6   General practice

General practice is a major component of Australia's healthcare system and plays an important role in the delivery of health services. General practitioners (GPs) form part of the primary health care system and are at the interface between primary care and other parts of the health system. Consequently, support for general practice is an important part of government strategy to improve health outcomes in Australia.

Descriptive information about services provided in general practice is contained in section 6.1. Policy developments in general practice are discussed in section 6.2, a framework of performance indicators is presented in section 6.3 and key results are discussed in section 6.4. Future directions for reporting are covered in section 6.5 and relevant terms are defined at section 6.6.

A number of significant changes have been made to enhance the general practice chapter this year. These include:

- reporting new appropriateness indicators. Two indicators have been discontinued and replaced by indicators that better reflect the activities of GPs;

- enhanced data on expenditure are reported including non-Medicare data, Department of Veterans' Affairs (DVA) and State and Territory government contributions; and

- improved definitions to better reflect the supply of general practice services.

These changes are discussed in more detail in sections 6.1 – 6.4.

Supporting tables

Supporting tables for chapter 6 are provided on the CD-ROM enclosed with the Report. The files are provided in Microsoft Excel 97 format as \Publications\Reports\2002\Attach6A.xls and in Adobe PDF format as \Publications\Reports\2002\Attach6A.pdf.

Supporting tables are identified in references throughout this chapter by an 'A' suffix (for example, table 6A.3 is table 3 in the electronic files). They may be

subject to revision. The most up-to-date versions of these files can be found on the Review web page (www.pc.gov.au/gsp/). Users without Internet access can contact the Secretariat to obtain up-to-date versions of these tables (see details on the inside front cover of the Report).

6.1 Profile of general practice

Definitions, roles and responsibilities

General Practitioners form part of the medical practitioner workforce. The medical practitioner workforce comprises doctors trained in a specialty — including general practice — and other medical practitioners (OMPs). All GPs trained since 1996 must undertake the general practice specialist training program. The Royal Australian College of General Practitioners (RACGP) defines a GP as: "a medical practitioner who provides primary, comprehensive and continuing care to patients and their families within the community" (Britt *et al.* 1999, p. XXXV). For the purposes of Medicare, 'recognised' GPs are those who are vocationally registered under section 3F of the *Health Insurance Act 1973 (Cth)*, hold fellowship of the RACGP or equivalent, or hold a recognised training placement (Britt *et al.* 1999). A summary of common health terms is provided at section 6.6.

In Australia, GPs are an important source of primary health care.[1] The services provided by GPs include: diagnosing and treating illness (both chronic and acute); providing preventive care through to palliative care; referring patients to consultants, allied health professionals, community health services, and hospitals; and acting as gatekeepers for other health care services (DHFS 1996). They may also be involved in teaching and research.

While the majority of GPs are private practitioners who provide services as part of a general practice (funded largely by the Commonwealth Government's Medicare Benefits Schedule, supplemented by patient contributions), they may also be employed by hospitals. Over recent years there has also been an emerging trend of corporate entities purchasing general practices and in some cases, amalgamating these practices into medical centres that include other health services. In some parts of rural Australia, GPs provide a range of services to admitted patients, and rural and urban GPs staff emergency departments, although this latter role is declining

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[1] Primary care refers to the care provided at the patient's first point of contact with the health care system. Other examples of primary care include services provided by community health centres, pharmacists in local pharmacies, nurses in the home and a number of other health providers in non-institutional settings.

(DHAC 2000a). State and Territory governments fund services provided by visiting medical officers or salaried doctors to public patients in public hospitals, and visiting medical and other primary health care services provided in rural and remote areas. State and Territory governments are also responsible for registering and licensing GPs in their jurisdiction. Commonwealth, State and Territory governments provide incentives for GPs to locate in rural and remote areas.

Funding

Almost all of the services provided by private GPs are funded in part by the Commonwealth Government through Medicare and the DVA. This is illustrated by the *Bettering the Evaluation and Care of Health* (BEACH) study of general practice activity in Australia (Britt *et al.* 2000). About 1000 GPs participate in the BEACH study each year, with each participant recording details of 100 consecutive encounters. (Britt *et al.* (2000) define an 'encounter' as any professional interchange between a patient and a GP.) The BEACH study found that, in 2000-01, 94.6 per cent of all encounters with GPs were for services funded by Medicare or DVA (table 6.1).

Table 6.1   **Encounters by source of funding, 2000-01[a, b]**

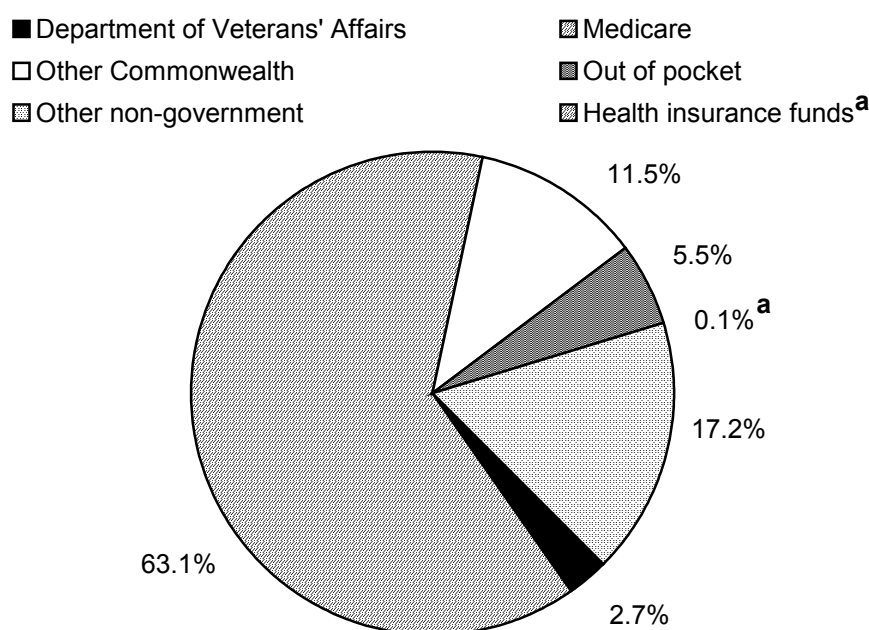|	Number	Rate per 100 encounters[c]	95% LCL[d]	95% UCL[d]
GPs participating in the BEACH study	998	..	..	..
Total encounters for which BEACH data were recorded	99 307	98.1	97.8	98.4
Encounters with missing data	12 512	..	..	..
Direct consultations[e]	85 148			
No charge	554	0.6	–	1.5
Medicare paid[f]	82 113	94.6	94.2	95.0
Workers' compensation	1 808	2.1	1.8	2.4
Other paid (hospital, State, etc.)	677	0.8	–	1.6
Indirect consultations[g]	1 647	1.9	1.2	2.6

[a] April 2000 to March 2001. [b] Britt *et al.* (2000) define an 'encounter' as any professional interchange between a patient and a GP. [c] Missing data for 12 512 encounters removed. Percentage base (N = 86 795). [d] UCL = upper confidence level; LCL = lower confidence level. [e] Categories do not add up to total direct consultations because there is overlap in some cases. [f] Includes Commonwealth payments made through DVA. [g] Indirect consultations are those at which the patient is not seen by the GP but which generate a prescription, a referral, a certificate or other service. They are usually the result of a phone call by a patient. .. Not applicable. – Zero or close to zero.

Source: Britt et al. (2001); table 6A.1.

Medicare fee-for-service payments comprised 81.7 per cent of Commonwealth expenditure on GPs in 1998-99 (and 63.1 per cent of total expenditure on GPs)

(figure 6.1). The Commonwealth also provided payments for GPs through the DVA local medical officer arrangements,[2] the Divisions of General Practice Program, the Practice Incentive Program (PIP) and the GP Immunisation Incentive Scheme (DHAC 2000a). Non-government sources contributed 22.7 per cent of total expenditure on GPs in 1998-99, comprising payments by health insurance schemes (including workers' compensation and third party insurance) and by private individuals.

Figure 6.1   **Sources of funding for GPs, 1998-99**

- ■ Department of Veterans' Affairs
- ▨ Medicare
- □ Other Commonwealth
- ▤ Out of pocket
- ▨ Other non-government
- ▨ Health insurance funds[a]

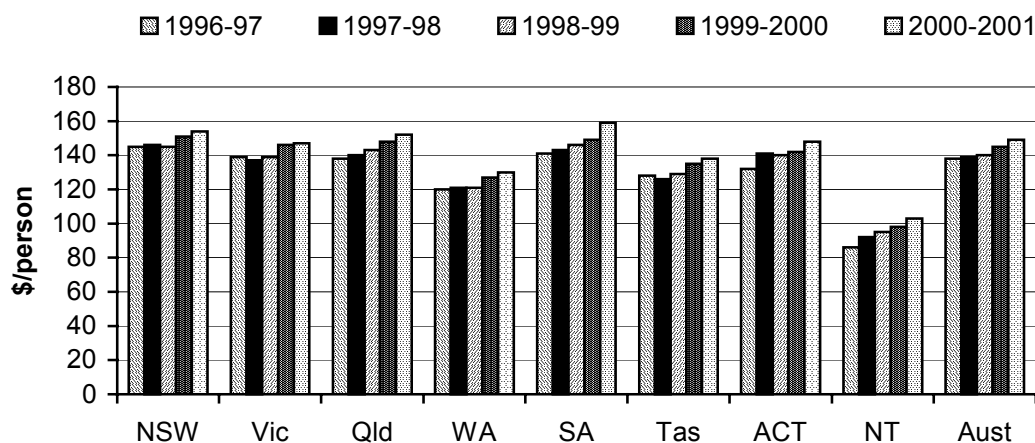11.5%

5.5%

0.1%[a]

17.2%

63.1%

2.7%

a Health insurance funds accounted for $5 million or just over 0.1 per cent of total GP funding in 1998-99.
Source: Britt et al. (2000), AIHW (unpublished); table 6A.2.

The cost to the Commonwealth Government of general practice was approximately $2.9 billion in 2000-01 including non-Medicare funding and expenditure by DVA. This was equivalent to expenditure of $149 per person in 2000-01 (figure 6.2). These data are not comparable with data in the 2001 Report due to the inclusion of non-Medicare funding and expenditure by DVA.

[2] Local medical officers are GPs who are registered with the DVA to provide services to veterans and other DVA beneficiaries.

Figure 6.2   **Commonwealth Government real expenditure per person on general practice (2000-01 dollars)**

Source: DHAC (unpublished); table 6A.3.

State and Territory governments also provide funding for general practice in a number of areas. Generally, this funding is provided indirectly through mechanisms such as support services for GPs. Expenditure on rural programs for general practice is one of the main areas funded by States and Territories — examples include assistance with housing and relocation, education programs and assistance with employment for spouses and family members of doctors in rural areas. Other types of expenditure are directed towards providing education and support services in areas such as diabetes management, smoking cessation, sexual health, and mental health and counselling. Funding in these areas is often provided through grants to bodies such as secretariats that help coordinate and deliver these support services to GPs and the community.

Some examples of State and Territory programs include:[3]

- the ACT Government funds a GP senior lecturer position for the Clinical School ($150 000);

- the Tasmanian Government provides incentives for GP recruitment and retention to local government ($80 000);

- the Queensland Government provides funding to the Divisions of General Practice to enable access to emergency Home and Community Care services;

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[3] Estimates of funding are included for some programs. These estimates are not comparable across jurisdictions.

- the Victorian Government assists with recruiting overseas doctors for rural hospitals and paying costs associated with immigration, registration with medical boards and retraining;

- the WA Government funds initiatives to enhance communication, including supporting positions for the Secretariat to WA GP Advisory Council, and provision by the State Development Coordinator of information and education on communicable disease and sexual health; and

- the SA Government funds initiatives to develop systems in hospitals to ensure that smoking cessation becomes an integral part of practice and that all interventions are linked to GPs and other health care providers ($162 000).
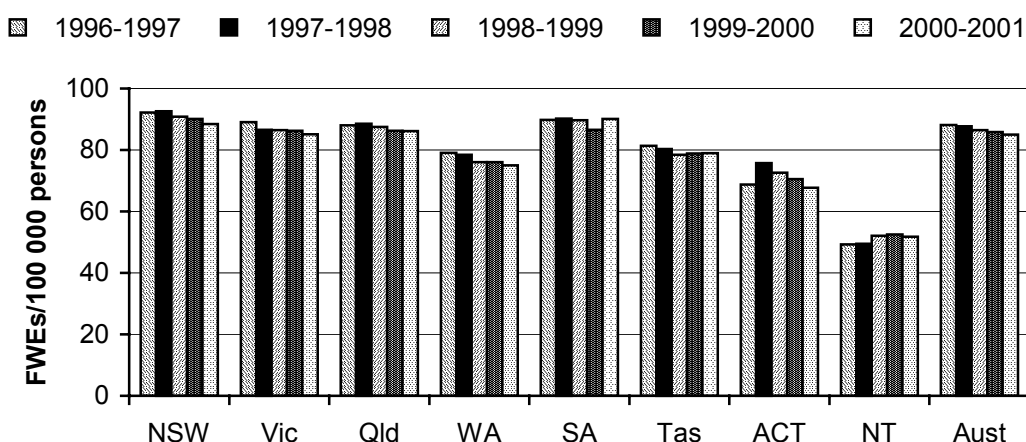
Size and scope of sector

In 2000-01, there were 24 249 GPs and OMPs billing Medicare in Australia (125.1 per 100 000 people), a decline from 132.4 per 100 000 in 1996-97 (table 6A.4). Care needs to be taken in interpreting these head counts of doctors billing Medicare as not all OMPs are GPs. In addition, some GPs provide only small numbers of services attracting Medicare benefits and there are substantial numbers of doctors working in medicine part time.

Figure 6.3 presents the distribution of full time workload equivalent (FWE) GPs across jurisdictions. An FWE is calculated for each doctor by dividing the doctor's Medicare billing (schedule fee value of claims processed by the Health Insurance Commission during the reference period) by the mean billing of full time doctors. The data exclude services provided by medical practitioners working with the Royal Flying Doctor Service, some doctors working in Aboriginal Medical Services, and salaried doctors working in public hospitals without the right of private practice. In addition, the data are based on doctors' Medicare claims, which for some doctors, particularly in rural areas, represent only part of their workload. GPs in rural or remote areas spend more of their time working in local hospitals than those in metropolitan centres.

Australia-wide in 2000-01, there were 85.0 full time workload equivalent GPs per 100 000 people. The highest number per 100 000 was in SA (90.1) and the lowest was in the NT (51.8) (figure 6.3).

Figure 6.3 **GPs (full time workload equivalent) per 100 000 persons**

Legend: ▨ 1996-1997 ■ 1997-1998 ▨ 1998-1999 ▣ 1999-2000 ▢ 2000-2001
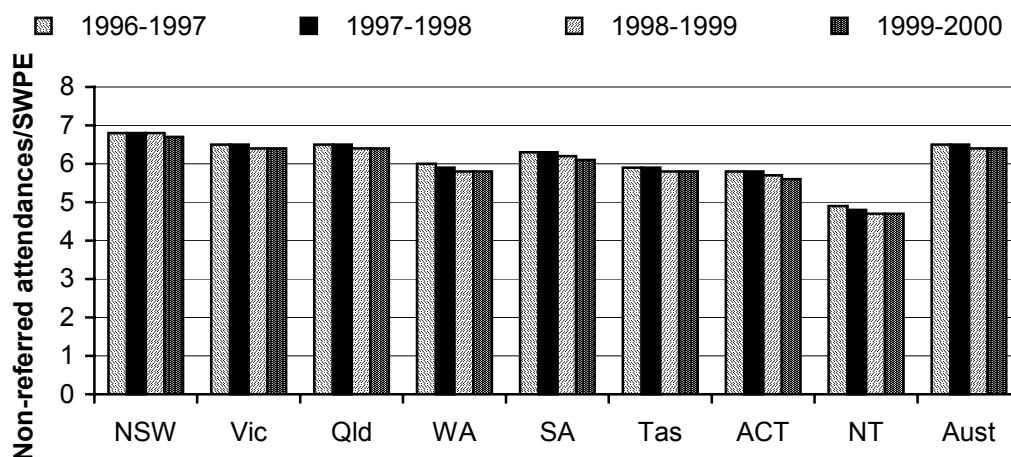
Source: DHAC (unpublished); table 6A.4.

Consulting a GP was the second most common health related action of Australians in 1995 (the last year for which data are available), after use of medications (ABS 1997). Consultations per standardised whole patient equivalent (SWPE)[4] in 1999-2000 were highest in NSW (6.7) and lowest in the NT (4.7) (figure 6.4), and were generally highest in capital cities and lowest in remote areas — declining with population density (table 6A.6).

The most common reasons given by patients for visiting a GP in 2000-01 are outlined in table 6.2. In the BEACH study, participating GPs were asked to record at least one, and up to three, patient reasons for the encounter (Britt *et al.* 2001). Reasons for encounter reflect the patient's demand for care and can indicate service use patterns.

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[4] 'Standardised whole patient equivalent' is an indicator of practice workload based on the number of patients seen. The SWPE value for a jurisdiction is the sum of the fractions of care provided by doctors in that jurisdiction to their patients, weighted for the age and sex of each patient in accordance with national ratios.

Figure 6.4   Non-referred attendances, per standardised whole patient equivalent[a]

a 'Standardised whole patient equivalent' (SWPE) is an indicator of practice workload based on the number of patients seen. The SWPE value for a jurisdiction is the sum of the fractions of care provided by doctors in that jurisdiction to their patients, weighted for the age and sex of each patient in accordance with national ratios.

Source: DHAC (unpublished); table 6A.5.

Table 6.2   Most frequent patient reasons for encounter, 2000-01[a]

Patient reason for encounter	No. of encounters	% of total reasons for encounter	Rate per 100 encounters[b]	95% LCL[c]	95% UCL[c]
Check-up (all)[d]	13 121	8.8	13.2	12.5	13.9
Prescription (all)[d]	9 161	6.1	9.2	8.7	9.8
Cough	6 900	4.6	7.0	6.5	7.4
Immunisation/ vaccination (all)[d]	4 369	2.9	4.4	4.0	4.8
Throat symptom/complaint	4 007	2.7	4.0	3.7	4.4
Back complaint[d]	3 726	2.5	3.8	3.5	4.0
Test results[d]	4 219	2.8	4.3	3.9	4.6
URTI	2 593	1.7	2.6	2.2	3.0
Rash[d]	2 896	1.9	2.9	2.8	3.1
Fever	2 241	1.5	2.3	1.9	2.6
Subtotal	53 231	35.5	–	–	–
Total reasons for encounters	**149 962**	**100.0**	**151.0**	**149.2**	**152.8**

a An encounter is any professional interchange between a patient and a GP. **b** Figures do not total 100 as more than one reason for the encounter can be recorded at each encounter. **c** UCL = upper confidence level; LCL = lower confidence level. **d** Multiple primary care classification codes. – Zero or close to zero.

Source: Britt et al. (2001); table 6A.7.

More than one problem is often managed by a GP at a single encounter. Problems managed reflect the GP's understanding of the health problem presented by the

patient. The top 10 health problems managed by GPs are listed in table 6.3. Hypertension was the most common problem managed in 2000-01, followed by upper respiratory tract infection (a cold) (Britt *et al.* 2001).

Table 6.3 **Top 10 health problems managed, 2000-01[a]**

Problem managed	No. of problems	% of total problems	Rate per 100 encounters[b]	95% LCL[c]	95% UCL[c]
Hypertension[d]	8 560	6.0	8.6	8.2	9.1
Upper respiratory tract infection, acute	6 861	4.8	6.9	6.5	7.4
Immunisation/vaccination (all)[d]	4 543	3.2	4.6	4.2	5.0
Depression[d]	3 624	2.5	3.7	3.4	3.9
Lipid disorder	2 889	2.0	2.9	2.7	3.1
Asthma	2 821	2.0	2.8	2.7	3.0
Diabetes[d]	2 785	1.9	2.8	2.6	3.0
Acute bronchitis/bronchiolitis	2 724	1.9	2.7	2.5	3.0
Back complaint[d]	2 568	1.8	2.6	2.4	2.8
Osteoarthritis[d]	2 499	1.7	2.5	2.3	2.7
Subtotal	39 874	27.8	..	..	..
Total problems	**143 528**	**100.0**	**144.5**	**142.8**	**146.3**

a Problems managed reflect the GP's understanding of the health problem presented by the patient. **b** Figures do not total 100 per cent as more than one problem can be managed at each encounter. **c** UCL= upper confidence level; LCL= lower confidence level. **d** Multiple primary care classification codes. **..** Not applicable.

Source: Britt et al (2001); table 6A.8.

The most common form of patient management undertaken by GPs in 2000-01 was prescription, supply and advice on medications (108.2 per 100 encounters). Clinical and procedural treatments were also significant (49.4 per 100 encounters) while referrals to specialists only accounted for 7.4 patient management activities per 100 encounters (table 6.4).

Table 6.4   **Summary of patient management activities, 2000-01[a]**

Management type	Number	Rate per 100 encounters	95% LCL[b]	95% UCL[b]
Medications	107 400	108.2	105.7	110.6
Prescribed	91 647	92.3	89.9	94.7
Advised over the counter	8 906	9.0	8.1	9.8
GP supplied	6 847	6.9	5.7	8.1
Other treatments	49 072	49.4	47.1	51.7
Clinical	36 978	37.2	35.1	39.3
Procedural	12 094	12.2	11.6	12.8
Referrals	10 366	10.4	10.0	10.8
Emergency department	92	0.1	0.0	0.4
Hospital	499	0.5	0.3	0.7
Specialist	7 326	7.4	7.1	7.7
Allied health	2 313	2.3	2.1	2.5
Referral NOS[c]	137	0.1	0	0.6
Pathology	29 225	29.4	28.2	30.7
Imaging	8 227	8.3	7.9	8.7
Total management activities	**204 290**	**205.7**	..	..

[a] An encounter is any professional interchange between a patient and a GP. [b] UCL = upper confidence level; LCL = lower confidence level. [c] Not elsewhere specified. .. Not applicable.

Source: Britt et al (2001); table 6A.9.

6.2   Policy developments

General Practice Memorandum of Understanding

A General Practice Memorandum of Understanding (GPMoU) exists between the Commonwealth Government and the RACGP, the Rural Doctors Association of Australia and the Australian Divisions of General Practice. The GPMoU provides an agreement regarding increased Commonwealth Government funding for general practice and provides the mechanism for joint management of funding between the Government and the profession. This allows for the development of good clinical practice. The GPMoU runs from 1 July 1999 until 30 June 2002 and guarantees government outlays on general practice will increase by over 4 per cent a year in nominal terms over the life of the GPMoU. This increase is expected to improve the remuneration of GPs, which has fallen relative to other areas of the profession, and to allow a focus on increased payments for improved outcomes of care.

The 2001-02 Budget included measures to increase funding for general practice by around $750 million over the next four years. This includes additional funding for Medicare and the PIP to reward GPs for spending more time with their patients and improve health outcomes in mental health, cervical cancer, diabetes and asthma. Funding was also included to assist practices in employing nurses in areas of workforce shortage. Most of these measures are being implemented in 2001-02 (the final year of the agreement) and will result in additional money being spent under the umbrella of the GPMoU.

Workforce

Limits on the numbers of doctors training for general practice and those trained overseas have resulted in the GP workforce remaining relatively static over recent years. Different programs in each jurisdiction are addressing the rural doctor shortage and a new system to deliver general practice vocational training through regional programs has been established.

New training opportunities have been introduced to support non-vocationally registered rural doctors to achieve registration which will increase the level of patient fee rebates. This is expected to improve the financial viability of rural practice. Specific programs are addressing access issues to female rural GPs by encouraging short term rural placements. An additional program of workforce support for rural GPs is being delivered by rural Divisions of General Practice.

Quality

Diabetes and asthma are health priority areas where new chronic disease initiatives encourage the use of a more systematic approach to illness care through computerised general practice disease registers, recall and reminder systems, links with other providers, and use of audit and feedback linked to regional quality improvement programs. Preliminary work done through the National Divisions Diabetes Program has provided a base for models of care.

There are also a number of Quality Use of Medicines initiatives that focus on improving patient health outcomes, while reducing growth in the Pharmaceutical Benefits Scheme (PBS), in particular the educational activities of the National Prescribing Service (NPS) and the Enhanced Divisional Quality Use of Medicines Program.

The NPS uses evidence based strategies to educate and inform prescribers about high quality and appropriate prescribing. It focuses on providing independent information about medicines to prescribers. Coverage of NPS is being expanded so

that it can extend its support to all Divisions of General Practice and work more systematically with specialists, pharmacists and hospital doctors.

The aim of the Enhanced Divisional Quality Use of Medicines Program is to enhance current Quality Use of Medicines activity at the General Practice Divisional level to maintain or improve standards of patient care, while reducing the rate of growth of prescribing costs in specified areas. The three drug groups targeted under the program are antibiotics, peptic ulcer drugs and cardiovascular drugs. The program is delivered through Divisions of General Practice in partnership with the NPS whose activities it complements.

Practice Incentives Program

The PIP directly rewards general practices for parts of their service that are important to providing quality care, but which are not covered by fee-for-service arrangements. The PIP targets information management/information technology, after hours care, rural and remote practice, teaching of medical students, and also includes incentives for quality prescribing and for providing care plans and case conferences.

Practices joining the PIP after 1 January 2001 are required to register for accreditation against the RACGP's Standards for General Practice and to be fully accredited within 12 months of joining. Practices participating in the PIP prior to 1 January 2001 will need to be fully accredited by 1 January 2002.

6.3 Framework of performance indicators

The performance indicator framework is based on the shared government objectives for general practice, which reflect the primary care role of GPs (box 6.1).

Box 6.1   **Objectives for general practice**

General practice aims to promote the health of Australians by:

- acting as a main point of entry to the health care system;
- providing health care which promotes changes in lifestyle behaviour and prevents possible illness;
- coordinating and integrating health care services on behalf of clients; and
- providing continuity of care

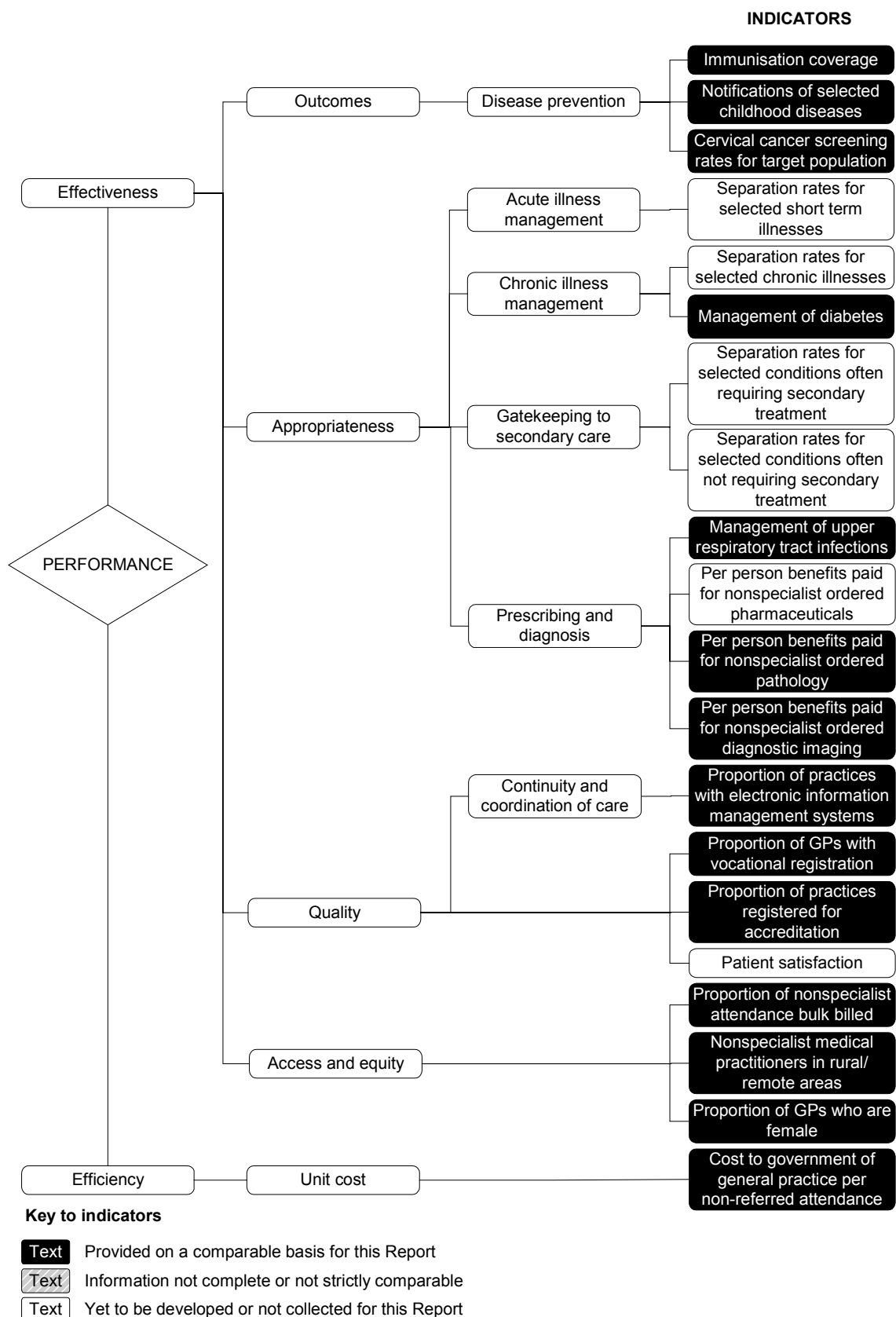in an equitable and efficient manner.

The performance indicator framework aims to inform analysis of the effectiveness and efficiency of policies targeted at general practice services (figure 6.5). The framework is evolving over time as better indicators are developed and as the focus and objectives for general practice change.

Significant changes have been made to the performance indicator framework this year. The Review has commenced reporting two new appropriateness indicators which examine prescription rates of oral antibiotics for upper respiratory tract infections and management of diabetes by GPs. The new indicators are discussed in more detail in section 6.4.

The Review has ceased reporting prescribing rates for anxiolytics and antidepressants. It is not clear whether recent increases in prescribing rates represent an over-reliance on the use of prescription drugs — a benchmark has yet to be defined — or whether awareness by GPs of the availability of a range of prescription pharmaceuticals has increased, allowing a range of conditions to be treated. While it appears that mental illness is under-diagnosed, evidence suggests that some GPs write out prescriptions prematurely for patients presenting with symptoms of mental illness, without first working through other possibilities set out in clinical good practice guidelines. It is therefore not possible to anticipate the direction in which prescribing rates for antidepressants and anxiolytics would head under optimal adherence to consensus guidelines if mental illness was better diagnosed.

The Review has also ceased reporting separation rates for myringotomy and tonsillectomy as an indicator of GP gatekeeping to secondary care. Decisions about these procedures are generally governed by specialists and can depend on socioeconomic characteristics of particular areas. There is no evidence that separation rates would alter significantly if GPs in Australia changed their current practices. Separation rates for these procedures are reported in chapter 5 (Public hospitals) as indicators of appropriateness because of their frequency and elective nature.

Figure 6.5   **Performance indicators for general practice**

INDICATORS

Effectiveness	Outcomes	Disease prevention	Immunisation coverage
			Notifications of selected childhood diseases
			Cervical cancer screening rates for target population
	Appropriateness	Acute illness management	Separation rates for selected short term illnesses
		Chronic illness management	Separation rates for selected chronic illnesses
			Management of diabetes
		Gatekeeping to secondary care	Separation rates for selected conditions often requiring secondary treatment
			Separation rates for selected conditions often not requiring secondary treatment
		Prescribing and diagnosis	Management of upper respiratory tract infections
			Per person benefits paid for nonspecialist ordered pharmaceuticals
			Per person benefits paid for nonspecialist ordered pathology
			Per person benefits paid for nonspecialist ordered diagnostic imaging
	Quality	Continuity and coordination of care	Proportion of practices with electronic information management systems
			Proportion of GPs with vocational registration
			Proportion of practices registered for accreditation
			Patient satisfaction
	Access and equity		Proportion of nonspecialist attendance bulk billed
			Nonspecialist medical practitioners in rural/ remote areas
			Proportion of GPs who are female
Efficiency	Unit cost		Cost to government of general practice per non-referred attendance

PERFORMANCE

Key to indicators

Text	Provided on a comparable basis for this Report
Text	Information not complete or not strictly comparable
Text	Yet to be developed or not collected for this Report

6.4   Key performance indicator results

Different delivery contexts, locations and types of client may affect the effectiveness and efficiency of health services. Appendix A contains detailed statistics and short profiles on each State and Territory, which may assist in interpreting the performance indicators presented in this chapter.

Outcomes

Disease prevention — immunisation

The level of immunisation coverage has been included in the framework because GPs are encouraged to achieve high immunisation coverage levels under the General Practice Immunisation Incentives Scheme. The Scheme provides incentives for the immunisation of children in the 0–6 age group. General Practitioners see 93 per cent of children in this age group seven times a year on average (DHAC 1999). The aim is to have full immunisation of 90 per cent of all children attending 90 per cent of all general practices (DHAC 1999). The introduction of the Scheme, however, has had different impacts in different States and Territories depending on the structure of service provision (table 6.5).

Child immunisation services are delivered by many providers. The Australian Childhood Immunisation Register (ACIR) records suggest that since data were first collected in 1996, GPs have played a major role in immunising children under seven years of age in NSW, Queensland, WA, SA and Tasmania. In Victoria, local governments share the main immunisation provider role with GPs. Territory governments are the main providers in the ACT and in the NT through community health centres (table 6.5).[5]

Around 91.5 per cent of Australian children turning 12 months of age by 31 March 2001 were assessed as fully immunised[6] (figure 6.6). Tasmania had the highest proportion (93.8 per cent) and the NT had the lowest (88.7 per cent). The NT Childhood Immunisation Database estimate of vaccination coverage for children aged 12 months on 31 March 2000 was 89 per cent. The Medicare-generated ACIR

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[5] Approximately 40 per cent of children aged 0–6 years in the NT are Indigenous, living in remote communities that are not serviced by a GP. Since GPs provide immunisation services to only a small proportion of children in the NT, immunisation coverage rates are a weak indicator of GP performance in the NT.

[6] Full immunisation at 12 months includes immunisation against diptheria, tetanus, whooping cough, polio and *Haemophilus influenzae* type b.

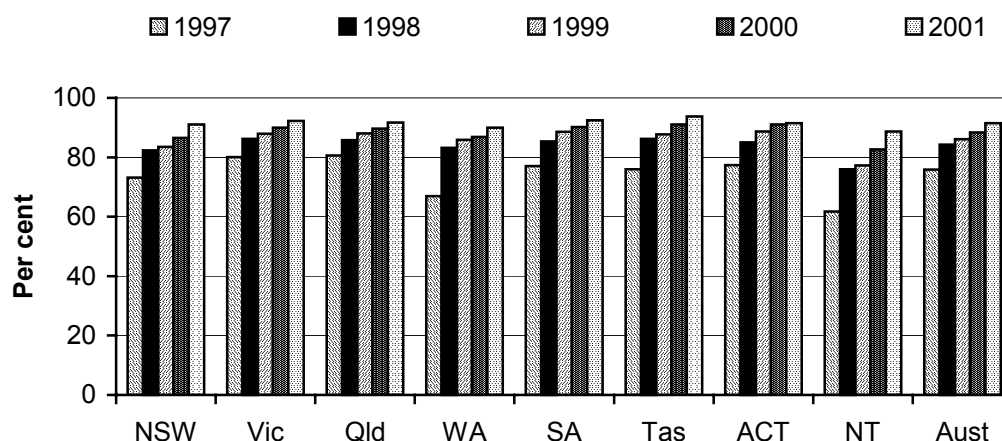records of immunisation for children in the NT do not match NT immunisation records.

Table 6.5   **Valid vaccinations supplied to children under seven years of age by the type and State/Territory of the immunising provider, 2001, (per cent)[a]**

Provider	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
GPs	82.4	49.7	83.2	62.4	69.5	84.6	38.6	2.9	69.4
Council	7.0	49.3	8.0	8.5	18.1	14.8	–	–	18.9
State and Territory health department	–	–	–	5.2	0.1	0.2	46.6	–	1.3
Flying doctor service	–	–	0.4	–	0.2	–	–	–	0.1
Public hospital	3.2	0.2	3.1	5.2	5.4	0.2	1.2	1.8	2.6
Private hospital	0.2	–	–	–	–	–	–	1.0	0.1
Aboriginal health service/worker	0.5	0.1	0.5	0.5	0.3	–	0.2	6.0	0.4
Aboriginal health worker	–	–	0.5	–	0.1	–	–	0.2	0.1
Community health centre	6.7	0.7	4.4	18.3	6.4	0.3	13.4	88.2	7.0
Community nurse	–	–	–	–	–	–	–	–	–
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

a At 30 June 2001. Data collected since 1 January 1996. – Zero or close to zero.

Source: DHAC (unpublished); table 6A.10.

Figure 6.6   **Proportion of children aged 12 to 15 months who were fully immunised (per cent)[a, b, c]**

a Coverage measured at 30 June for children turning 12 months of age by 31 March. **b** The Australian Childhood Immunisation Register (ACIR) includes all children under seven years of age who are registered with Medicare. By the age of 12 months, over 98 per cent of Australian children have been registered with Medicare (NCIRS 2000). **c** There may be some under-reporting by providers, and as a result, vaccine coverage estimates calculated using ACIR data should be considered minimum estimates (NCIRS 2000).

Source: DHAC (unpublished); table 6A.11.

Around 86.6 per cent of children turning 24 months of age by 31 March 2001 were assessed as being fully immunised[7] (figure 6.7). Tasmania recorded the highest proportion (90.3 per cent), while NSW recorded the lowest (84.3 per cent).

Figure 6.7 **Proportion of children aged 24 to 27 months who were fully immunised (per cent)[a, b, c]**

[a]Coverage measured at 30 June. [b] The Australian Childhood Immunisation Register includes all children under seven years of age who are registered with Medicare. By the age of 12 months, over 98 per cent of Australian children have been registered with Medicare (NCIRS 2000). [c] There may be some under-reporting by providers, and as a result, vaccine coverage estimates calculated using ACIR data should be considered minimum estimates (NCIRS 2000).

Source: DHAC (unpublished); table 6A.12.

Disease prevention — notifications of selected childhood diseases

Notification rates for selected childhood vaccine preventable diseases (measles, pertussis [whooping cough] and *Haemophilus influenzae* type b) are used as an indicator because the activities of GPs can influence the rate of these diseases through immunisation. The debilitating effects of these diseases can be long term or even life threatening. The complications from measles, for example, can include pneumonia, which occurs in one in 25 cases. As part of the Immunise Australia Seven Point Plan, Australia has embarked on a strategy to eliminate measles. The indicator for the rate of notifications for selected childhood diseases reflects the number of notifications for 0–14 year olds per 1000 people in that age group.

The Immunise Australia Seven Point Plan, organised outside general practice and implemented by the immunisation sector, including GPs, has resulted in a large fall

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[7] Full immunisation at 24 months includes immunisation against diptheria, tetanus, whooping cough, polio, *Haemophilus influenzae* type b and measles, mumps and rubella.

in the number of notifications of measles. In 2001, the notification rate for measles for 0–14 year olds was 1.2 per 100 000 children in that age group. This represents a large decline from the high levels of the early to mid-1990s (table 6A.14). In 2001, notification rates for 0–14 year olds for measles were highest in Tasmania (3.0) and lowest at zero in the NT, SA and the ACT (figure 6.8).

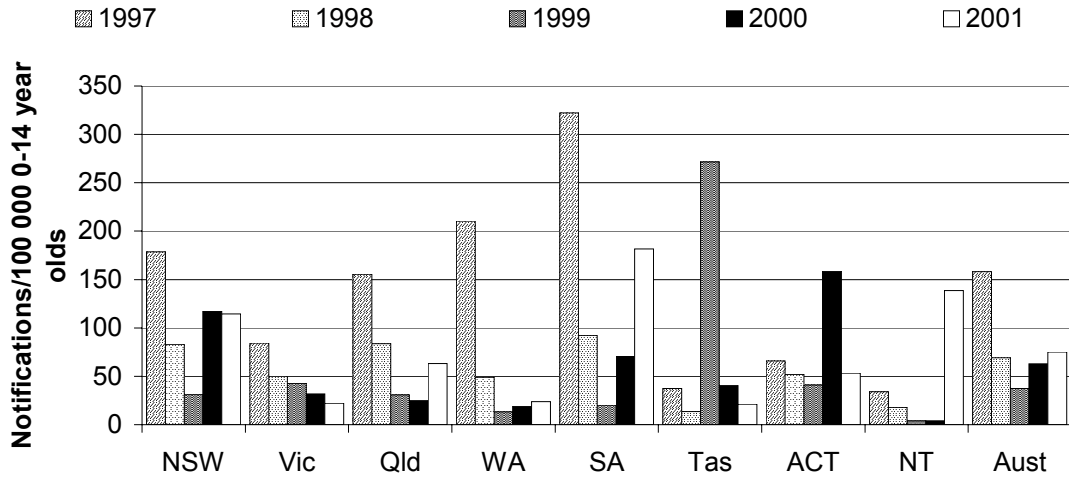Figure 6.8   **Notification rates for measles among persons aged 0–14 years**[a]

[a] Notifications for 2001 are to August only and have been adjusted to annual rates for comparison.

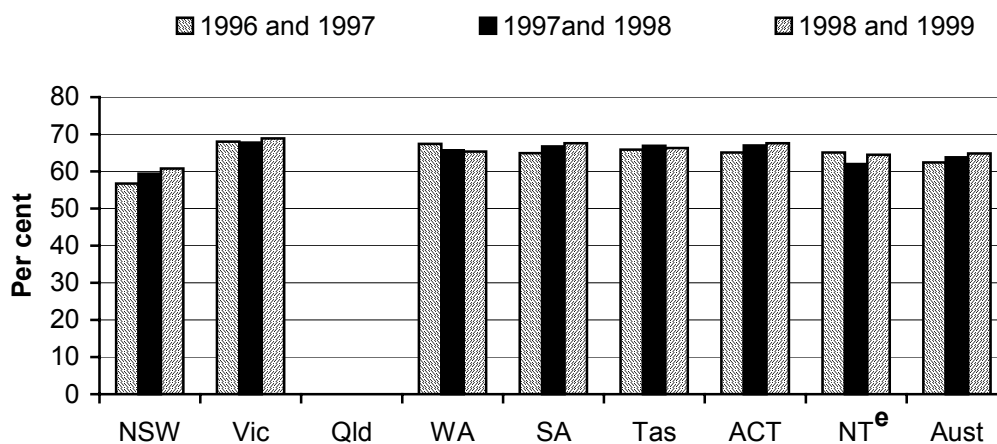*Source*: DHAC (unpublished); table 6A.14.

A severe outbreak of pertussis (whooping cough) occurred in 1997 (figure 6.9) within the identified pattern of pertussis epidemics in three-year cycles. The notification rate for Australia in that year was 158.0 notifications for 0–14 year olds per 100 000 persons aged 0–14 years. As a result of the increased incidence of pertussis, the then Commonwealth Department of Health and Family Services decided to encourage the immunisation of all children against the disease. In 1999, the notification rate for 0–14 year olds in Australia was 37.3, increasing to 75.2 in 2001 (figure 6.9). The highest rate in 2001 was in SA, with 181.7 notifications for 0–14 year olds per 100 000 children aged 0–14 years, and the lowest was in Tasmania, with a notification rate of 21.3.

Figure 6.9   **Notification rates for pertussis (whooping cough) among persons aged 0–14 years[a]**

a Notifications for 2001 are to August only and have been adjusted to annual rates for comparison.

Source: DHAC (unpublished); table 6A.15.

In recent years, notification rates for *Haemophilus influenzae* type b have remained relatively low in all jurisdictions except the NT (figure 6.10). In 2001, the notification rate Australia-wide was 0.5 (per 100 000 children aged 0–14 years). The NT had 5.9 notifications, while Tasmania and the ACT had zero notifications.

Figure 6.10   **Notification rates for *Haemophilus influenzae* type b among persons aged 0–14 years[a]**

a Notifications for 2001 are to August only and have been adjusted to annual rates for comparison.

Source: DHAC (unpublished); table 6A.13.

Disease prevention — cervical screening

The third outcome indicator for primary care services provided by GPs is the screening rate for cervical cancer. Like child immunisation, cervical cancer screening tests (that is, Pap smears) are offered by a range of health care providers under the National Cervical Cancer Screening Program — GPs, gynaecologists, family planning clinics and hospital outpatient clinics. Care needs to be taken in interpreting the results as the level of participation in the program reflects the activities of all health care providers — not only GPs.

General Practioners play an important role in relation to cervical screening as they are often the first point of contact with the health system and are well placed to provide referrals and support where necessary. Medicare data indicates that around 80 per cent of smears are taken by GPs, however, the difficulty is reporting the exact number of smears taken by GPs in relation to other health professionals, such as gynaecologists or staff in women's health centres. Some smears are sent to public laboratories which do not provide data to the Health Insurance Commission and consequently, the number of smears taken by GPs may be underestimated in the short term. Where this is an issue, procedures are being put in place to ensure that data from public laboratories are aligned with Medicare data reporting requirements. It is anticipated that accurate data on the level of GP involvement in cervical screening may be available for future reports.

The National Cervical Cancer Screening Program is targeted at women aged 20–69 years. The screening interval is two years. Data for the 1999 and 2000 period will not be available until 2002. Figure 6.11 shows that in the 1998 and 1999 screening period, participation rates by women aged 20–69 years were highest in Victoria (68.9 per cent) and lowest in NSW (60.8 per cent). The Queensland Health Pap Smear Register did not start operating until February 1999, so no data are available for that State.

Figure 6.11   **Participation rates of women aged 20–69 years in cervical screening programs (per cent)[a, b, c, d]**

a Rates for Australia have been calculated excluding Queensland. b The Queensland Health Pap Smear Register did not start operating until February 1999. c The ACT register only records women with an ACT address. d All data are adjusted to remove women who have had a hysterectomy. e Participation rates differ from those published by the NT Pap Smear Register because the NT Register excludes Aboriginal women from the denominator, whereas all women are included in the denominator in this figure.

Source: AIHW analysis of State and Territory Cervical Cytology Registry data; table 6A.16.

Appropriateness

Chronic illness management — management of diabetes

General Practitioners can play a significant role in the management of diseases such as diabetes, by diagnosing their patients and enrolling them in structured care, and by following best practice condition management guidelines developed by the profession, including where early intervention is warranted. Over time, good management should start to noticeably affect patients' secondary care requirements.

Indicators for the management of diabetes are presented for the first time this year. Three new indicators are reported:

- the proportion of adults with diabetes who have been diagnosed and placed on a diabetes register;

- the proportion of registered people with diabetes who have had a glycaemic control assessment and the proportion who tested as seriously at risk of future complications; and

- hospital separations for Type 2 diabetes and complications associated with diabetes.

Proportion of adults with diabetes who have been diagnosed and placed on a diabetes register

Survey work conducted during the Australian Diabetes, Obesity and Lifestyle Study (AusDiab) (Dunstan *et al.* 2001) enables good estimates to be made of the prevalence of diabetes at a number of levels, including State and Territory and national.[8] The level of diagnosis among adults with Type 2 diabetes and their formal placement within an appropriate management regime, is an indicator of the uptake of systematic efforts that have proved effective overseas.

The National Divisions Diabetes Program Data Collation Project was carried out in 1999 and had several components. One of these was to collate the quality of care and health outcomes data from Divisions of General Practice with a diabetes program that had a register operating for at least 12 months. Divisions participated on a voluntary basis: 15 of 38 in NSW; two of 31 in Victoria; two of 20 in Queensland; three of 14 in SA; three of 15 in WA; and one of 3 in Tasmania and the ACT. The duration of programs in Divisions (not necessarily registers) varied from one to eight years, averaging 3.7 years with a median of three years.

The proportion of adults with diabetes on a register in each jurisdiction is outlined in table 6.6. It should be noted that these data are based on a small and not necessarily representative number of Divisions of General Practice who voluntarily took part in a national data collection. Based on these data, Queensland had the highest proportion (7.5 per cent of adults with diabetes) and Victoria the lowest (2.3 per cent). The estimated number of people with diabetes in a Division has been calculated by applying 1999 Australian Bureau of Statistics population estimates in age groupings to the 1996 Census data by Division (to estimate the number of people in each age group in each Division) and then applying the AusDiab age-specific prevalence rates.

National evidence based guidelines are being prepared in Australia for the prevention, detection and management of Type 2 Diabetes. These are being developed by a consortium consisting of representatives from the Australian Diabetes Society, Australian Centre for Diabetes Strategies and Diabetes Australia. The guidelines are being developed in accordance with the National Health and Medical Research Council process.

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[8] This study was not representative of Aboriginal and Torres Strait Islander people.

Proportion of registered people with diabetes who have had a glycaemic control assessment in the previous six months and proportion of these who fell into the category of seriously at risk of future complications

Where a patient has been diagnosed with Type 2 diabetes, accepted clinical guidelines suggest that GPs should regularly monitor a number of important elements, including glycaemic control, blood pressure, weight, foot status, lipids, microalbumin level and eye status. The RACGP/Diabetes Australia guidelines recommend assessment every three to six months for insulin-treated patients (Type 1, sometimes referred to as juvenile diabetes because of peak onset much earlier in life) and every six to 12 months for non-insulin-treated patients (Type 2, sometimes referred to as mature age onset diabetes), and a target of glycated haemoglobin (HbA1c) within 1 per cent of the upper limit of normal. Where levels are more than 2 per cent above the upper limit of normal, early intensive intervention is important.

The proportion of registered adults with Type 2 diabetes who had a glycaemic control assessment in the previous six months is reported as a performance indicator for GPs (table 6.6). Based on the available data, Queensland had the highest proportion with 72.6 per cent of adults with Type 2 diabetes and Tasmania had the lowest proportion with 25.5 per cent.

The proportion of those tested whose measured levels were above the point at which there is cause for alarm (2 per cent above the upper limit of normal[ULN]) is also reported as a performance indicator for GPs (table 6.6). The percentage was highest in Queensland (36.2 per cent) and lowest in WA (4.1 per cent). While the proportion of adults with Type 2 diabetes with levels in this range may initially increase reflecting the impact of risk factors on changing population cohorts, over time regular testing and good management by GPs should result in a decline in the proportion of people with diabetes in the category most at risk of complications.

Table 6.6   Management of diabetes by participating Divisions of General Practice[a, b, c]

	Unit	NSW	Vic	Qld	WA	SA	Tas	Aust
Estimated population aged 25 yrs and over with diabetes	no.	154 178	23 243	13 205	24 936	21 283	12 936	249 781
Percentage of estimated adult people with diabetes who are on a register (30 June 1999)	%	5.7	2.3	7.5	4.7	5.8	2.9	5.2
Percentage of registered patients having a glycaemic control test in 6 month period (1999)	%	45.0	54.7	72.6	43.3	57.7	25.5	48.0
Number of patients where result of HbA1c measurement known	no.	3 854	293	583	344	716	95	5 885
Percentage of patients with HbA1c measured with result >2% of ULN	%	21.7	22.2	36.2	4.1	17.5	7.4	21.4

a To preserve confidentiality, the ACT results have been combined with those of NSW. **b** The results reported for glycaemic control are for the period 1 January 1999 to 30 June 1999. Glycated haemoglobin (HbA1c) levels are reported as being within a certain percentage from the upper limit of normal (ULN). The reagents and units of measurement used are different in different laboratories. The normal range is established by a set of standard samples which are tested by the lab using its particular reagents and equipment. For this reason, every laboratory reports a normal reference range when it reports an HbA1c result. Labs may also report whether a given result is within 1 per cent of the ULN range for their particular testing method or 'good', 'poor' etc. Evidence from the United Kingdom Prospective Diabetes Study has clearly demonstrated that keeping HbA1c within 1 per cent of normal (ie ULN) reduces the risk of developing complications of diabetes. Where levels are more than 2 per cent above the ULN, early intensive intervention is important. **c** Divisions participated on a voluntary basis: 15 of 38 in NSW; two of 31 in Victoria; two of 20 in Queensland; three of 14 in SA; three of 15 in WA; and one of 3 in Tasmania and the ACT. The duration of programs in Divisions (not necessarily registers) varied from one to eight years, averaging 3.7 years with a median of three years.

Source: DHAC (unpublished); table 6A.19.

Hospital separation rates where the principal diagnosis is Type 2 diabetes mellitus, by jurisdiction, standardised for age and sex

The United Kingdom Prospective Diabetes Study provides an evidence base for the management of raised blood pressure and hyperglycaemia to reduce the complications of Type 2 diabetes. Early detection of diabetes and effective management of blood pressure in particular have been shown to be effective in reducing the microvascular and macrovascular complications of diabetes. As primary care providers, GPs are well placed to both detect diabetes early and to provide care which can assist in the prevention or slowing of the development of the complications of diabetes.
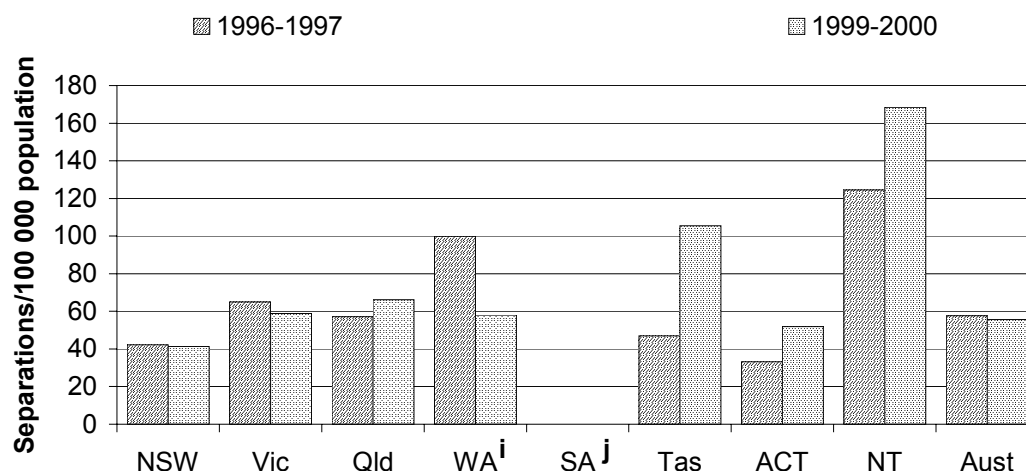
The total hospital separation rates for admissions where Type 2 diabetes mellitus is the principal diagnosis are reported separately by jurisdiction after standardisation of populations for age and sex (figure 6.12). In 1999-2000, separation rates for Type 2 diabetes mellitus were highest in the NT (168.4 per 100 000 people) and lowest in NSW (41.3 per 100 000 people). South Australian data have not been published because there have been unexpected increases in hospital separation rates in SA for Type 2 diabetes and associated complications between 1996-1997 and 1999-2000 which are thought to be due to changes in clinical practice (however, this is still being investigated).

Separation rates for complications of diabetes are presented in figures 6.13 and 6.14. In 1999-2000, separation rates for renal complications were highest in the NT (9.9 per 100 000 people) and lowest in the ACT (1.3 per 100 000 people). Separation rates for ophthalmic complications were highest in Queensland (3.4 per 100 000 people) and lowest in Tasmania (0.8 per 100 000 people). South Australian data have not been published because there have been unexpected increases in hospital separation rates in SA for Type 2 diabetes and associated complications between 1996-1997 and 1999-2000 which are thought to be due to changes in clinical practice (however, this is still being investigated).

While hospital separation rates for conditions closely related to Type 2 diabetes may initially increase as a result of the ageing of the population and the effects of the presence of higher risk levels in recent decades, an extensive program of diagnosis and management by GPs may eventually lead to a gradual reversal of current trends and then continuing reductions in rates of hospitalisation with these specific diagnoses.
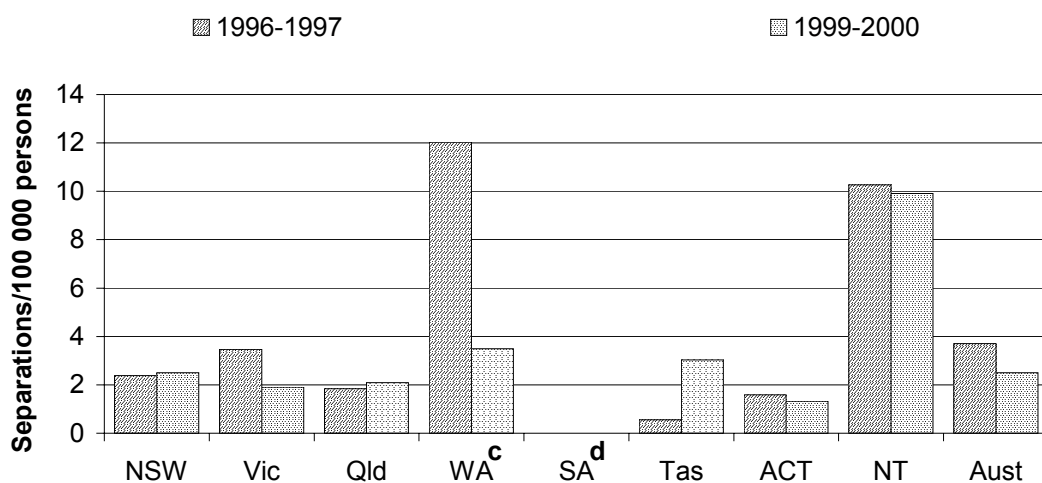
Figure 6.12 **Separation rates for Type 2 diabetes**[a, b, c, d, e, f, g, h]

a Separation rates are age-adjusted to the Australian national population at 30 June 1991 using direct standardisation. **b** Crude separation rates for each jurisdiction were calculated using ABS supplied age–sex specific resident populations within the jurisdiction in each year for the denominators. **c** Separation counts represent cases with a principal diagnosis of non-insulin-dependent diabetes mellitus (NIDDM) (ICD-9-CM v13 codes 250.x0 and 250.x2, x=0-9; ICD-10-AM 1st ed codes E11.00 to E11.91) on the 1996-97 and 1999-2000 National Morbidity Data Sets. The use of hospital separations means that there is not a true one-to-one correspondence between numerator and denominator units, as would normally apply in a standardisation exercise. Age-standardisation will tend to exaggerate the effect of multiple episodes for individual patients, particularly where they occur in small populations. In the NIDDM context, multiple admissions for one patient are typically associated with hyperbaric oxygen therapy and peritoneal/haemo dialysis. Although same-day admissions for dialysis are not normally coded with a principal diagnosis of NIDDM, the data contain a significant number in several jurisdictions. The results for small jurisdictions reflect both this type of distortion and unreliable results based on large relative changes arising from small numbers of separations. Results for specific complications of NIDDM should be interpreted with extreme caution. **d** Technically, standardised rates for renal and ophthalmic complications should be calculated using age–sex specific NIDDM populations, rather than total resident population. The age-standardisation performed does not account for increasing prevalence of NIDDM due to factors other than ageing of the population (for example lifestyle). **e** This analysis summarises only NIDDM-related cases treated as admitted patients, and coded with a principal diagnosis of NIDDM. These represent a small percentage of all separations coded with a diagnosis of NIDDM. **f** Treatment of NIDDM-related conditions is also provided in ambulatory settings. The availability of outpatient services may vary between jurisdictions, and over the time period of interest. **g** Morbidity data are coded under coding standards that may differ by time and jurisdiction. **h** ICD-9-CM codes for Type 2 diabetes mellitus (fourth digit 0/2) used in 1996-97 include diabetes mellitus unspecified as to NIDDM or insulin-dependent diabetes mellitus (IDDM). This could explain lower raw numbers of separations in that year compared to 1999-00. **i** 1996-97 WA separations contain 306 admissions coded with an incorrect diagnosis of 250.40 (renal complication) when the same patient was admitted for dialysis. **j** SA data have not been published because there have been unexpected increases in hospital separation rates in SA for Type 2 diabetes and associated complications between 1996-1997 and 1999-2000 which are thought to be due to changes in clinical practice (however, this is still being investigated).

Source: DHAC (unpublished); table 6A.18.

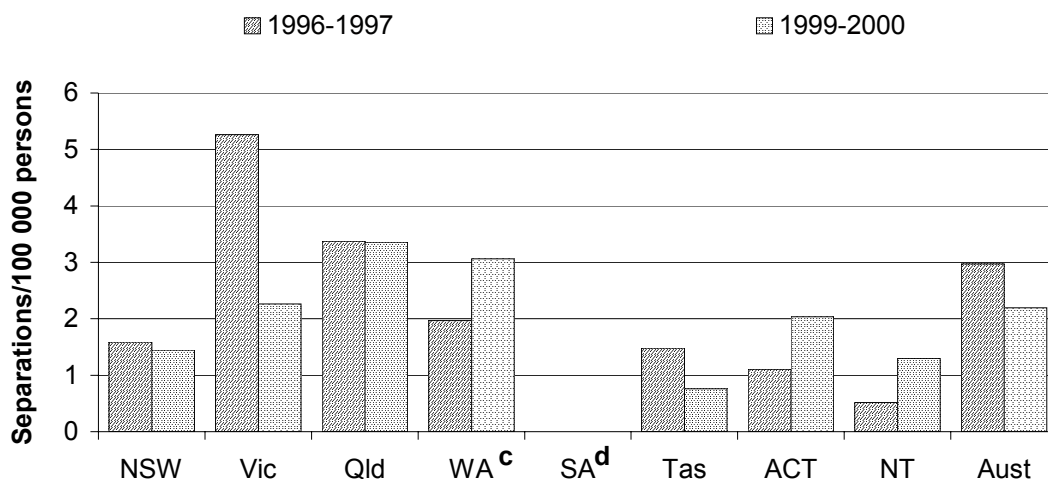Figure 6.13   **Separation rates for Type 2 diabetes – renal complications[a, b]**

a Separation rates are age-adjusted to the Australian national population at 30 June 1991 using direct standardisation. **b** ICD-9-CM codes for Type 2 diabetes mellitus (fourth digit 0/2) used in 1996-97 include diabetes mellitus unspecified as to NIDDM or IDDM. This could explain lower raw numbers of separations in that year compared to 1999-2000. **c** 1996-97 WA separations contain 306 admissions coded with an incorrect diagnosis of 250.40 (renal complication) when the same patient was admitted for dialysis. **d** SA data have not been published because there have been unexpected increases in hospital separation rates in SA for Type 2 diabetes and associated complications between 1996-1997 and 1999-2000 which are thought to be due to changes in clinical practice (however, this is still being investigated).

Source: DHAC (unpublished); table 6A.18.

Prescribing and diagnosis

Per person benefits paid by the Commonwealth Government for pathology tests and diagnostic imaging ordered by GPs are used as indicators of the appropriateness of prescribing and diagnosis. In addition, a new indicator of prescribing and diagnosis — prescription rates for oral antibiotics most commonly used in the treatment of upper respiratory tract infections — is reported for the first time in this Report.

Figure 6.14   **Separation rates for Type 2 diabetes – ophthalmic complications[a, b]**

□ 1996-1997   □ 1999-2000

a Separation rates are age-adjusted to the Australian national population at 30 June 1991 using direct standardisation.**b** ICD-9-CM codes for Type 2 diabetes mellitus (fourth digit 0/2) used in 1996-97 include diabetes mellitus unspecified as to NIDDM or IDDM. This could explain lower raw numbers of separations in that year compared to 1999-2000. **c** 1996-97 WA separations contain 306 admissions coded with an incorrect diagnosis of 250.40 (renal complication) when the same patient was admitted for dialysis. **d** SA data have not been published because there have been unexpected increases in hospital separation rates in SA for Type 2 diabetes and associated complications between 1996-1997 and 1999-2000 which are thought to be due to changes in clinical practice (however, this is still being investigated).

Source: DHAC (unpublished); table 6A.18.

Number of prescriptions for oral antibiotics most commonly used in the treatment of upper respiratory tract infections ordered by GPs, per 1000 persons with PBS concession cards
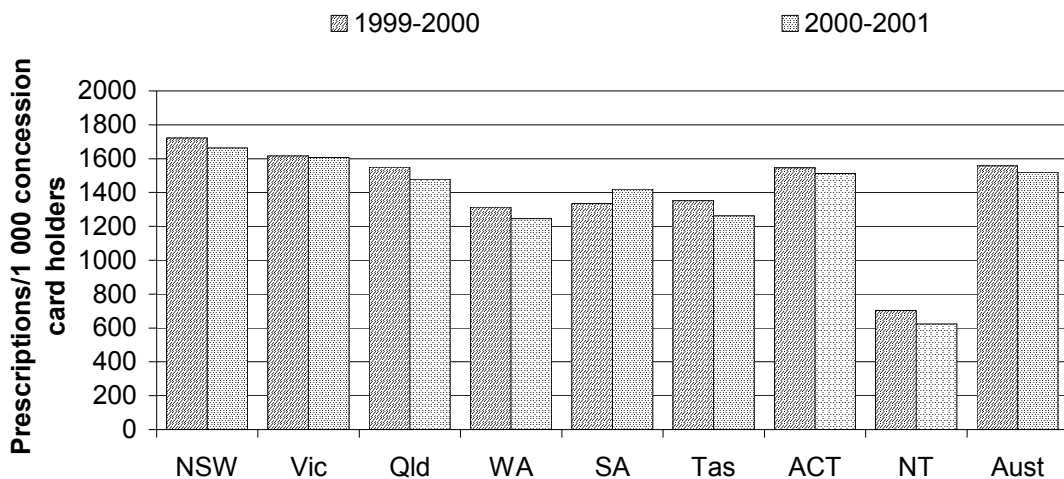
Antibiotics have no efficacy in the treatment of viral infections but are still frequently prescribed when they occur. Consequently, their prescription rates (overall, and particularly in relation to upper respiratory tract infections) are unambiguously too high. Reductions in the rate of prescription of those oral antibiotics most commonly used when patients present with upper respiratory tract infections are an indicator of more appropriate treatment being offered by GPs.

The cost at the pharmacy for most oral antibiotics used to treat upper respiratory tract infections is less than the maximum PBS co-payment. As there is therefore generally no Commonwealth subsidy for general patients, particulars of such patients obtaining prescriptions of this nature are not recorded by the Health Insurance Commission. With the data on oral antibiotics available for reporting essentially reflecting the requirements of concession cardholders, it is best to eliminate from the numerator any oral antibiotics supplied to general patients, and to use the total number of concession cardholders in the denominator.

Even though there are ongoing population ageing effects that may result in increases in the numbers of such beneficiaries and in the complexity of their pharmaceutical needs, if clinical guidelines for the treatment of upper respiratory tract infections were followed more closely by GPs, the trend for prescription of oral antibiotics should nevertheless be downwards.

Prescriptions per 1000 persons with PBS concession cards for 2000-01 were highest in NSW (1663.3) and lowest in the NT (623.2) (figure 6.15). The number of prescriptions decreased in all jurisdictions between 1999-2000 and 2000-01. Overall, prescriptions have fallen since 1996-97, when the rate was 1906.5 to 2000-01 when the rate was 1520.7 (table 6A.17).

Figure 6.15 **Prescription rates for oral antibiotics for upper respiratory tract infections**

Source: DHAC (unpublished); table 6A.17.

Pathology and diagnostic imaging

Per person benefits paid for GP-ordered pathology tests and diagnostic imaging are used to report on the prescribing and diagnosis patterns of GPs. Differences across jurisdictions in the levels of benefits paid for pathology tests and diagnostic imaging ordered by GPs may indicate inappropriate use of these services in diagnosis and treatment. While high levels of benefits may indicate over-reliance on these methods of treatment by GPs, it is not possible to determine what the appropriate levels might be. Reporting these data contributes to discussion of such issues.

Figure 6.16 provides contextual information on referrals by GPs per person for diagnostic imaging. For diagnostic imaging in 2000-01, NSW had the highest number of referrals per person (0.45) and the NT the lowest (0.21).

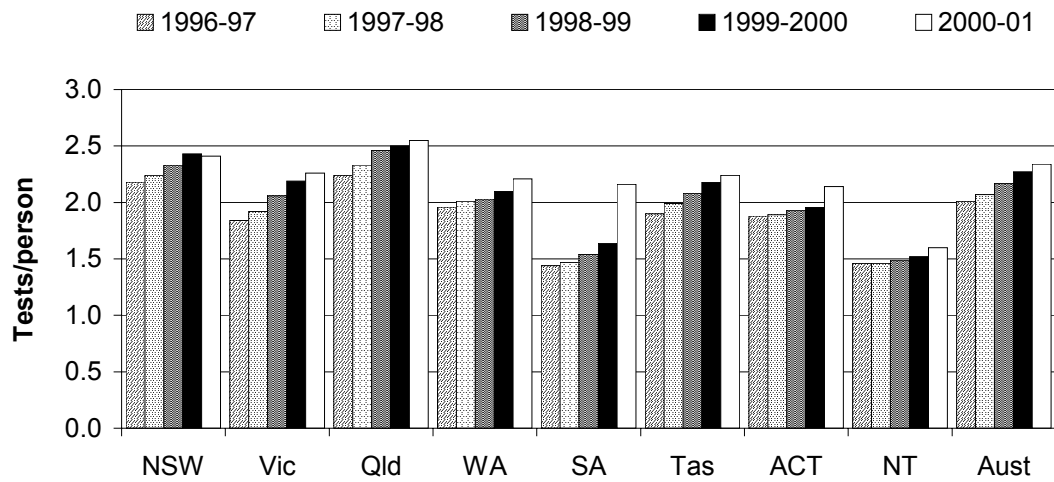Figure 6.16 **Referrals per person for diagnostic imaging**

Pathology data are presented for the number of tests ordered through Medicare rather than the number of referrals (figure 6.17).[9] Pathology services for rural and remote areas in some States (especially in SA) are ordered through State managed, but Commonwealth funded, health program grants — hence, the data may underestimate orders in some jurisdictions, although the amounts are relatively insignificant. For testing ordered through Medicare in 2000-01, Queensland had the highest rate of pathology tests (2.6 per person) and the NT the lowest (1.6 per person).

Overall in 2000-01, Commonwealth expenditure under Medicare on pathology tests was $40 per person and on imaging was $33 per person. Figure 6.18 shows that benefits paid per person for pathology tests in 2000-01 were highest in Queensland ($47 per person) and lowest in the NT ($29). Benefits paid per person for diagnostic imaging were highest in NSW ($37) and lowest in the NT ($16).
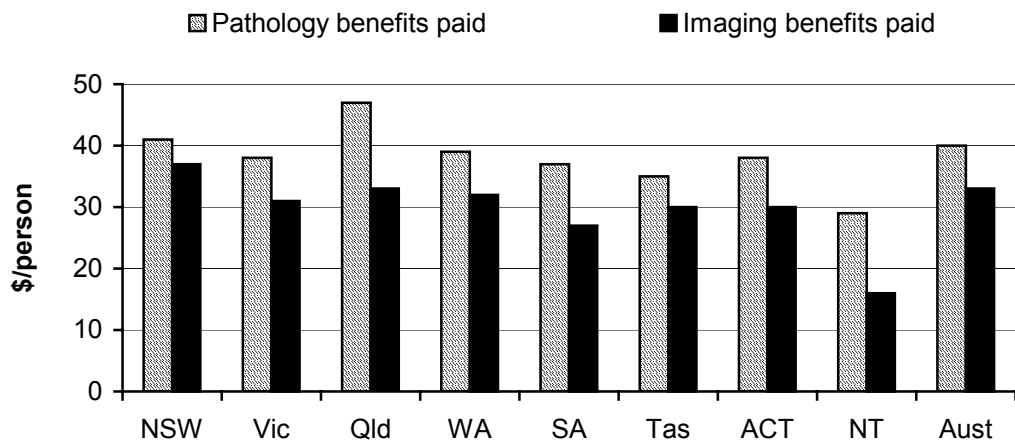
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[9] Up to three tests may be recorded following a pathology referral, whereas each imaging referral results in only one test.

Figure 6.17   **Pathology tests per person**

Source: DHAC (unpublished).

Figure 6.18   **Benefits paid per person for pathology tests and diagnostic imaging, 2000-01**

Source: DHAC (unpublished); tables 6A.20 and 6A.21.

Quality

Three indicators of the quality of health care delivered by GPs are: the proportion of practices with electronic information management systems; the proportion of full time workload equivalent GPs with vocational registration; and the proportion of practices that are registered for accreditation.

The proportion of practices with electronic information management systems

The proportion of practices with electronic information management systems is included as a quality indicator because information management/technology is recognised as a useful tool for helping GPs provide and maintain a high quality of care to patients. The use of clinical software and data interchange between GPs and organisations (such as Divisions of General Practice, pathology laboratories and hospitals) are examples (DHAC 2000b). Electronic information management systems also support directions and reforms in health care that focus on an integrated and evidence based health system. Under the PIP, a payment is made to those practices where the majority of GPs prescribe electronically and/or where the practice has either an Internet connection or an e-mail account.

The proportion of practices with electronic information management systems is an indicator of quality which helps to identify the capacity for efficient handling of patient information, including management of screening and other preventive health activities, reminder systems, patient education, record management, data collection and analysis and practice business management (DHAC 2000a). Data on practices with electronic information management systems are available from the PIP.
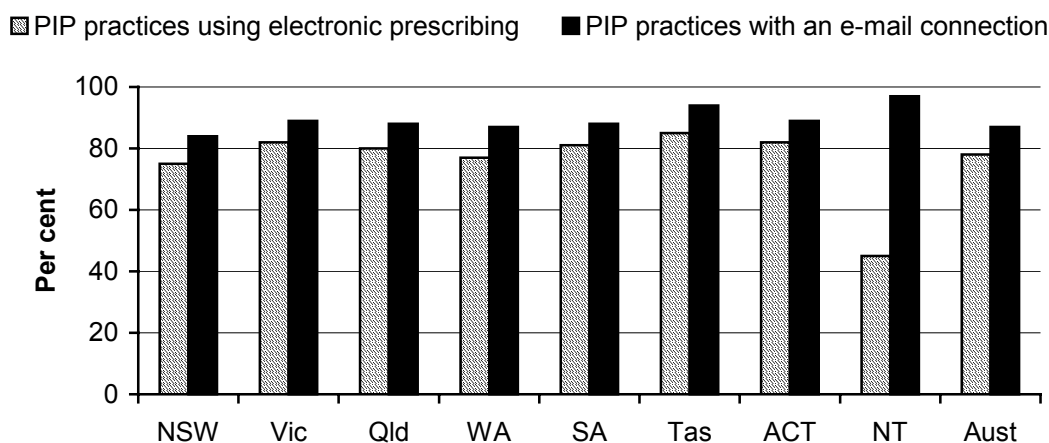
The PIP structures payments to practices based on patients' ongoing health care needs rather than service volumes, promoting activities such as use of electronic information management systems (including prescribing software), after hours care and teaching medical students. While the PIP does not include all practices in Australia, PIP practices covered around 80 per cent of Australian patients (measured as SWPEs) in May 2001 (DHAC unpublished).

The data indicated that the proportion of PIP practices nationally that used electronic prescribing systems in May 2001 was 78 per cent (an increase from 73 per cent in August 2000) (table 6A.22). The proportion of PIP practices with an Internet connection or an e-mail account was 87 per cent in May 2001 (an increase from 84 per cent in August 2000) (table 6A.22).

At May 2001, PIP practices in Divisions of General Practice in the NT were most likely to have an e-mail connection and least likely to use electronic prescribing software (97 per cent and 45 per cent respectively). Practice Incentive Program practices in Divisions of General Practice in Tasmania were most likely to use electronic prescribing software (85 per cent) while NSW was the least likely to have an Internet connection (84 per cent) (figure 6.19).

Figure 6.19 **Proportion of PIP practices using electronic prescribing software or with an e-mail connection, May 2001 (per cent)**
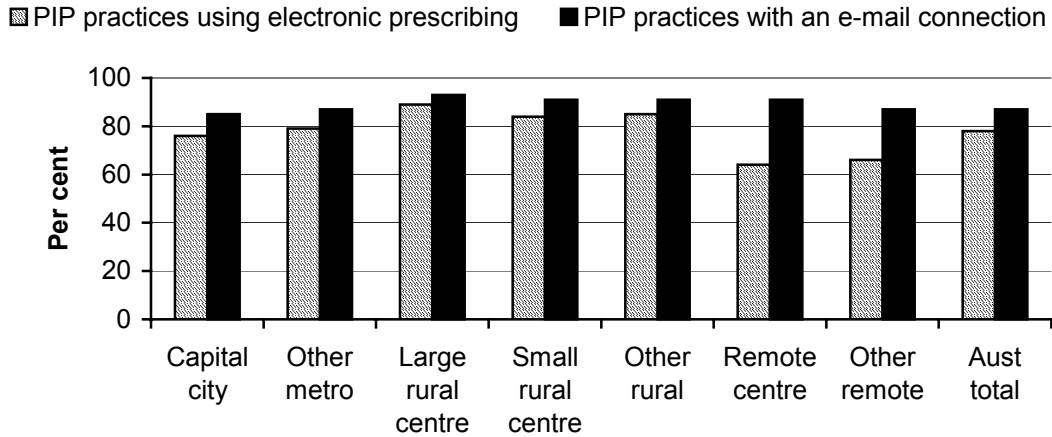

Source: DHAC (unpublished); table 6A.23.

In May 2001, PIP practices in large rural centres were more likely to use electronic prescribing and to be connected to the Internet than PIP practices in metropolitan areas or remote areas. PIP practices in remote areas were least likely to use electronic prescribing systems (figure 6.20). Remote practices in Indigenous communities in the NT have difficulty accessing the PIP, which affects coverage of these data.

Vocational registration

The proportion of full time workload equivalent GPs with vocational registration indicates the standard of appropriate training of GPs and their ability to deliver services of high quality. In 2000-01, the ACT had the highest proportion (96.5 per cent) and the NT had the lowest proportion (87.3 per cent) (figure 6.21). While this proportion has increased Australia-wide since 1996-97, this trend has not been experienced in all jurisdictions — most notably, in Tasmania. The proportion of GPs with vocational registration is lower in remote centres and other remote areas (table 6A.25).
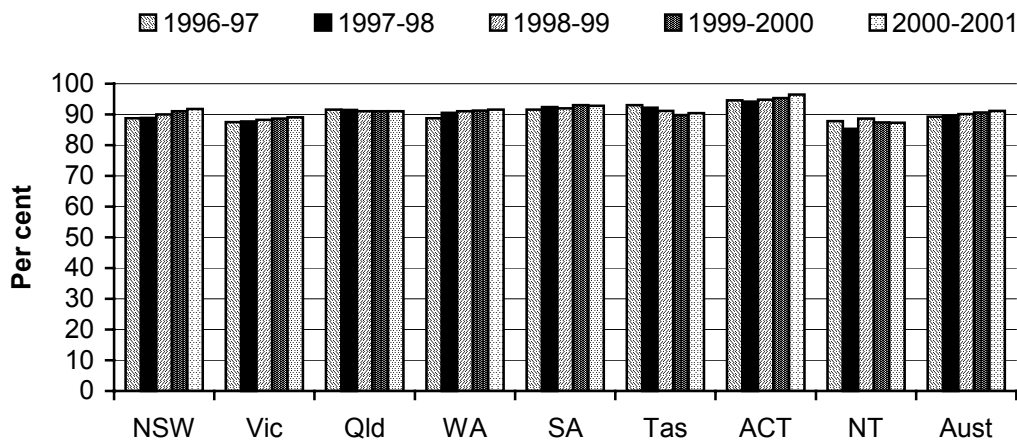
Figure 6.20   **Proportion of PIP practices using electronic prescribing software or with an e-mail connection, May 2001 (per cent)[a]**

□ PIP practices using electronic prescribing   ■ PIP practices with an e-mail connection

a Capital city = State and Territory capital city statistical divisions; Other metropolitan centre = one or more statistical subdivisions that have an urban centre with a population of 100 000 or more; Large rural centre = Statistical Local Areas (SLAs) where most of the population resides in urban centres with a population of 25 000 or more; small rural centre = SLAs in rural zones containing urban centres with populations between 10 000 and 24 999; other rural area = all remaining SLAs in the rural zone; remote centre = SLAs in the remote zone containing populations of 5 000 or more; other remote area = all remaining SLAs in the remote zone.

Source: DHAC (unpublished); table 6A.22.

Figure 6.21   **Proportion of GPs with vocational registration (full time workload equivalent)**

□ 1996-97   ■ 1997-98   ▨ 1998-99   ■ 1999-2000   □ 2000-2001
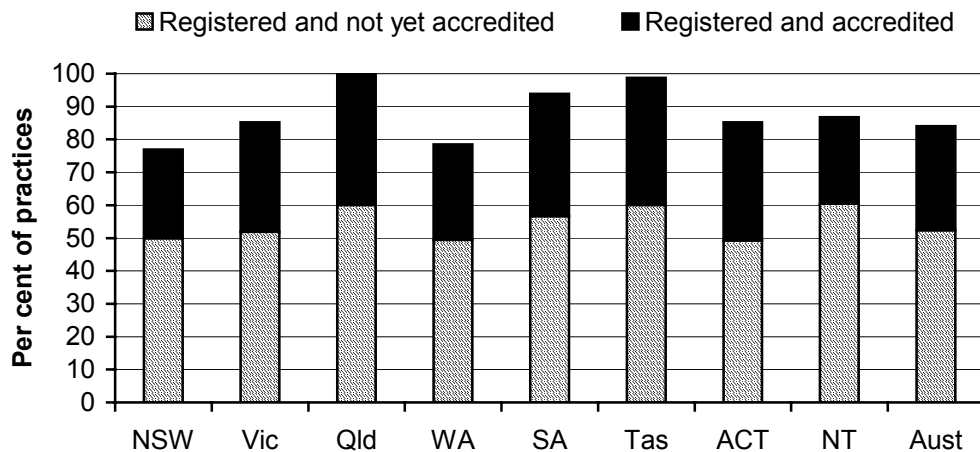
Source: DHAC (unpublished); table 6A.24.

Accreditation

Accreditation of practices is a systematic way to help identify quality in general practice and to provide GPs with a framework for improving their practices over time. There are two providers of general practice accreditation services: Australian General Practice Accreditation Limited (AGPAL), which oversees a peer review process to assess general practices against the RACGP Standards for General Practices and General Practice Australia. The latter is a for-profit private company and details of the scope of its activities are not available publicly. Australian General Practice Accreditation Limited data indicate that at 29 October 2001, 5003 practices throughout Australia (84 per cent of all practices) were registered for accreditation with AGPAL. This compares with nearly 65.2 per cent in August 2000 (table 6A.26). Queensland had the highest proportion of practices registered for accreditation (99.8 per cent) and NSW had the lowest (76.9 per cent) (figure 6.22).

Figure 6.22 **Proportion of practices registered for accreditation with AGPAL, October 2001 (per cent)**

Source: AGPAL (2001); table 6A.26.

Access and equity

Three indicators are used to measure access and equity in GP service delivery: the proportion of total non-specialist non-referred attendances that are bulk billed; the number of full time workload equivalent GPs in rural/remote areas; and the proportion of full time workload equivalent GPs who are female.
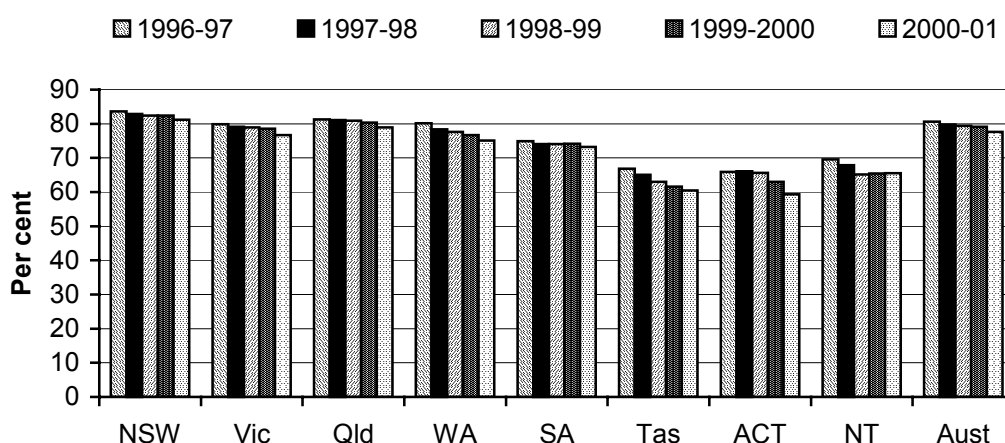
Non-referred attendances that are bulk billed

The proportion of total non-referred attendances that are bulk billed indicates the affordability of GP services. In general practice, patients are either bulk billed for the medical services provided to them and make no out-of-pocket contribution because the practice bills Medicare direct and receives the schedule fee rebate as full payment for the service; pay for the medical service in full and submit their receipt to Medicare for reimbursement to the extent of the schedule fee rebate; or patients pay a patient contribution and sign an authorisation allowing the doctor to submit a claim for payment by cheque for the scheduled fee rebate amount. A high proportion of bulk billed services indicates a greater level of affordability.

Visits to GPs are classed as non-referred attendances under Medicare and these are further disaggregated into services provided by vocationally registered GPs and those provided by OMPs who are not vocationally registered. In 2000-01, NSW had the highest proportion of attendances that were bulk billed (81.2 per cent), while the ACT had the lowest (59.3 per cent). The proportion of attendances that were bulk billed has declined in all states since 1996-97. Australia-wide, it has declined from 80.6 per cent in 1996-97 to 77.6 per cent in 2000-01 (figure 6.23). Bulk billing rates are generally lower in rural and remote areas than in capital cities or other metropolitan centres (table 6A.28).

Figure 6.23 **Non-referred attendances that were bulk billed as a proportion of all non-referred attendances (per cent)**

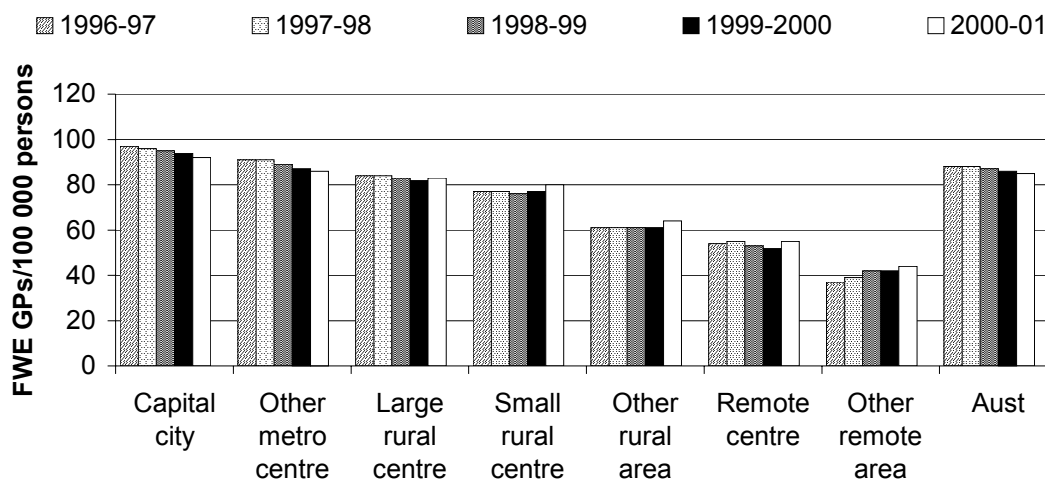*Source*: DHAC (unpublished); table 6A.27.

Full time workload equivalent GPs in rural/remote areas

Another important access issue is the ability of people in nonmetropolitan areas to access primary health care services provided by GPs. Commonwealth, State and Territory governments provide incentives for the recruitment and retention of GPs in rural and remote areas.

Many rural GPs provide a wide range of services in their own practices and in the public hospital system, including consultations, anaesthetics, obstetrics, psychiatric triage, emergency medicine, and relatively complex trauma procedures and operations. The comparatively low number of rural GPs per person means that they are often stretched in responding to their community's physical and mental health care needs (figure 6.24).

There were 85 FWE GPs per 100 000 people in Australia in 2000-01 — 92 per 100 000 in capital cities; 55 per 100 000 in remote centres; and 44 in other remote areas (figure 6.24).

Figure 6.24   **Full time work load equivalent GPs per 100 000 people by region[a]**

[a] Capital city = State and Territory capital city statistical divisions; Other metropolitan centre = one or more statistical subdivisions that have an urban centre with a population of 100 000 or more; Large rural centre = Statistical Local Areas (SLAs) where most of the population resides in urban centres with a population of 25 000 or more; small rural centre = SLAs in rural zones containing urban centres with populations between 10 000 and 24 999; other rural area = all remaining SLAs in the rural zone; remote centre = SLAs in the remote zone containing populations of 5 000 or more; other remote area = all remaining SLAs in the remote zone.
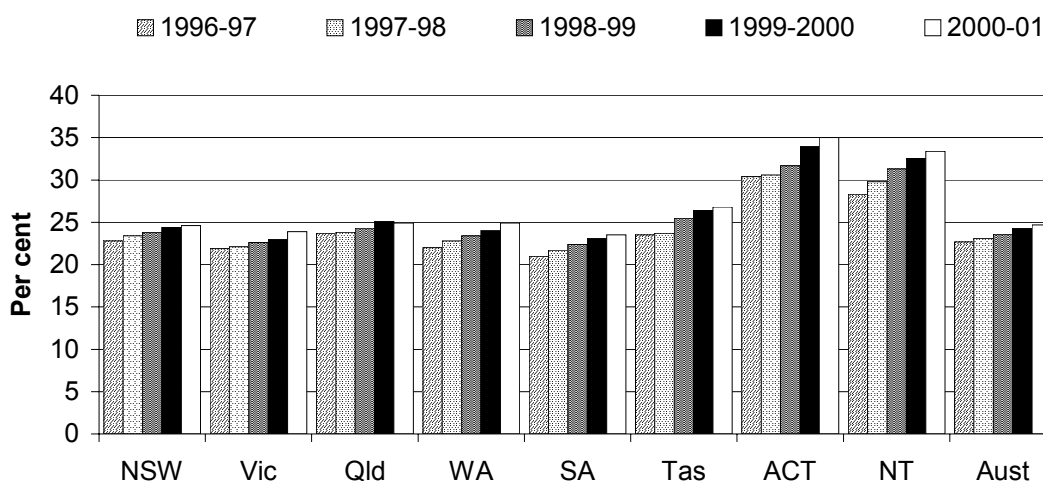
Source: DHAC (unpublished); table 6A.29.

Full time workload equivalent GPs who are female

The final access indicator relates to female FWE GPs as a proportion of all FWE GPs. As a measure of access, this recognises that some female patients may be uncomfortable discussing health matters with a male GP. The proportion of female GPs in 2000-01 was highest in the ACT (35.0 per cent) and lowest in SA (23.5 per cent) (figure 6.25). In 2000-01, there were 21 female FWE GPs per 100 000 population compared with a total of 85 male and female FWE GPs per 100 000 population. There were 24 249 GPs in 2000-01, with 8 382 of these being female. Approximately one-third of total GPs are females, yet they represent approximately one-quarter of the FWEs (table 6A.4).

Figure 6.25 **Female full time workload equivalents as a proportion of all FWE GPs**

Source: DHAC (unpublished); table 6A.30.

Efficiency

Unit cost

It is an objective of the Review to report comparable estimates of costs. Comparability is maximised when the full range of costs to government is counted on a comparable basis. Where the full costs cannot be counted, comparability is achieved by estimating costs on a consistent basis.

The cost to government of general practice per person is the only suggested efficiency indicator for GP services at this stage.[10] This indicator should be

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[10] Includes non-Medicare funding and expenditure by DVA.

interpreted with care, however, as a higher cost per person may reflect service substitution between primary care and hospital services or specialist services (the latter both potentially higher cost than primary care). Nationally, the annual cost per person in 2000-01 was $149 (figure 6.2). Commonwealth expenditure in that year was highest in SA ($159 per person) and lowest in the NT ($103 per person).

6.5   Future directions

The key challenge for the Steering Committee in future years is to improve the reporting of general practice services delivered to special needs groups, especially Indigenous people. In addition, as mentioned in the Health preface, it is a long term aim of the Review to develop a performance reporting framework that reflects choices about the combination of health services provided across the health service spectrum (primary, secondary and tertiary). The Coordinated Care Trials are an example of experiments in this area (box C.5). With a view to exploring this issue, the Review is undertaking work on primary, public and community health and on the interaction between health and other services, such as aged care.

Quality

No routinely collected data relating to patient satisfaction as an indicator of the quality of GP services are available at present. Definitional problems surrounding this indicator still exist. Nevertheless, patients' views of, or complaints about, medical practice could be used as a proxy measure of dissatisfaction.

Patient safety is another potentially important source of quality data for general practice. There are no Australia-wide data available on the prevalence of harmful incidents in general practice, although some work has been done on the types of incidents occurring (box 6.2). The Steering Committee is hopeful that progress will be made in both these areas to enable future reporting.

Chronic illness management

In February 2002, the PIP Care Planning Incentive, an annual payment, will be paid for the first time. This incentive is designed to encourage practices to provide care plans and case conferences for their patients with chronic and complex conditions. Future policy directions will reflect the May 2001 Commonwealth Budget announcements, which include incentives for better management of diabetes, mental health, asthma and cervical screening, as well as incentives for employing practice nurses in general practice.

| Box 6.2 | **Analysing potential harm in Australian general practice: an incident monitoring study** |

Between October 1993 and June 1995, a study was conducted in Australia to collect data on incidents of potential or actual harm to general practice patients and to evaluate the possible causes of these incidents.[11] A non-random sample of 324 GPs participated in the study and submitted 805 incident reports.

According to the results, 76 per cent of the incidents reported were considered preventable and 27 per cent had potential for severe harm. Major immediate consequences were reported in 17 per cent of incidents and 4 per cent resulted in the patient's death.

Incidents were grouped into pharmacological, non-pharmacological, diagnostic and equipment. Pharmacological incidents (such as use of inappropriate drugs, prescription error or administering error) were the most frequent and largely preventable (51 per 100 incidents). In contrast, diagnostic events (such as missed or delayed diagnosis) were less preventable and potentially more harmful (34 per 100 incidents). Of the 38 deaths reported, 30 involved a diagnostic incident.

Ineffective communication was a frequent contributing factor, with patients with mental health problems or poor or no English language skills particularly at risk.

While the study does not indicate the prevalence of incidents of potential or actual harm to general practice patients, it demonstrates some of the types of incidents occurring in Australian general practice. Limitations to the validity of the data include the non-random sample, limited recognition of incidents, selectivity in reporting incidents and the lack of an alternative perspective (such as the patient's view).

Source: Bhasale et al. (1998).

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[11] An incident was broadly defined as 'an unintended event, no matter how seemingly trivial or commonplace, that could have harmed or did harm a patient'. This criterion included near misses where the harm may have been averted but the potential for harm existed.

6.6 Definitions

Table 6.7 **Terms**

Term	Definition
Age standardised	Removing the effect of different age distributions (across jurisdictions or over time) when making comparisons, calculated by weighting the age-specific rates for each jurisdiction by the national age distribution.
Ambulatory services	Services provided by an acute care hospital to non-admitted patients.
Casemix adjustment	Adjustment of data on cases treated to account for the number and type of cases. Cases are sorted into diagnosis related groups that represent a class of patients with similar clinical conditions requiring similar hospital services.
Cervical screening rates for target population	Proportion of women screened against cervical cancer in the age group 20–69 years.
Community health services	Health services for individuals and groups delivered in a community setting, rather than in hospitals or private facilities.
Consultations	The different types of services provided by GPs.
Cost to government of general practice per non-referred attendance	Cost to the Commonwealth Government of total non-referred attendances by non-specialist medical practitioners per 1000 population.
Divisions of general practice	Geographically based networks of GPs who provide peer support and promote links with the local community and other health professionals. In 1998, there were 123 Divisions in Australia. The Divisions of General Practice Program (DGPP) evolved from the former Divisions and Projects Grants Program established in 1992. Priorities include providing infrastructure to link GPs with government and other health service providers and the recruitment and the retention of GPs in rural areas. Around $72 million was provided by the Commonwealth in 2000-01 under the DGPP.
Fully immunised at 12 months	A child that has completed three doses of Diptheria, Tetanus, Pertussis containing vaccine, three doses of Oral Polio Vaccine, three doses of HbOC (HibTITER) (or two doses of PRP-OMP (PedvaxHIB)) and one dose of measles, Mumps, Rubella.
Fully immunised at 24 months	A child that has received four doses of Diptheria, Tetanus, Pertussis containing vaccine, three doses of Oral Polio Vaccine, four doses of HbOC (HibTITER) (or three doses of PRP-OMP (PedvaxHIB)) and one dose of Measles, Mumps, Rubella.
Full time workload equivalents	A measure of medical practitioner supply based on claims processed by Medicare in a given period. The calculation is made by dividing the practitioner's Medicare billing by the mean billing of full time practitioners for that period. Full time equivalents (FTEs) are calculated in the same way as full time workload equivalents, however FTE's are capped at one for each practitioner.
General practice	The organisational structure in which one or more GPs provide and supervise health care for a 'population' of patients. This definition includes medical practitioners who work solely with one specific population such as women's health and Indigenous health.

(Continued on next page)

Table 6.7 (Continued)

Term	Definition
General practitioner	Medical practitioners who, for the purposes of Medicare, are vocationally registered under section 3F of the *Health Insurance Act 1973* (Cwlth*)*, hold fellowship of the Royal Australian College of General Practitioners or equivalent, hold a recognised training placement or are otherwise entitled to bill Group A1 Medicare Benefits Schedule items. Or other medical practitioners who have at least half of the schedule fee value of their Medicare billing from non-referred attendances, consisting solely or predominantly of Group A2 items.
Health management	An ongoing process beginning with initial client contact and including all actions relating to a client. Includes assessment/evaluation; education of the person, family or carer(s); diagnosis and treatment; and problems associated with adherence to treatment; and liaison with or referral to other agencies.
Immunisation coverage	A generic term indicating the proportion of a target population that is fully immunised with a particular vaccine or the specified vaccines from the Australian Standard Vaccination Schedule for that age group.
Management of diabetes	Proportion of adults with diabetes who have been diagnosed and placed on a register, proportion of adults with diabetes who have had a glycaemic control assessment in the previous six months and separation rates where the principal diagnosis is Type 2 diabetes.
Management of upper respiratory tract infections	Number of prescriptions for oral antibiotics most commonly used in the treatment of upper respiratory tract infections ordered by GPs, per 1 000 persons with Pharmaceutical Benefits Scheme concession cards.
Non-referred attendances	GP services, emergency attendances after hours, other prolonged attendances, group therapy and acupuncture. All attendances for specialist services are excluded as these must be 'referred' to receive Medicare reimbursement.
Non-specialist attendances that are bulk billed	Number of non-referred attendances that are bulk billed and provided by non-specialist medical practitioners divided by the total number of non-referred attendances.
Non-specialist medical practitioners by region	Number of full time workload equivalent non-specialist medical practitioners practising in capital cities, other metropolitan centres and rural/remote areas, divided by the total number of FWE non-specialists.
Notifications of selected childhood diseases	Number of cases of measles, pertussis and *Haemophilus influenzae* type b notified by State and Territory health authorities.
Other medical practitioner	A medical practitioner other than a recognised general practitioner who has at least half of the schedule fee value of his/her Medicare billing from non-referred attendance items consisting solely or predominantly of Group A2 items.

Table 6.7   (Continued)

Term	Definition
Other specialist	A medical practitioner not classified as general practitioner, other medical practitioner or recognised specialist who undertakes a majority of specialist work, but who is not formally recognised as a specialist by Medicare. Also includes specialists with recognition in one field but working in an unrelated field.
Pap smear	A procedure for the detection of cancer and pre-cancerous conditions of the female genital tract.
Per person benefits paid for GP-ordered pathology	Total benefits paid for pathology tests ordered by GPs divided by the population.
Per person benefits paid for GP-ordered diagnostic imaging	Total benefits paid for diagnostic imaging tests ordered by GPs divided by the population.
Primary care	The primary health and community care sector includes services which: • are the first point of contact for people; • have a particular focus on prevention of illness or early intervention; and/or • are intended to maintain people's independence and maximise their quality of life through care and support at home or in local community settings.
Prevalence	The proportion of the population suffering from a disorder at a given point in time (point prevalence) or during a given period (period prevalence).
Preventive interventions	Programs designed to decrease the incidence, prevalence and negative outcomes of disorders.
Proportion of GPs who are female	Number of all full time workload equivalent GPs who are female divided by the total number of full time workload equivalent GPs.
Proportion of GPs with vocational registration	Number of full time workload equivalent GPs who are vocationally registered divided by the total number of full time workload equivalent GPs.
Proportion of practices registered for accreditation	Number of practices that have registered for accreditation through Australian General Practice Accreditation Limited divided by the total number of practices in the Divisions of General Practice.
Proportion of practices with electronic information management systems	Number of practices with electronic prescribing and/or electronic connectivity, registered under the Practice Incentive Program, divided by the total number of practices registered.
Public health	The organised, social response to protect and promote health and to prevent illness, injury and disability. The starting point for identifying public health issues, problems and priorities, and for designing and implementing interventions, is the population as a whole or population subgroups. Public health is characterised by a focus on the health of the population (and particular at-risk groups) and complements clinical provision of health care services.

Table 6.7 (Continued)

Term	Definition
Psychiatrist	Medical practitioner with specialist training in psychiatry.
Reasons for encounter	The expressed demand of the patient for care as perceived and recorded by the GP.
Recognised general practitioner	A vocationally registered general practitioner, a Fellow of the Royal Australian College of General Practitioners or equivalent, or a general practice registrar in a training placement.
Recognised immunisation provider	A provider recognised by the Health Insurance Commission as a provider of immunisation to children.
Recognised specialist	A medical practitioner classified as a specialist on the Medicare database earning at least half of his/her income from relevant specialist items in the schedule, having regard to the practitioner's field of specialist recognition.
Screening	The performance of tests on apparently well people to detect a medical condition at an earlier stage than would otherwise be possible without the test.
Standardised separation rates for selected conditions often requiring secondary treatment	Age and sex standardised hospital separation rates for hip replacements, lens insertion and angioplasty.
Vocational registration	A formal training program that promotes quality in general practice. Vocationally registered GPs are registered separately from other non-specialist practitioners for Medicare purposes, and receive higher Medicare benefits for services.