yes ☐ no ☐

(i) Dedicated older persons care yes ☐ no ☐

(j) Sports medicine yes ☐ no ☐

(k) Emergency / accident call out yes ☐ no ☐

(l) Other: yes ☐ no ☐

(**If yes,** please specify) _____

_____

_____

9. Are maternity services provided by the practice?

(a) By doctor? yes ☐ no ☐- **If yes**, please tick all of the following which apply.

antenatal ☐ intrapartum ☐ postpartum ☐

(b) By midwife? yes ☐ no ☐- **If yes**, please check all of the following which apply.

antenatal ☐ intrapartum ☐ postpartum ☐

(c) By nurse? yes☐ no☐- **If yes**, please check all of the following which apply.

antenatal ☐ intrapartum ☐ postpartum ☐

10. Does the practice provide independent nursing consultations? yes ☐ no ☐
(*patients seen by nurse without same-day doctor consultation*)

11. (a) Does the practice provide complementary / alternative services? yes ☐ no ☐

(b) If yes, please specify _____

_____

_____

EQUIPMENT

12. Does the practice have the following equipment on site?

(a) ECG machine yes ☐ no ☐

(b) Equipment for intubation yes ☐ no ☐

(c) Xray facilities yes ☐ no ☐

(d) Autoclave yes ☐ no ☐

(e) Baby Scales yes ☐ no ☐

(f) Liquid Nitrogen yes ☐ no ☐

(g) Defibrillator yes ☐ no ☐

(h) Cautery Machine yes ☐ no ☐

(i) Proctoscope yes ☐ no ☐

MIX OF PERSONNEL

13. Please indicate the number of FTE workers in the following categories:
(please use Full Time Equivalents eg 0.5 = 2.5 days/week; when one person performs more than one role, please estimate amount of time for each. Rough data is better than none at all!)

Worker Category	Number of FTE Staff
a. Manager	
b. Reception staff	
c. Administrative staff	
d. Doctor	
e. Nurse	
f. Community worker	
g. Midwife	
h. Other (specify)_____	

14. Please indicate the number of staff according to the following ethnicity categories.

(a) New Zealand European _____

(b) Maori _____

(c) Samoan _____

(d) Cook Island Maori _____

(e) Tongan _____

(f) Niuean _____

(g) Chinese _____

(h) Indian _____

(i) Other _____

QUALITY MANAGEMENT

15. Does the practice have a written policy on complaints? yes ☐ no ☐

16. Does the practice have a written policy on critical events investigation procedures? yes ☐ no ☐

17. Does the practice have a written training policy for staff? yes ☐ no ☐

18. Does the practice have a written development policy for staff? yes ☐ no ☐

19. Does the practice have a written policy for ongoing quality management (eg "RNZCGP quality programme, CHASP")? yes ☐ no ☐

20. Does the practice utilise a formal peer review process? yes ☐ no ☐

21. Does the practice utilise evidence-based protocols and / or guidelines? yes ☐ no ☐

INFORMATION SYSTEMS

22. Please indicate which of the following information systems are used by the practice?

(a) Computerised age/sex register yes ☐ no ☐

(b) Computerised patient records yes ☐ no ☐

(c) Family-based records yes ☐ no ☐

(d) Computerised disease register yes ☐ no ☐

(e) Computer-based recall system(s) yes ☐ no ☐

23. What percentage of patients have NHI numbers allocated? _____%

SITE INFORMATION

24(a). What is the geographical location of the practice?

(1) Large City (Auckland) ☐

(2) City (100-500k pop.) ☐

(3) Town (30-100k pop.) ☐

(4) Small Town (<30k pop.) ☐

(b). Is the practice in a rural location? yes ☐ no ☐ **(if no**, go to question 25)

(c). If yes, What is the rural ranking score? _____score (see enclosed rural ranking score sheet)

25. Is the practice in the central business district? yes ☐ no ☐

26. Please estimate the ethnic/cultural characteristics of the people seen at the practice:

(a) % New Zealand European _____

(b) % Maori _____

(c) % Other Polynesian _____

(d) % Other ethnic groups _____

(e) % English as a second language _____

FINANCIAL AND COMMERCIAL INFORMATION

27. Please indicate which of the following best describes the practice. (choose only one)

(a) Accident and Medical Centre ☐

(b) Health Care Aotearoa affiliated ☐

(c) Independent Practice Association (IPA) affiliated ☐

(d) Independent practice Inc. (including CareNet) ☐

28. Please indicate which of the following government subsidy payment systems apply to your organisation. (tick all that apply)

(a) GMS claims for individual consultations. ☐

(b) Capitation ☐

(c) Holding pharmaceutical budget ☐

(d) Holding investigation budget ☐

29. What is the standard charge for a patient visit ? (please fill in each box below)

	CSC	HUHC	No Card
Child <6	$_____	$_____	$_____
Child >6	$_____	$_____	$_____
Adult	$_____	$_____	$_____

30. (a) For what percentage of visits are patient fees reduced? _____%

(b) For what percentage of visits are patient fees waived? _____%

31. Is there any category of consultation for which there is no charge (eg contraceptive advice)**?**

(please specify)_____

HISTORY

32. When was the practice established? year _____

33. What were the key reasons / events leading to the establishment of the practice?

_____

_____

_____

_____

_____

34. Who are the key sponsors now? (tick as many as apply)

(a) None ☐ (b) Union ☐ (c) Community Organisation ☐ (d) Other ☐

name_____

_____

35. What is the legal structure of your practice?

(a) Sole trader	☐	(d) Incorporated society	☐
(b) Partnership	☐	(e) Limited liability company	☐
(c) Community trust	☐	(f) Other	☐ (please specify)

_____

MANAGEMENT STRUCTURE AND COMMUNITY PARTICIPATION

36. (a) Does the practice organisation have a separate management committee? yes ☐ no ☐

(if no, go to question 36)

(b) If yes, is there patient representation on the committee? yes ☐ no ☐

(c) What appointment / election procedures are used for the management committee?

_____

_____

37. What role does the practice professional staff play in the following:

(a) Clinical organisation? (e.g. scheduling)_____

(b) Financial management?_____

38. Are you a "Maori provider"? (ie eligible for Maori provider funding) yes ☐ no ☐

Glossary and List of Acronyms

ACC: Accident Compensation Corporation – administers the New Zealand accident compensation scheme covering work and non-work injuries.

Actions: actions undertaken by a GP – include prescribing, dressings, physical treatment, surgery, screening procedures, immunisation, reassurance, counselling and certification.

A&M: Accident and Medical Clinics – provide extended-hours primary health care cover and allow access without an appointment. The majority are situated in Auckland or Hamilton.

ATC: Anatomical Therapeutic Chemical **–** a system for classifying pharmaceuticals.

Capitation: a funding arrangement under which a general medical practitioner, or a group of practitioners, receives funding based on the number and characteristics of the patients registered with them for care.

Community-governed practices: primary health care providers whose governance rests with a community body and in which the practitioners and other workers do not share profits.

CSC: Community Services Card – eligibility depends on economic need and allows access to government subsidies for primary health care and medication.

Disability: includes short-term (e.g. influenza) as well as long-term (e.g. sequelae of stroke), major and minor.

ED: Emergency Department – operated at the public hospital in each large town.

GMS: General Medical Services benefit – a payment claimed from the government by GPs on behalf of eligible patients.

Hidden agenda: a problem the patient wishes to have dealt with but has difficulty mentioning.

HUHC: High User Health Card – eligibility depends on frequent use of primary medical care and allows access to government subsidies for primary health care and medication.

Independent practitioners: self-employed practitioners not belonging to an IPA.

IPA: Independent Practitioners Association – undertakes contract negotiations, administrative functions and programme development for a group of GPs.

MOPS: maintenance of professional standards – a system for ongoing education of GPs.

NAMCS: National Ambulatory Medical Care Survey – an ongoing US survey which was the basis for the methodology used in this study.

NatMedCa: National Primary Medical Care Survey 2001/02, of which this document is the first report.

Problems: issues identified by GPs for which the patient requires assistance; they include standard (including provisional) diagnoses, symptoms, psycho-social difficulties, the need for prescription medicines, practitioner-identified issues, administrative tasks and prevention or screening.

Problem status: new – first presentation of a problem; short-term follow-up – review of a problem expected to resolve completely; long-term follow-up – review of a chronic problem; long-term with flare up – a chronic problem with deterioration or new complication; preventive – a visit for screening or immunisation, etc.

Rapport: a GP's perception of the quality of the relationship with the patient during consultation.

READ: a classification and coding system for reason-for-visit and diagnosis in primary medical care, officially adopted in New Zealand.

Referral: the direction of a patient to an additional source of care.

RfV: Reason-for-visit – the statement of a patient's reason for visiting the GP.

RHA: Regional Health Authority – one of four purchasers of health care and disability support services, funded by the Ministry of Health 1992–97.

Severity: a GP's assessment of the capacity for harm of the most severe of the patient's problems; this covers life-threatening (applies only to a new problem), intermediate and self-limiting.

Social support: includes assessment of primary and family/whanau relationships, housing and neighbourhood, work, transport and financial resources.

Third sector: community-governed organisations (as distinguished from government and private ownership).

Treatment: synonymous with action.

Uncertainty: the degree of a GP's lack of certainty as to how to manage the patient (uncertainty is low if diagnosis is uncertain but the need for emergency referral is clear).

Urgency: a GP's assessment, in hindsight, of the time within which the patient should have been seen; applied to the most urgent problem detected.

Visit: an interaction between GP and patient; synonymous with consultation and encounter.

WaiMedCa: Waikato Primary Medical Care Survey 1991/92 – the previous survey similar to that reported here.

White Pages listings: the section of the telephone directory that lists Medical Practitioners and Clinics.