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SYDNEY

# A decade of Australian general practice activity

2003–04 to 2012–13

Family Medicine Research Centre



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# **A decade of Australian general practice activity 2003–04 to 2012–13**

**BEACH**

**Bettering the Evaluation and Care of Health**

**Helena Britt, Graeme C Miller, Joan Henderson, Janice Charles, Lisa Valenti,  
Christopher Harrison, Clare Bayram, Timothy Chambers, Carmen Zhang,  
Ying Pan, Julie O'Halloran, Allan J Pollack**

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Any enquiries about or comments on this publication should be directed to:

The Family Medicine Research Centre  
Sydney School of Public Health, University of Sydney  
Level 7, 16–18 Wentworth Street, Parramatta NSW 2150  
Phone: +61 2 9845 8151; Fax: +61 2 9845 8155  
Email: gpstats@fmrc.org.au

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# Summary

Over the past decade, the population of Australia rose by about 3.1 million people, from 19.5 million in June 2002 to 22.6 million in June 2012. And the proportion of the population aged 65 years and over, increased from 12.7% to 14.2%. Population ageing is projected to have significant implications for health. As life expectancy improves, people are living longer with disease, so management of older patients with multiple chronic diseases will form an increasing part of the general practitioner's (GP's) workload.

GPs are usually the first port of call in the Australian healthcare system, generally receiving payment on a fee-for-service basis. There are no formal patient lists or registration. A universal medical insurance scheme (managed by Medicare Australia) covers all, or part of a person's costs for a GP visit.

In the April 2012–March 2013 year, about 85% of the Australian population claimed for at least one GP service from Medicare. Medicare paid rebates for about 126.8 million claimed general practice service items (excluding practice nurse items), an average of 5.59 GP visits per head of population, or 6.57 visits per person who visited at least once. A decade earlier, total Medicare claims for GP–patient encounters numbered 96.3 million, an average attendance rate of 4.3 per head of population. Administrative statistics provide information about frequencies and costs of visits claimed from GP services and some prescribed pharmaceuticals. BEACH (Bettering the Evaluation and Care of Health) gives us an understanding of the content of encounters and the services and treatments GPs provide.

BEACH is a continuous national study of general practice activity in which ever-changing random samples of about 1,000 general practitioners (GPs) participate in a year. Each participating GP records details of 100 consecutive GP–patient encounters with consenting patients. The BEACH program began in April 1998 and is now in its 16<sup>th</sup> year.

This book investigates results of each of 10 years of data to identify changes that occurred over the decade 2003–04 to 2012–13. The report is based on information from 9,772 participating GPs, almost one million GP–patient encounters.

## **The GP participants and their practices (Chapter 4)**

Between 2003–04 and 2012–13:

- reflecting changes in the age and sex distributions of the recognised GP workforce, females made up an increasing proportion of participants (33% in 2003–04 to 43% in 2012–13) as did the proportion aged 55 years and over (from 32.7% to 41.3%)
- average hours in direct patient care decreased – from 41 hours to 38 hours per week, resulting from a decreased proportion working 40 hours or more (from 47% to 33%)
- GPs who had gained their primary medical degree in Australia decreased from 73.6% to 66.2% over the 10 years, and there were significant changes in the geographic distribution of country of graduation among those trained overseas
- the proportion of GP participants holding Fellowship of the Royal Australian College of general practitioners increased from 33.5% to 55.7%
- the proportion of participants in solo practice stayed steady at about 10% and the proportion working in smaller practices (of 2–4 individual GPs) decreased. The proportion working in practices of ten or more individuals rose from 12% to 21%

- decreased proportions of GPs worked in practices that provide their own after-hours services (from 43% to 31%); and/or provided such care in cooperation with other practices (from 17% to 13%)
- the proportion of GPs with a computer available at their major practice increased from 95% to 98%. Since first measured in 2004–05, the proportion of GPs indicating they use a computer to some extent in their clinical activity increased from 89% to 96%.

### **The encounters (Chapter 5)**

Over the decade there was significant change in the average length of patient encounters claimable from the Medicare Benefits Scheme (MBS) or the Department of Veterans' Affairs (DVA), the mean each year sitting at around 15 minutes. However, the distribution of services claimed differed to some degree with the introduction of new MBS item numbers over the years.

### **The patients at encounters (Chapter 6)**

Between 2003–04 and 2012–13, the proportion of encounters with patients:

- aged 65 years and over took up an increasing proportion of encounters, rising significantly (from 27% to 30%)
- who were new to the practice significantly decreased (from 9.3% to 7.2%)
- holding a Commonwealth concession card was relatively stable
- holding a Repatriation Health Card decreased by over one-third, 3.9% to 2.3%

There was a significant increase in the overall rate of patient reasons for encounter (RFEs), from 150 per 100 encounters in 2003–04 to 155 per 100 encounters in 2012–13.

### **Problems managed at encounters (Chapter 7)**

GPs managed significantly more problems at encounters in 2012–13 (155 per 100 encounters) than in 2003–04 (146 per 100). This suggests there were 55 million more problems managed at GP–patient encounters in Australia in 2012–13 than in 2003–04.

In all years 2003–04 to 2012–13, the most frequently managed problems were hypertension, check-up, upper respiratory tract infection and immunisation/vaccination. Statistically significant increases occurred in management rates of general check-up, diabetes, gastro-oesophageal reflux disease, test results, vitamin/nutritional deficiency, administrative procedure, atrial fibrillation/flutter, pregnancy, abnormal test results and lacerations/cuts. Marginal increases in the management rates of depression and anxiety were also apparent.

The management rate of chronic conditions rose from 52 per 100 encounters in 2003–04, to 56 per 100 in 2012–13, this change accounting for about 40% of the increase in problems managed overall. This may be partly attributed to the changes in the age distribution of presenting patients. The most common chronic problems managed were non-gestational hypertension, non-gestational diabetes, depressive disorder, chronic arthritis and lipid disorders.

There were significant increases in management rates of non-gestational diabetes (equating to 2.1 million more contacts in 2012–13 than in 2003–04); depressive disorder (1.7 million more); atrial fibrillation/flutter (1.0 million more); hypothyroidism/myxoedema; shoulder syndrome; and unspecified chronic pain.

## Medications (Chapter 9)

Between 2003–04 and 2012–13, there was a significant decrease in total medication and prescribed medication rates per 100 problems managed. There were no significant changes in these as a rate per 100 encounters, suggesting that the GPs are now managing more problems at encounter but prescribing fewer medications in the management of these problems.

This hypothesis aligns with the increased attendance rate reported in the Background and with the increase in the number of medications given with five repeats (reported below).

There were significant increases in the GP prescribing rate per 100 problems managed for:

- agents acting on the renin-angiotensin system, psychoanaleptics, lipid modifying agents, and corticosteroids for systemic use
- individual medication types including: antibiotic cephalexin, the opioid oxycodone, the proton pump inhibitor esomeprazole, the lipid modifying agent rosuvastatin, and the non-steroid anti-inflammatory meloxicam.

There were significant decreases in the prescribing rate per 100 problems managed of:

- drugs for obstructive airway disease, anti-inflammatory and antirheumatic products, sex hormones and modulators of the genital system, calcium channel blockers, vaccines, diuretics, drugs for functional gastrointestinal disorders, and cardiac therapy
- some individual medication types including: the beta-blocking agent atenolol, the lipid modifying agent simvastatin, the cephalosporin antibiotic cefaclor monohydrate.

There was a significant decrease in the proportion of prescribed medications with no repeats, two, three or four repeats ordered. On the other hand, the proportion of prescriptions given with five repeats increased from 29.2% in 2003–04 to 36.6% in 2012–13. This is probably associated with the increased management rate of chronic problems.

There was little change in the rate of GP-supplied medications per 100 problems managed (6.4 per 100 in 2003–04 and 6.3 per 100 in 2012–13. The majority were vaccines.

The rate at which GPs advised over-the-counter medications remained relatively steady, the exception being a four-fold increase in the rate at which vitamin D3 (cholecalciferol) was advised per 100 encounters. This has occurred recently, in parallel with a three-fold increase in the management rate of nutritional/vitamin deficiency.

## Clinical treatments (Chapter 10)

While there was no statistically significant difference in the rate at which clinical treatments were provided in 2003–04 and 2012–13, there were major changes within the decade.

The clinical treatment rate was steady from 2003–04 to 2004–05. After the introduction of practice nurse item numbers in November 2004, in 2005–06 there was a sudden significant decrease in clinical treatments provided by the GP or the practice nurse at GP-patient encounters, from 27 to 20 per 100 problems. This was followed by a significant increase from 2006–07 to 2007–08 and then a slow (but steady) increase to 24 per 100 problems in 2012–13, the level provided 10 years earlier.

This pattern of change was reflected in some specific types of clinical treatments including: general advice and education; other administrative procedure/document and sick certificates; counselling/advice about nutrition/weight.

In contrast, there were significant decreases in the rate of counselling/advice about nutrition/weight, the drop occurring in 2006–07, with no reversion to earlier levels.

## **Procedures (Chapter 10)**

There was a significant increase in the rate at which procedures were performed from 2003–04 (10.1 per 100 problems) to 2012–13 (11.2 per 100 problems) (Table 10.3a). However, the most frequently recorded group, excision/removal tissue/biopsy/destruction/debridement/cauterisation, was provided at a similar rate throughout the decade.

The provision of local injections/infiltration (excluding those performed for immunisations) significantly increased over the decade, from 1.1 to 1.5 per 100 problems. When extrapolated, the change equates to provision of 1.4 million more local injections/infiltrations nationally in 2012–13 than in 2003–04. There were also significant increases in international normalised ratio (INR) tests, other preventive procedures/high-risk medication and PN/AHW check-ups, per 100 problems managed.

## **Practice nurse/Aboriginal health worker involvement (PN/AHW) (Chapter 10)**

PN/AHW involvement in care provided at, or in association with, GP-patient encounters, rose from 4.2% in 2005–06 to peak at 9.0% of encounters in 2009–10. It then significantly decreased to 7.4% in 2011–12, and remained steady in 2012–13. The proportion of problems managed with PN/AHW at GP encounters also increased significantly from 2.8% in 2005–06, to peak at 6.1% in 2009–10, with no significant change by 2012–13 (5.0%).

In 2005–06, GPs recorded one or more PN/AHW MBS item numbers at 39% of encounters with recorded PN/AHW activity. By 2009–10, this proportion had risen to 45.5%. The removal of many PN/AHW item numbers in early 2012, meant that in 2012–13 claims for PN/AHW services for chronic disease accounted for 92% of recorded PN/AHW items.

While PN/AHW provision of clinical treatments (for example, advice, education, administrative) remained rare, they did increase from 2 per 1,000 encounters in 2005–06, to 11 per 1000 in 2012–13. Overall in 2012–13 PNs/AHWs provided 14% of all 'other treatments' recorded, a significantly greater proportion than in 2005–06 (9%).

Changes in the problems for which PNs/AHWs were involved in management largely reflect the changes in the activities undertaken. There were significant increases in the rate at which they were involved in management of check-ups, diabetes, atrial fibrillation/flutter and preventive procedures with high-risk patients (reflecting the increasing rate of INRs, particularly in the last four years). Some of these increases may well have been stimulated by the introduction of MBS item 10997 for services provided for a chronic disease in 2007–08.

## **Referrals (Chapter 11)**

Over the 10 years, there were significant increases in the likelihood that GP-patient encounters would involve one or more referrals and that a problem being managed at encounter would be referred (from 8% to 9.5%).

A significant increase in the overall rate of referrals, from 7.9 per 100 problems managed in 2003–04, to 9.5 per 100 in 2012–13, was largely due to an increase in the referrals to allied health professionals, rather than to medical specialists. The rate of referral to allied health services increased from 1.8 per 100 problems managed in 2003–04 to 3.0 per 100 in 2012–13, and increases were highest among referrals to psychologists and podiatrists/chiropractors, with a marginally significant increase in referral rates to dietitians/nutritionists. However, there were marginal increases in referrals rates per 100 problems to orthopaedic surgeons, cardiologists and gastroenterologists; and marginal decreases in referrals to surgeons and ophthalmologists.

Overall, referrals increased significantly, from 12 per 100 encounters in 2003–04 to 15 per 100 in 2012–13. Extrapolation of this change suggests there were about 7.6 million more GP referrals nationally in 2012–13 than in 2003–04, including about 3.7 million more referrals to medical specialists and 3.5 million more to allied health services.

## Tests and investigations (Chapter 12)

Between 2003–04 and 2012–13:

- there was a significant increase in the proportion of problems managed for which pathology (from 12% to 14%) or imaging (5% to 6%) was ordered
- results suggest that nationally there were about 8 million more GP–patient encounters involving pathology orders and 4.2 million more involving imaging requests
- the number of pathology tests ordered increased from 24.1 to 30.4 tests/batteries of tests per 100 problems managed
- the largest increase was in orders for chemical pathology, (from 13 to 18 per 100 problems managed)
- haematology orders increased at a slower rate, (from 4.6 to 5.4 per 100)
- imaging test orders increased significantly from 5.6 to 6.7 per 100 problems: orders for ultrasound imaging showed the largest growth; orders for computerised tomography and for magnetic resonance imaging also significantly increased; while orders for diagnostic radiology decreased marginally.

## Substudies of patient risk factors (Chapter 13)

### Body mass index:

*Adults* ( $n = 30,000$ – $32,000$  per year): prevalence of overweight/obesity in sampled adults (aged 18 years and over) increased significantly from 57% to 61%. The prevalence of obesity rose from 22% in 2003–04 to 27% in 2010–11 and then remained static. The increase was apparent among both male and female patients.

*Children* ( $n = 3,000$ – $4,000$  per year): prevalence of obesity among sampled children aged 2–17 years decreased significantly from 12% in 2003–04 to 9% in 2012–13, but this decrease was noted only for male children (from 14% to 10%). The prevalence of overweight in children remained stable over the decade at 17–19%.

**Smoking** ( $n = 31,000$ – $34,000$  per year): among sampled adults aged 18 years and over, there were significant decreases in the prevalence of current daily smoking (from 18% to 14%) and occasional smoking (from 4.3% to 2.6%) over the decade. Daily smoking was significantly more common among males than females in all years.

**Alcohol consumption** ( $n = 30,000$ – $34,000$  per year): among sampled adults (18+ years), prevalence of at-risk levels of alcohol consumption declined from 27% in 2003–04 to 24% in 2012–13. The prevalence among male patients significantly decreased from 33% to 29%, while there was a marginal decrease for female patients from 23% to 21%.

**Risk profile in adults** ( $n = 29,000$ – $32,000$  per year): there was a significant increase in the proportion of adults with one risk factor (from 49.0% in 2003–04 to 52.0% in 2012–13) and a marginal decrease in the proportion with three risk factors (from 4.0% to 3.4%).

## FEATURE—Type 2 diabetes

Many aspects of the above data are brought together in a feature investigating the prevalence and management of Type 2 diabetes, and changes in management over time. See Chapter 14 of *General practice activity in Australia 2012–13*, available at <[hdl.handle.net/2123/9365](http://hdl.handle.net/2123/9365)>



# 1 Introduction

This report is the 34<sup>th</sup> book in the General Practice Series from the Bettering the Evaluation of Care and Health (BEACH) program. It includes summary results from the most recent 10 years of the program, from 2003–04 to 2012–13 inclusive.

Released in parallel with this report is a more detailed report of results for 2012–13 in the BEACH program, *General practice activity in Australia 2012–13*,<sup>1</sup> available at <[hdl.handle.net/2123/9365](http://hdl.handle.net/2123/9365)>.

BEACH is a continuous national study of general practice activity in which ever-changing random samples of about 1,000 general practitioners (GPs) participate in a year. Each participating GP records details of 100 consecutive GP–patient encounters with consenting patients. BEACH is run by the Family Medicine Research Centre (FMRC) at the University of Sydney. The program is supported financially by government instrumentalities and private industry (see Acknowledgments).

The BEACH program began in April 1998 and was the culmination of about 20 years research and development work at the University of Sydney. At the end of its 15<sup>th</sup> year (March 2013), its database included records for about 1.5 million GP–patient encounters from 14,793 GP participants, representing 9,630 individuals.

From April 1998 to March 2011, BEACH was conducted by the FMRC, University of Sydney, in collaboration with the Australian Institute of Health and Welfare (AIHW), under the AIHW Act. Since April 2011 it has been conducted by the FMRC. BEACH is currently supported financially by government and private industry (see Acknowledgments).

This book investigates results of each of 10 years of data to identify changes that occurred over the decade 2003–04 to 2012–13. The report is based on information from 9,772 participating GPs, about almost 1 million GP–patient encounters.

The structure of this report follows the usual approach of the annual BEACH reports.

Ten years of results are provided about the GPs, the patients and the problems managed, followed by an overview of management, and specific chapters for each type of management action. Changes in prevalence of some patient risk factors are also presented.

Each chapter contains an overview of the section (including definitions where relevant), and a brief description of the major findings, followed by the results tables. In the tables, statistically significant changes between 2003–04 and 2012–13 are marked. The national effect of significant change can be estimated by extrapolating the BEACH results to all GP Medicare claimed encounters. The method adopted for extrapolation of the effect of a change is described in Section 2.9. Examples of extrapolation of a measured change are also provided in each of chapters 5 to 12 inclusive. The reader can apply this method to any significant change in the BEACH data presented in terms of rate per 100 encounters, to gain an estimate of the size of the national effect of this change.

In this report, changes over time in, for example, GP management actions for a specific problem, or changes in the problems managed for a selected group of patients, are not generally investigated. However, an example of this type of specific analysis for a selected topic is given for Type 2 diabetes in Chapter 14 of the companion report, *General practice activity in Australia 2012–13*.<sup>1</sup> Such analyses can be requested from the FMRC. Details are provided on the FMRC web site: [sydney.edu.au/medicine/fmrc/](http://sydney.edu.au/medicine/fmrc/).



## 1.1 Background

In June 2012, the population of Australia was estimated to be 22.6 million people,<sup>2</sup> up from 19.5 million in June 2002. Like the rest of the developed world, Australia has an ageing population. Between June 2002 and June 2012, the proportion of the population that was aged 65 years and over increased from 12.7% to 14.2, and this included an increase in proportion aged 85 years or more, from 1.4 % to 1.9% of the total population.<sup>2</sup> Over the next several decades, population ageing is projected to have significant implications for Australia, including for health.<sup>3</sup> As life expectancy improves, people are living longer with disease, so a greater part of the GP workload will involve management of older patients with multiple chronic diseases.

Australia's health expenditure in 2010–11 was \$130.3 billion, an average \$5,796 per Australian, and accounted for 9.3% of GDP. Governments funded 69.9%, with the remainder (30.1%) being paid by the non-government sector.<sup>4</sup> Government expenditure on general practice services (including those of the practice nurses) was almost \$5.6 billion dollars in the 2011–12 financial year.<sup>5</sup>

GPs are usually the first port of call in the Australian healthcare system. Payment for GP visits is largely on a fee-for-service system, there being no compulsory patient lists or registration. People are free to see multiple practitioners and visit multiple practices of their choice. There is a universal medical insurance scheme (managed by Medicare Australia), which covers all or most of an individual's costs for a GP visit.

In 2011 in Australia, there were 25,056 practising GPs (medical practitioners self-identifying as GPs), making up 25,063 full-time equivalents (FTE, based on a 40-hour week), or 109.7 FTE GPs per 100,000 people.<sup>6</sup>

In the April 2012–March 2013 year, about 85% of the Australian population claimed at least one GP service from Medicare (personal communication, Department of Health and Ageing [DoHA], June 2013). From April 2012 to March 2013, Medicare paid rebates for about 126.8 million claimed general practice service items (excluding practice nurse items),<sup>7</sup> at an average of about 5.59 GP visits per head of population or 6.57 visits per person who visited at least once. This equates to about 2.44 million GP–patient encounters per week. A decade earlier, in the 2003–04 financial year, total Medicare claims for GP–patient encounters numbered 96.3 million, an average attendance rate of 4.3 per head of population.<sup>7</sup>

Medicare statistics provide information about frequencies and costs of visits claimed from Medicare for GP services. BEACH gives us an understanding of the content of GP–patient encounters and the services and treatments that GPs provide. The BEACH program aims to:

- provide a reliable and valid data collection process for general practice that is responsive to the ever-changing needs of information users
- establish an ongoing database of GP–patient encounter information
- assess patient risk factors and health states, and their relationship with service activity.

Users of BEACH data might wish to consolidate information from multiple sources.

Integration can provide a more comprehensive picture of the health and health care of the Australian community. Readers need to be aware of how the BEACH data differ from those drawn from other sources. A summary of differences between the BEACH datasets and those in national administrative datasets and studies is available in *General practice activity in Australia 2012–13* (Section 1.3).<sup>1</sup>

## 2 Methods

In summary:

- each year, BEACH involves a new random sample of about 1,000 GPs
- each GP records details about 100 doctor-patient encounters of all types
- the GP sample is a rolling (ever-changing) sample, with about 20 GPs participating in any one week, 50 weeks a year (with two weeks break over Christmas)
- each GP can be selected only once per Quality Improvement & Continuing Professional Development (QI & CPD) Program triennium (that is, once in each 3-year period)
- the encounter information is recorded by the GPs on structured paper encounter forms (Appendix 1)
- GP participants also complete a questionnaire about themselves and their practice (Appendix 2).

### 2.1 Sampling methods

The source population includes all vocationally registered GPs and all general practice registrars who claimed a minimum of 375 Medicare general practice items of service in the most recently available 3-month Medicare data period (which equates to 1,500 such claims in a year). This ensures inclusion of the majority of part-time GPs, while excluding those who are not in private practice but claim for a few consultations a year.

The Medicare statistics section of the DoHA updates the sample frame quarterly from the Medicare claims data. They then remove from the sample frame any GPs already randomly sampled in the current triennium, and draw a new sample from those remaining in the sample frame. This ensures the timely addition of new entries to the profession, and timely exclusion of those GPs who have stopped practising, or have already participated or been approached in the current triennium.

### 2.2 Recruitment methods

The randomly selected GPs are approached by letter, posted to the address provided by DoHA.

- Over the following 10 days, the telephone numbers generated from the Medicare data are checked using the electronic white and yellow pages. This is necessary because many of the telephone numbers provided from the Medicare data are incorrect.
- The GPs are then telephoned in the order they were approached and, referring to the approach letter, asked whether they will participate.
- This initial telephone contact with the practice often indicates that the selected GP has moved elsewhere, but is still in practice. Where a new address and/or telephone number can be obtained, these GPs are followed up at their new address.
- GPs who agree to participate are set an agreed recording date several weeks ahead.
- A research pack is sent to each participant before the planned start date.
- Each GP receives a telephone reminder early in the agreed recording period – this also provides the GP with an opportunity to ask questions about the recording process.

- GPs can use a 'freecall' (1800) number to ring the research team with any questions during their recording period.
- Non-returns are followed up by regular telephone calls for three months.
- Participating GPs earn clinical audit points towards their QI & CPD requirements through the Royal Australian College of General Practitioners (RACGP) and/or the Australian College of Rural and Remote Medicine (ACRRM). As part of this QI process, each receives an analysis of his or her results compared with those of nine other de-identified GPs who recorded at about the same time. Comparisons with the national average and with targets relating to the National Health Priority Areas are also provided. In addition, GPs receive some educational material related to the identification and management of patients who smoke or consume alcohol at hazardous levels. Additional points can be earned if the participant chooses to do a follow-up audit of smoking and alcohol consumption among a sample of patients about 6 months later.

## 2.3 Ethics approval and informed patient consent

Ethics approval for this study in 2012–13 was obtained from the Human Ethics Committee of the University of Sydney.

Although the data collected by the GPs is not sufficient to identify an individual patient, informed consent for GP recording of the encounter details is required from each patient. GPs are instructed to ensure that all patients presenting during their recording period are provided with a Patient Information Card (Appendix 3) and to ask the patient if they are happy for their data to be included in the study. If the patient refuses, details of the encounter are not recorded. This is in accordance with the Ethics requirements for the BEACH program.

## 2.4 Data elements

BEACH includes three interrelated data collections: GP characteristics, encounter data and patient health status. An example of the form used to collect the encounter data and the data on patient health status is included in Appendix 1. The GP characteristics questionnaire is provided in Appendix 2. The GP characteristics and encounter data collected are summarised below. Patient health status data are described in Section 2.6.

### GP profile form (Appendix 2)

- **GP characteristics:** age and sex, years in general practice, number of direct patient care hours worked per week, intended changes in hours of direct patient care in five years, country of graduation, general practice registrar status, Fellow of the RACGP status, Fellow of the ACRRM status, use of computers at work, work undertaken in other clinical settings, number of practice locations worked in a regular week.
- **Practice characteristics:** postcode of major practice; number of individual, and number of full-time equivalent GPs working in the practice; number of individual and number of full-time equivalent practice nurses working in the practice; usual after-hours care arrangements, other health services located at the major practice.

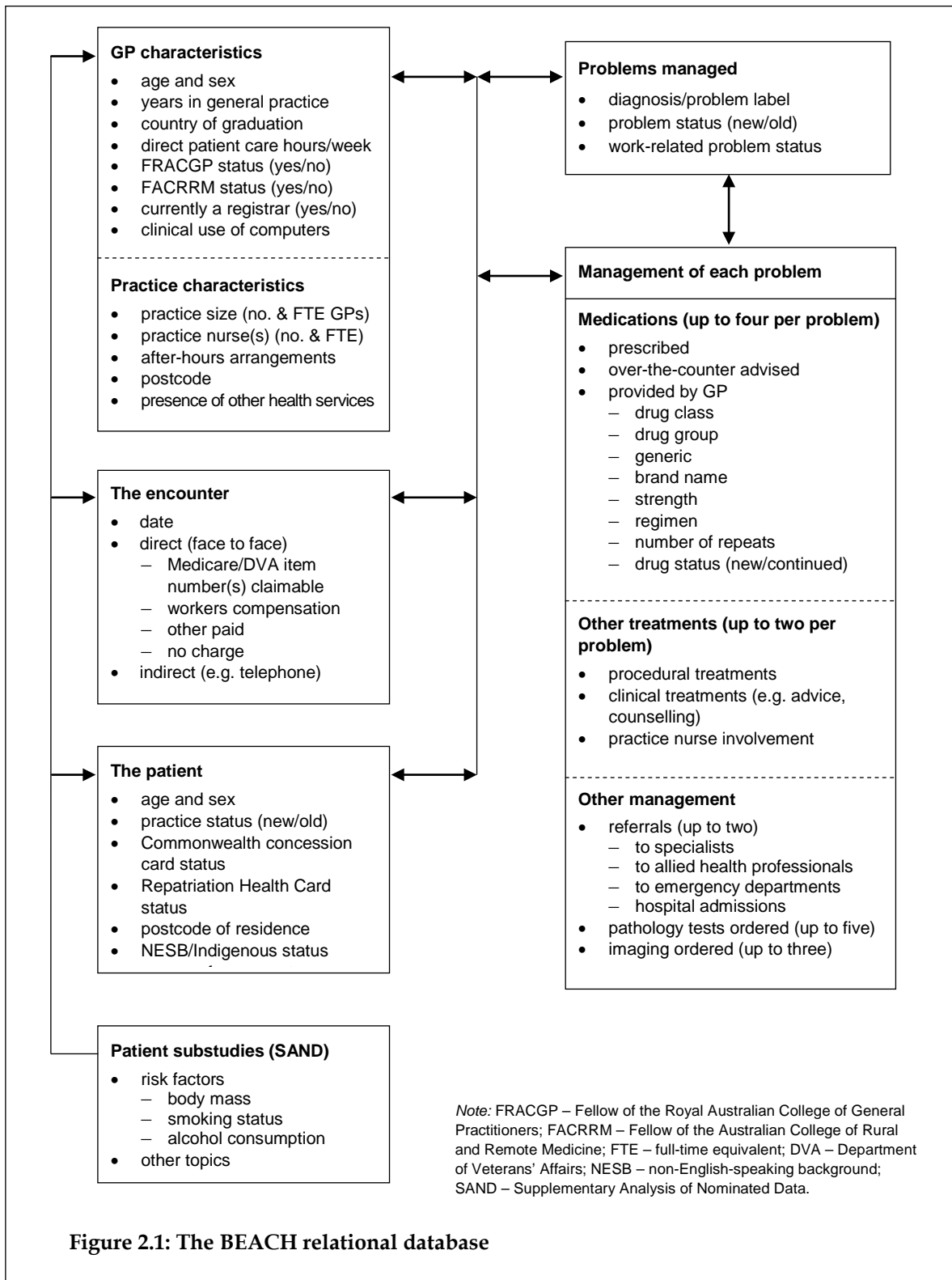
## Encounter recording form (Appendix 1)

- **Encounter data:** date of consultation, type of consultation (direct/indirect) (tick box options), up to three MBS/DVA item numbers (where applicable), and other payment source (where applicable) (tick boxes).
- **Patient data:** date of birth, sex and postcode of residence. Tick boxes (yes/no options) are provided for Commonwealth concession card holders, holders of a Repatriation Health Card (from DVA), non-English-speaking background (patient self-report—a language other than English is the primary language at home), Aboriginal person (self-identification), and Torres Strait Islander person (self-identification). Space is provided for up to three patient reasons for encounter (RFEs). (See ‘Glossary’).
- **The problems managed** at encounter (at least one and up to four). Tick boxes are provided to denote the status of each problem as new or continuing for the patient and whether the problem is considered by the GP to be work-related.
- **Management of each problem**, including:
  - medications prescribed, supplied by the GP and advised for over-the-counter purchase including brand name, form (where required), strength, regimen, status (new or continuing medication for this problem), number of repeats
  - other treatments provided for each problem, including counselling, advice and education, and procedures undertaken, and whether the recorded other treatment was provided by practice nurse (tick box)
  - new referrals to medical specialists, allied health services, emergency departments, and hospital admissions
  - investigations, including pathology tests, imaging and other investigations ordered.

## 2.5 The BEACH relational database

The BEACH relational database is described diagrammatically in Figure 2.1. Note that:

- all variables can be directly related to the encounter, the GP and the patient characteristics
- all types of management are directly related to the problem being managed
- RFEs have only an indirect relationship with problems managed, as a patient may describe one RFE (such as ‘repeat prescriptions’) that is related to multiple problems managed, or several RFEs (such as ‘runny nose’ and ‘cough’) that relate to a single problem (such as upper respiratory tract infection) managed (see Section 6.3).



## 2.6 Supplementary Analysis of Nominated Data

A section at the bottom of each recording form investigates aspects of patient health or health care delivery in general practice not covered by the consultation-based data. These substudies are referred to as SAND (Supplementary Analysis of Nominated Data).

- Each year, the 12-month data period is divided into 10 blocks, each of 5 weeks, with three substudies per block. The research team aims to include data from about 100 GPs in each block.
- Each GP's pack of 100 forms is made up of 40 forms that ask for the start and finish times of the encounter, and include questions about patient risk factors: patient height and weight (used to calculate body mass index, BMI), alcohol intake and smoking status (patient self-report). The methods and results of topics in the SAND substudies for alcohol consumption, smoking status and BMI are reported in Chapter 13. The start and finish times collected on these encounters are used to calculate the length of consultation. The length of consultation for Medicare-claimable encounters is reported in Section 5.3.
- The remaining 60 forms in each pack are divided into two blocks of 30, so each SAND block includes about 3,000 records. Some topics are repeated to increase sample size. Different questions are asked of the patient in each block and these vary throughout the year.
- The order of SAND sections is rotated in the GP recording pack, so that 40 patient risk factor forms may appear first, second or third in the pack. Rotation of ordering ensures there was no order effect on the quality of the information collected.

Abstracts of results and the research tools used in all SAND substudies from April 1998 to March 2012 have been published. Those:

- from April 1998 to March 1999 were published in *Measures of health and health care delivery in general practice in Australia*<sup>8</sup>
- from April 1999 to July 2006 were published in *Patient-based substudies from BEACH: abstracts and research tools 1999–2006*<sup>9</sup>
- conducted between August 2006 and March 2012 have been published in each of the general practice activity annual reports<sup>10–15</sup>
- conducted in the 2012–13 BEACH year are provided in Chapter 15 of the companion report: *General practice activity in Australia 2012–13*.<sup>1</sup>

Abstracts of results for all SAND substudies are also available on the FMRC's website <[sydney.edu.au/medicine/fmrc/publications/sand-abstracts](http://sydney.edu.au/medicine/fmrc/publications/sand-abstracts)>.

## 2.7 Statistical methods

The analysis of the 2012–13 BEACH data was conducted with Statistical Analysis System (SAS) version 9.3,<sup>16</sup> When originally published, data from 2001–02 to 2004–05 were analysed using SAS version 6.12<sup>17</sup> (with additional programming to adjust for the cluster sample study design). Previously published data from 2005–06 to 2010–11 were analysed using SAS version 9.1.3.<sup>18</sup> At each change in SAS version, all past data have been re-analysed. This has resulted in slightly tighter confidence intervals and minor variations in point estimates (of up to 0.1) when data published in this report are compared with data published in earlier annual reports.

BEACH has a single stage cluster sample study design, each 100 encounters forming a cluster around each GP participant. In cluster samples, variance needs to be adjusted to account for correlation between observations within clusters. Procedures in SAS version 9.3 were used to calculate the intraclass correlation, and adjust the confidence intervals accordingly.<sup>16</sup>

Post-stratification weighting of encounter data adjusts for: any difference in the age-sex distribution of the participating GPs and those in the sample frame from which the samples were drawn; and for the varying activity level of each GP (measured by number of claims each has made in the previous 12 months from Medicare Australia). Each year, the age-sex distribution of patients at the sampled encounters has excellent precision when compared with the age-sex distribution of patients at all Medicare claimed services of this type.

The encounter is the primary unit of inference. Proportions are used only when describing the distribution of an event that can arise only once at a consultation (for example, patient or GP age and sex), or to describe the distribution of events within a class of events (for example, problem A as a percentage of total problems). Due to rounding, proportions may not always add to exactly 100%.

Rates per 100 encounters are used when an event can occur more than once at the consultation (for example, RFEs, problems managed or medications). Rates per 100 problems are also used when a management event can occur more than once per problem managed.

Statistical significance is tested by chi-square statistic for GP characteristics, but significance of differences in/for rates is judged by non-overlapping confidence intervals of the results being compared. The magnitude of this difference can be described as at least  $p < 0.05$ .

Assessment using non-overlapping CIs is a conservative measure of significance,<sup>19-21</sup> particularly when differences are assessed by comparing results from independent random samples, as is the case when changes over time are investigated using BEACH data. Due to the number of comparisons made in this and the companion publication, we believe this more conservative approach is warranted.

- Changes over time in the frequency of these events are judged significant (that is, a real change has occurred) if the two sets of confidence intervals do not overlap. For example, Result A: 11.5 per 100 encounters (95% CI: 11.3–11.7) is significantly less than Result B: 11.9 per 100 encounters (95% CI: 11.8–12.0).
- If the two sets of confidence intervals butt together the difference is regarded as marginal. For example, Result A: 11.5 per 100 encounters (95% CI: 11.3–11.7) is marginally lower than Result B: 11.9 (95% CI: 11.7–12.1).
- If the two sets of 95% confidence intervals overlap, then no change was measured.
- Differences discussed in this report are statistically significant unless otherwise stated.

## 2.8 Changes over time

For the 10 years from 2003–04 to 2012–13, patient reasons for encounter and problems managed have been reported as rates per 100 encounters. In earlier years, rates per 100 encounters were also used when measuring changes in each of the management actions (prescriptions, other treatments, referrals, pathology and imaging). However, there has been a significant increase in the number of problems managed per encounter (see Chapter 7). This means that at each encounter, there is an increased chance of a management action occurring, without any change in the management practise of GPs. All management actions are therefore reported in two ways – as rates per 100 problems managed (used as the primary measure of change in GP behaviour) and as rates per 100 encounters (used as the basis of extrapolation).

Data presented in this report are comparable for each result across all data years. Where methodological changes have occurred, the data have either:

- been recalculated across all years using the new method (for example, body mass index was recalculated due to a change in the World Health Organization's (WHO) body mass index groupings)
- been regrouped for comparability. Where this occurs, it is noted in the footnotes of the table. An example is the combined presentation of home visits and institutional visits in Chapter 5 because the MBS now has only one item number for both. In previously published data it was possible to differentiate the two
- been omitted from this report (if recalculation or grouping was not possible). Where data are omitted, this is noted as not applicable (N/A) or not available (NAv), as appropriate.

In measuring changes over time, the 2012–13 results are compared with those from 2003–04 wherever possible. However, as in any long-term research program, changes occur over the years. For example, practice nurse activity data were not collected until 2005–06, so the changes are only considered between 2005–06 and 2012–13.

Each table includes the most frequent events occurring in 2012–13, and the comparative results for each of the earlier years. In addition, each table includes data for events that were more frequent in past year(s), but were no longer in the most frequent in 2012–13. In general, results are presented in decreasing 2012–13 order of frequency.

The direction and type of change between 2003–04 and 2012–13 is indicated for each result in the far right column of the tables:

- ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 when compared with the first year of data reported
- ↑/↓ indicates a marginally significant change in 2012–13 when compared with the first year of data reported
- – indicates there was no significant change in 2012–13 when compared with the first year of data reported
- and § indicates a noteworthy change during the decade.

## 2.9 Extrapolated national estimates

Extrapolations can be used to estimate the number of occurrences of a selected event at GP-patient encounters in Australia at a single time point, or to estimate the total national effect of a measured change.

Where the results demonstrate a significant change over time, the estimated national change across total GP Medicare services from 2003–04 to 2012–13 can be calculated using the method detailed below. Note that extrapolations are always based on rate per 100 encounters rather than rate per 100 problems, because there is no independent measure of the number of problems managed in Australian general practice. In contrast, the number of national encounters can be drawn from Medicare claims data.

Examples of extrapolated national change are given in each chapter in the report from Chapter 5 to Chapter 12 inclusive.

When extrapolating measured change over the decade to national estimates, we:

- divide the 'rate per 100 encounters' of the selected event for 2003–04 by 100, and then multiply by the total number of general practitioner service items claimed through



Medicare in 2003–04 (rounded to the nearest 100,000). As shown in Table 2.1, this was 96.3 million. This provides the estimated national number of events in 2003–04

- repeat the process using data from 2012–13.

The difference between the two estimates gives the estimated national change in the frequency of that event between 2003–04 and 2012–13. Estimated national number of events is rounded to the nearest 100,000 if more than one million and to the nearest 10,000 if below one million. It is possible to use this method to calculate the national effect of any significant change in a single result over any two time points.

Change is expressed as the estimated increase or decrease over the study period, in the number of general practice contacts for that event (for example, an increase or decrease in the number of GP management contacts with problem X); or an increase or decrease in the number of times a particular management action (for example, a selected generic medication) was prescribed in Australia in 2012–13, when compared with (usually) 2003–04.

Extrapolations can also be made using data from a single time point to estimate the number of occasions that an event occurs in general practice encounters nationally in a specific year. When extrapolating from a single time point we:

- divide the ‘rate per 100 encounters’ of the selected event by 100, and multiply by the total number of general practitioner service items claimed through Medicare that year (rounded to nearest 100,000) to give the estimated national number of events in that year.

Table 2.1 provides the total (rounded) number of general practice professional service items claimed from Medicare in each financial year from 2003–04 to 2012–13.

**Table 2.1: Rounded number of general practice professional services claimed from Medicare Australia each financial year, 2003–04 to 2012–13 (million)**

	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13 <sup>(a)</sup>
Rounded number of MBS GP items of service claimed	96.3	98.2	101.1	103.4	109.5	113.0	116.6	119.2	123.9	126.8

(a) Medicare data for the 2012–13 year included data from the April 2012 to March 2013 quarters because the 2012–13 financial year data were not available at the time of preparation of this report.

Source: Medicare statistics<sup>5,7</sup>

### **Example 1: Change in the number of GP referrals to allied health services nationally (with 95% confidence intervals)**

There was a significant increase in the number of referrals to allied health services at encounter, from 2.6 (95% CI: 2.4–2.8) per 100 encounters in 2003–04 to 4.7 (95% CI: 4.4–5.0) per 100 in 2012–13 (see Table 5.1). The calculation used to extrapolate the effect of this change across Australia is:

**In 2003–04 (2.6/100) x 96.3 million = 2.50 million such referrals nationally**

- Lower confidence interval: 2.4/100 x 96.3 million = possibly as few as 2.31 million
- Upper confidence interval: 2.8/100 x 96.3 million = possibly as many as 2.70 million

**In 2012–13, (4.7/100) x 126.8 million = 5.96 million such referrals nationally**

- Lower confidence interval: 4.4/100 x 126.8 million = possibly as few as 5.58 million
- Upper confidence interval: 5.0/100 x 126.8 million = possibly as many as 6.34 million

This suggests there were 3.46 million (5.96 million minus 2.50 million) more GP referrals to allied health services made at GP–patient encounters in Australia in 2012–13 than in 2003–04. This is our best estimate of the change, but we are 95% confident that the true result is between 3.27 and 3.64 million additional such referrals in 2012–13.

This is the result of the compound effect of the increase in the number of referrals to allied health services being given by GPs at encounters **plus** the increased number of visits over the decade across Australia.

### **Example 2: Change in the number of GP–patient encounters at which upper respiratory tract infection was managed nationally (with 95% confidence intervals)**

The management rate of upper respiratory tract infection (URTI) did not change between 2003–04 (5.5 per 100 encounters, 95% CI: 5.1–5.8) and 2012–13 (5.8 per 100, 95% CI: 5.3–6.3).

- For 2003–04 our best estimate for the total national encounters involving management of URTI is: 5.30 million [(5.5/100) x 96.3 million], but we are 95% confident that the true number lies between 4.91million [(5.1/100) x 96.9 million] and 5.59 million [(5.8/100) x 96.9 million].
- For 2012–13 our best estimate for the total national encounters involving URTI is: 7.35 million times [(5.8/100) x 126.8 million], but we are 95% confident that the true number lies between 6.72 million [(5.3/100) x 126.8 million] and 7.99 million [(6.3/100) x 126.8 million].

Therefore we estimate that even though GP management rate of URTI did not change, because of the increased number of attendances nationally in 2012–13 URTI was managed at 2.05 (95% CI: 1.81 million–2.4 million more GP–patient encounters than it was in 2003–04.

### **Considerations and limitations in extrapolations**

The extrapolations to the total events occurring nationally in any one year are only estimates. They may provide:

- an underestimate of the true ‘GP workload’ of a condition/treatment because the extrapolations are made to GP Medicare items claimed, not to the total number of GP–patient encounters per year – an additional 5% of BEACH encounters annually include encounters paid by sources other than Medicare, such as DVA, state governments, workers compensation insurance, and employers
- an underestimate of activities of relatively low frequency with a skewed distribution across individual GPs.

Further, the base numbers used in the extrapolations are rounded to the nearest 100,000, and extrapolation estimates are rounded to the nearest 100,000 if more than one million and to the nearest 10,000 if below one million. However, the rounding has been applied to all years, so the effect on measures of change will be very small. Therefore, the extrapolation still provides an indication of the size of the effect of measured change nationally.

Extrapolations are based on the unit of the encounter because the number of national encounters is quantifiable using Medicare claims data. However, the reader should be aware that where an event can occur more than once per encounter (e.g. GPs can record up to two referrals per encounter), the extrapolation represents the number of occurrences of that event nationally (e.g. number of referrals nationally), rather than the number of encounters nationally where at least one event (e.g. referral) occurred.

## 2.10 Changes to data elements and reporting methods

Some changes in data elements and reporting methods have occurred since the BEACH study began in April 1998.

Two changes were made to the BEACH form from 2005–06 onwards to capture practice nurse activity associated with the GP–patient consultations. From 2005–06 onwards:

- GPs could record multiple (up to three) Medicare item numbers
- in the ‘other treatments’ section, for each problem managed, the GP was asked to tick the practice nurse box if the treatment recorded was provided by the practice nurse rather than by the GP. If the box was not ticked, the research team assumed that the GP provided the recorded treatment.

These changes have implications for the reporting of Medicare/DVA-claimable encounters (Chapter 5), other treatments (Chapter 10) and practice nurse activity (Chapter 10).

### Medicare/DVA-claimable encounters

For the first 7 years of the BEACH program (1998–99 to 2004–05), where a Medicare item number was claimable for the encounter, the GP was instructed to record only one item number. Where multiple item numbers (for example, an item for ‘standard surgery consultation’ and a procedural item number) were claimable for an encounter, the GP was instructed to record the lower of these (usually an A1 item number). For reporting purposes Medicare-claimable encounters were broken down according to the item number recorded by the GP as claimable (either through Medicare or through DVA) for the encounter.

In this report, the Medicare/DVA claimable encounters count only one item number per Medicare/DVA-claimable encounter for comparability with previous years (see Chapter 5). Practice nurse Medicare-claimable encounters are not reported in Chapter 5.

The selection of one item number was done on a priority basis: consultation item numbers override incentive item numbers, which override procedural item numbers, which override other Medicare item numbers.

### Practice nurse activity

The research team began to capture practice nurse activity (in 2005–06) due to the introduction of four new MBS item numbers in November 2004, which covered some selected activities done by a practice nurse on behalf of a medical practitioner.<sup>22</sup>

The primary aim of BEACH is to describe general practice activity. Before 2005–06, ‘general practice activity’ was described in terms of GP–patient encounters. However, the introduction of the practice nurse item numbers meant that, if we had no record of practice nurse activity associated with the GP–patient encounter, the content of the consultation was not fully described.

Over the years, new PN item numbers were added to the MBS and some items were broadened to include work done by Aboriginal health workers (AHWs). In past years we have reported the results referring to PNs alone. However, in 2012–13 a few GPs indicated (of their own accord) that the recorded action was done by an AHW rather than a PN. This information is now included, and refers to work undertaken at encounters by PNs and AHWs in conjunction with the GPs, though the vast majority will have been done by PNs.

There is a limitation to this approach. Few GPs specifically indicated that the work was done by an AHW. Others may have thought that because the question referred specifically to PNs, recording of work done by AHWs was not specifically requested. These results therefore have the potential to be an underestimate of the work undertaken at GP-patient encounters by PNs and AHWs.

Chapter 10 provides a breakdown of the PN/AHW Medicare items claimed, the morbidity managed with the assistance of the PN/AHW, and the other treatments given by the PN/AHW as recorded by the GP participants from 2005-06 to 2012-13.

These results do not include activities done by the PN or AHW that were performed independently of the recorded encounter.

## Other treatments

In Chapter 10 'Other treatments', all recorded clinical and procedural treatments are included, irrespective of whether they were provided by the GP or by the PN or AHW. The exception is Section 10.3, where those activities reported by the GP to have been done by a PN or AHW are analysed separately.

## 2.11 Classification of data

The following data elements are classified according to the International Classification of Primary Care - Version 2 (ICPC-2), a product of the World Organization of Family Doctors (Wonca):<sup>23</sup>

- patient reasons for encounter (RFEs)
- problems managed
- clinical treatments (for example, counselling, advice)
- procedural treatments
- referrals
- investigations ordered (including pathology, imaging and other investigations).

The ICPC-2 is used in more than 45 countries as the standard for data classification in primary care. It is accepted by the World Health Organization in the WHO Family of International Classifications,<sup>24</sup> and is the declared national standard in Australia for reporting of health data from general practice and patient self-reported health information.<sup>25</sup>

The ICPC-2 has a biaxial structure, with 17 chapters on one axis (each with an alphabetic code) and seven components on the other (numeric codes) (Figure 2.2). Chapters are based on body systems, with additional chapters for psychological and social problems.

Component 1 includes symptoms and complaints. Component 7 covers diagnoses - it can also be expanded to provide data about infections, injuries, neoplasms, congenital anomalies and 'other' diagnoses.

Component 2 (diagnostic, screening and prevention) is often applied in describing the problem managed (for example, check-up, immunisation). Components 3 to 6 cover other processes of care, including referrals, other (non-pharmacological) treatments and orders for pathology and imaging. The components are standard and independent throughout all chapters. The updated component groupings of ICPC-2 codes, released by the Wonca International Classification Committee in 2004<sup>26</sup> have been used in this report.

The ICPC-2 is an excellent epidemiological tool. The diagnostic and symptom rubrics have been selected for inclusion on the basis of their relative frequency in primary care settings, or because of their relative importance in describing the health of the community. ICPC has about 1,370 rubrics and these are sufficient for meaningful analyses. However, reliability of data entry, using ICPC-2 alone, requires a thorough knowledge of the classification, for correct classification of a concept to be ensured.

In 1995, recognising a need for a coding and classification system for general practice electronic health records, the Family Medicine Research Centre (FMRC) (then Unit) developed an extended clinical terminology classified according to the ICPC, now called ICPC-2 PLUS.<sup>27</sup> This is an interface terminology, developed from all the terms used by GPs in studies such as *The Australian Morbidity and Treatment Survey 1990–91* (113,468 encounters),<sup>28</sup> *A comparison of country and metropolitan general practice 1990–91* (51,277 encounters),<sup>29</sup> *the Morbidity and Therapeutic Index 1992–1998* (a clinical audit tool that was available to GPs) (approximately 400,000 encounters), and *BEACH 1998–2013* (about 1.5 million encounters). Together, these make up about 2.5 to 3 million encounter records, involving about 4 million free text descriptions of problems managed and a further 4 million for patient reasons for encounter. These terms are classified according to ICPC-2 to ensure data can be compared internationally. Readers interested in seeing how coding works can download the ICPC-2 PLUS Demonstrator at <sydney.edu.au/medicine/fmrc/icpc-2-plus/demonstrator>.

When the free-text data are received from the GPs, trained secondary coders (who are undergraduate students), code the data in specific terms using ICPC-2 PLUS. This ensures high coder reliability and automatic classification of the concept, and allows us to ‘ungroup’ such ICPC-2 rubrics as ‘other diseases of the circulatory system’ and select a specific disease from the terms within it.

Components	A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z
1. Symptoms, complaints																	
2. Diagnostic, screening, prevention																	
3. Treatment, procedures, medication																	
4. Test results																	
5. Administrative																	
6. Other																	
7. Diagnoses, disease																	

A	General and unspecified	L	Musculoskeletal	U	Urinary
B	Blood & blood-forming organs	N	Neurological	W	Pregnancy, family planning
D	Digestive	P	Psychological	X	Female genital
F	Eye	R	Respiratory	Y	Male genital
H	Ear	S	Skin	Z	Social
K	Circulatory	T	Endocrine, nutritional & metabolic		

**Figure 2.2: The structure of the International Classification of Primary Care – Version 2 (ICPC-2)**

## Presentation of data classified in ICPC-2

Statistical reporting is usually at the level of the ICPC-2 classification (for example, acute otitis media/myringitis is ICPC-2 code H71). However, there are some exceptions where data are grouped either above the ICPC-2 level or across the ICPC-2 level. These grouped morbidity, pathology and imaging codes are defined in Appendix 4 available at:

<[purl.library.usyd.edu.au/sup/9781743323793](http://purl.library.usyd.edu.au/sup/9781743323793)>.

### Reporting morbidity with groups of ICPC-2 codes

When recording problems managed, GPs may not always be very specific. For example, in recording the management of hypertension, they may simply record the problem as 'hypertension'. In ICPC-2, 'hypertension, unspecified' is classified as 'uncomplicated hypertension' (code K86). There is another code for 'complicated hypertension' (K87). In some cases, the GP may simply have failed to specify that the patient had hypertension with complications. The research team therefore feels that for national data reporting, it is more reliable to group the codes K86 and K87 and label this 'Hypertension\*' – the asterisk indicating that multiple ICPC-2 codes (as in this example) or ICPC-2 PLUS codes (see below) are included. Appendix 4, Table A4.1 lists the codes included in these groups.

### Reporting morbidity with groups of ICPC-2 PLUS codes

In other cases, a concept can be classified within (but be only part of) multiple ICPC-2 codes. For example, osteoarthritis is classified in ICPC-2 in multiple broader codes according to site, such as L92 – shoulder syndrome (includes bursitis, frozen shoulder, osteoarthritis of shoulder, rotator cuff syndrome). When reporting osteoarthritis in this publication, all the more specific osteoarthritis ICPC-2 PLUS terms classified within all the appropriate ICPC-2 codes are grouped. This group is labelled 'Osteoarthritis\*' – the asterisk again indicating multiple codes, but in this case they are PLUS codes rather than ICPC-2 codes. Appendix 4, Table A4.1 lists the codes included in these groups.

### Reporting chronic morbidity

Chronic conditions are medical conditions characterised by a combination of the following characteristics: duration that has lasted or is expected to last 6 months or more, a pattern of recurrence or deterioration, a poor prognosis, and consequences or sequelae that affect an individual's quality of life.

To identify chronic conditions, a chronic condition list<sup>30</sup> classified according to ICPC-2 was applied to the BEACH data set. In general reporting, both chronic and non-chronic conditions (for example, diabetes and gestational diabetes) may have been grouped together when reporting (for example, diabetes – all\*). When reporting chronic morbidity, only problems regarded as chronic have been included in the analysis. Where the group used for the chronic analysis differs from that used in other analyses in this report, they are marked with a double asterisk. Codes included in the chronic groups are provided in Appendix 4, Table A4.2.

### Reporting pathology and imaging test orders

All the pathology and imaging tests are coded very specifically in ICPC-2 PLUS, but ICPC-2 classifies pathology and imaging tests very broadly (for example, a test of cardiac enzymes is classified in K34 – Blood test associated with the cardiovascular system; a CT scan of the lumbar spine is classified as L41 – Diagnostic radiology/imaging of the musculoskeletal system).

In Australia, the MBS classifies pathology and imaging tests in groups that are relatively well recognised. We therefore regrouped all pathology and imaging ICPC-2 PLUS codes into MBS standard groups. This allows comparison of data between data sources. The groups are marked with an asterisk, and inclusions are provided in Appendix 4, Tables A4.8 and A4.9.

## **Classification of pharmaceuticals**

Pharmaceuticals that are prescribed, provided by the GP or advised for over-the-counter purchase are coded and classified according to an in-house classification, the Coding Atlas for Pharmaceutical Substances (CAPS).

This is a hierarchical structure that facilitates analysis of data at a variety of levels, such as medication class, medication group, generic name/composition, and brand name.

The generic name of a medication is its non-proprietary name, which describes the pharmaceutical substance(s) or active pharmaceutical ingredient(s).

When strength and regimen are combined with the CAPS code, we can derive the prescribed daily dose for any prescribed medication or group of medications.

CAPS is mapped to the Anatomical Therapeutic Chemical (ATC)<sup>31</sup> classification, which is the Australian standard for classifying medications at the generic level.<sup>25</sup> The ATC has a hierarchical structure with five levels. For example:

- Level 1: C – Cardiovascular system
- Level 2: C10 – Serum lipid reducing agents
- Level 3: C10A – Cholesterol and triglyceride reducers
- Level 4: C10AA – HMG CoA reductase inhibitors
- Level 5: C10AA01 – Simvastatin (the generic drug).

An extension code identifies the brand of the product (where the GP has recorded brand).

## **Reporting pharmaceutical data**

For pharmaceutical data, there is the choice of reporting in terms of the CAPS coding scheme or the ATC. They each have advantages in different circumstances.

In the CAPS system, a new drug enters at the product and generic level, and is immediately allocated a generic code. Therefore, the CAPS classification uses a bottom-up approach.

In the ATC, a new generic drug type may initially enter the classification at any level (1 to 5), not necessarily always at the generic level. Reclassification to more specific ATC levels may occur later. Therefore, the ATC uses a top-down approach.

When analysing medications across time, a generic medication that is initially classified to a higher ATC level will not be identifiable in that data period, and may result in under-enumeration of that drug during earlier data collection periods. Therefore in measuring changes in medications over time, we have chosen to report at Level 2 of the ATC (which is more stable over time than Level 3), except when reporting at the generic level, when we use CAPS.

## 2.12 Quality assurance

All morbidity and therapeutic data elements were secondarily coded by staff who enter key words or word fragments, and select the term or label that matches the recorded information, from a pick list. On selection of the term, it was then automatically coded and classified. A quality assurance program to ensure reliability of data entry includes ongoing development of computer-aided error checks ('locks') at the data entry stage, and a physical check of samples of data entered against those on the original recording form. We also conduct logical data checks through SAS on a regular basis.

## 2.13 Validity and reliability

A discussion of the reliability and validity of the BEACH program has been published elsewhere.<sup>32</sup> This section touches on some aspects of reliability and validity of active data collection from general practice that should be considered by the reader.

In the development of a database such as BEACH, data gathering moves through specific stages: GP sample selection, cluster sampling around each GP, GP data recording, secondary coding and data entry. At each stage the data can be invalidated by the application of inappropriate methods. The methods adopted to ensure maximum reliability of coding and data entry have been described above. The statistical techniques adopted to ensure valid analysis and reporting of recorded data were described in Section 2.7. Previous work has demonstrated the extent to which a random sample of GPs recording information about a cluster of patients represents all GPs and all patients attending GPs,<sup>33</sup> the degree to which GP-reported patient RFEs and problems managed accurately reflect those recalled by the patient,<sup>34</sup> and reliability of secondary coding of RFEs<sup>35</sup> and problems managed.<sup>28</sup> The validity of ICPC as a tool with which to classify the data has also been investigated in earlier work.<sup>36</sup>

However, the question of the extent to which the GP-recorded data are a reliable and valid reflection of the content of the encounter must also be considered. In many primary care consultations, a clear pathophysiological diagnosis is not reached. Bentsen<sup>37</sup> and Barsky<sup>38</sup> suggest that a firm and clear diagnosis is not apparent in about half of GPs' consultations, and others suggest the proportion may be even greater.<sup>39</sup> As a result, it is often necessary for a practitioner to record a problem in terms of symptoms, signs, patient concerns, or the service that is requested, such as immunisation. For this reason, this report refers to patient 'problems' rather than 'diagnoses'.

A number of studies have demonstrated wide variance in the way a GP perceives the patient's RFE and the manner in which the GP describes the problem under management. Bentsen demonstrated that practitioners differ in the way they labelled problems, and suggested that clinical experience may be an important influence on the identification of problems within the consultation.<sup>37</sup> Two other factors that might affect GPs' descriptions of patient RFEs have been identified: although individuals may select the same stimuli, some label each stimulus separately, whereas others cluster them under one label; and individuals differ in the number of stimuli they select (selective perception).<sup>40</sup>



The extent to which therapeutic decisions may influence the diagnostic label selected has also been discussed. Howie<sup>41</sup> and Anderson<sup>42</sup> argue that, while it is assumed that the diagnostic process used in general practice is one of symptom → diagnosis → management, the therapeutic method may well be selected on the basis of the symptom, and the diagnostic label chosen last. They suggest that the selection of the diagnostic label is therefore influenced by the management decision already made.

Crombie identified 'enormous variability in the rates at which doctors perceive and record illnesses'. He was unable to account statistically for this variation by the effect of geography, age, sex or class differences in the practice populations.<sup>43</sup> Differences in the way male and female GPs label problems also appear to be independent of such influences.<sup>44</sup>

These problems are inherent in the nature of general practice. Knottnerus argues that the GP is confronted with a fundamentally different pattern of problems from the medical specialist, and often has to draw up general diagnostic hypotheses related to probability, severity and consequences.<sup>45</sup> Anderson suggests that morbidity statistics from family practice should therefore be seen as 'a reflection of the physician's diagnostic opinions about the problems that patients bring to them rather than an unarguable statement of the problems managed'.<sup>42</sup>

While these findings regarding limitations in the reliability and validity of practitioner-recorded morbidity should be kept in mind, they apply equally to data drawn from health records, whether paper or electronic, as they do to active data collection methods.<sup>46,47</sup>

### 3 The samples

For annual response rates and measures of representativeness of individual annual GP samples, please see the annual report for each year in question (available at: <[sydney.edu.au/medicine/fmrc/publications/books/GP-series](http://sydney.edu.au/medicine/fmrc/publications/books/GP-series)>).

More detailed analyses of the samples in 2012–13 can be found in Chapter 3 in *General practice activity in Australia 2012–13*.<sup>1</sup>

Table 3.1 shows the number of encounter records contained in each year of the BEACH program since April 2003, and the size of the database for those 10 years for each variable (weighted), upon which all comparisons over time described in this report are based.

**Table 3.1: Annual summary of data sets, 2003–04 to 2012–13 (final weighted data)**

Variable	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	Total 10 years
General practitioners	1,000	953	1,017	930	953	1,011	988	958	984	978	9,772
Encounters	98,877	94,386	101,993	91,805	95,898	96,688	101,349	95,839	99,030	98,564	974,429
Reasons for encounter	148,521	141,215	153,309	138,434	146,696	151,282	157,071	149,005	153,218	152,278	1,491,029
Problems managed	144,674	137,330	149,088	136,333	145,078	149,462	155,373	146,141	152,286	152,517	1,468,282
Medications	103,210	95,816	106,493	93,193	98,439	102,737	108,001	100,817	106,007	101,065	1,015,778
Other treatments	50,775	51,632	44,504	41,011	49,130	49,048	53,243	50,235	53,395	53,163	496,136
Referrals & admissions	11,507	10,890	12,242	11,230	12,017	13,251	13,481	13,526	14,382	14,561	127,087
Pathology	34,831	34,652	39,358	38,963	41,375	44,066	45,594	43,313	46,544	46,398	415,094
Imaging	8,121	7,840	9,003	8,229	9,143	9,469	9,877	9,370	9,978	10,163	91,193

## 4 The participating GPs

### 4.1 Characteristics of the participating GPs

In BEACH, each GP participant completes a profile questionnaire about themselves and the major practice at which they are employed (see Appendix 2). Over the 10 years, the questions have occasionally been altered to improve the quality and clarity of the data collected, or to investigate topics not previously surveyed as they became relevant. Therefore, for some characteristics we have data over the full 10-year period, and for some, we have data over shorter periods.

In this chapter, statistical significance of change is tested with the  $\chi^2$  (chi-square) statistic, with a decision level of  $\alpha < 0.05$ . More detailed analyses of the participating GPs in 2012–13 can be found in Chapter 4 in *General practice activity in Australia 2012–13*.<sup>1</sup>

Over the period 2003–04 to 2012–13 some trends emerged in the characteristics of GP BEACH participants (Table 4.1). The most noticeable changes over the 10 years are listed below and some are presented in Figure 4.1.

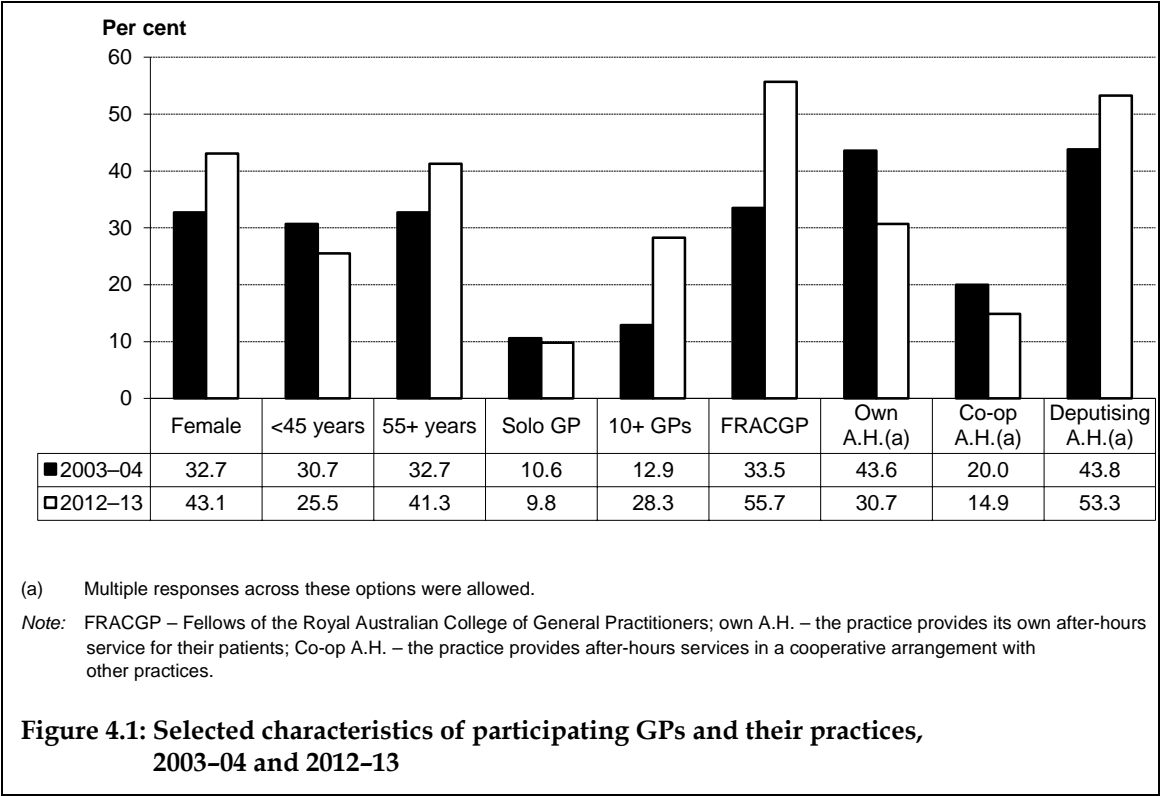
- The feminisation of the general practice workforce is reflected in the growing proportion of GP participants who are female. The proportion of female participants increased from 32.7% in 2003–04 to 43.1% in 2012–13. This change reflects change in the sex distribution of all recognised GPs claiming more than 375 general practice Medicare items of service in the previous quarter (33.4% in 2003–04<sup>48</sup> and 40.2% in 2012–13), as provided each year by DoHA, from Medicare claims data. In Table 4.1, there was a ‘spike’ in the proportion of female GPs among the participating sample in 2009–10. As previously reported, this was the result of female GPs being over-represented in the sample provided by DoHA when compared with the national sample frame (as may occasionally happen in the random sampling process).<sup>13</sup>
- From 2003–04 to 2012–13 there was a significant change in the age distribution of participants, with a decrease in the proportion aged 35–44 years (from 24.9% to 17.0%), and an increase in the proportion aged 55 years and over (from 32.7% to 41.3%). Again, these changes reflect the changes in the practising GP population (as defined for BEACH) from Medicare claims data, in which the proportion aged 35–44 years decreased from 25.8%<sup>49</sup> to 20.4%, and the proportion aged 55 years or more increased from 30.0%<sup>49</sup> to 42.1%. The mean age of GP participants in 2003–04, was 50.5 years (median of 50 years) while in 2012–13, it was 51.5 years (median of 52 years).
- The ageing workforce was reflected in the increasing proportion of GPs who had worked in general practice for 20 years or longer, from 54.6% in 2003–04 to 59.4% in 2012–13.
- There was a significant increase in the proportion of GPs working 21–40 hours per week in direct patient care (from 42.4% in 2003–04 to 55.4% in 2012–13), and a significant decrease in the proportion working 41–60 hours (42.3% in 2003–04 to 31.2% in 2012–13), the dramatic drop occurring in 2009–10 (from 40.2% to 30.8%). The proportion working more than 60 hours per week in direct patient care also steadily decreased (from 4.9% to 1.9%). When the last two results are combined, there was a decrease from 47.2% of participants working more than 40 hours per week in direct patient care in 2003–04 to 33.1% working these hours in 2012–13. There was a significant decrease in the mean number of hours spent in direct patient care from 40.5 hours in 2003–04 to 37.6 hours in 2012–13. This has implications for workforce planning.

- There was a significant decrease over the decade in the proportion of Australian GPs who had gained their primary medical degree in Australia, from 73.6% in 2003–04 to 66.2% in 2012–13. There were also significant changes in the geographic distribution of country of graduation for those trained overseas.
- The proportion of GP participants holding Fellowship of the RACGP significantly increased, from 33.5% in 2003–04 to 55.7% in 2012–13. Since 1995, Fellowship of the RACGP has been mandatory for new clinicians entering general practice, so this change reflects the inclusion of new GPs into practice who hold FRACGP.

## 4.2 Characteristics of participants' major practice

From 2003–04 to 2012–13, some trends emerged in the characteristics of the GP participants' major practices (Table 4.2). The most noticeable changes over the 10 years are listed below.

- The proportion of participants in solo practice, and the proportion in smaller practices of 2–4 GPs significantly decreased. There was an associated significant increase in the proportion working in practices of 10 or more individual GPs (from 12.9% in 2003–04 to 28.3%). Data were not available for 2007–08 and 2008–09, as the question was altered to capture full-time equivalent GPs at the practice instead of number of individuals. However from 2009–10, both data elements were captured.
- There was a significant reduction in the proportion of GPs working in practices that provide their own after-hours services (from 43.6% to 30.7%), and in the proportion at practices providing these services in cooperation with other practices (from 20.0% to 14.9%). However, the proportion of GPs working in practices using a deputising service for after-hours care provision increased significantly, from 43.8% in 2003–04 to 53.3% in 2012–13. Multiple responses were allowed to this question.
- The proportion of GPs with a computer available at their major practice increased significantly from 95.1% in 2003–04 to 97.8% in 2012–13. Actual use of the computer has only been collected since 2004–05. From that time, the proportion of GPs indicating that they use a computer to some extent in their clinical activity (89.0%) significantly increased to 96.2% in 2012–13.



**Figure 4.1: Selected characteristics of participating GPs and their practices, 2003-04 and 2012-13**

**Table 4.1: Characteristics of participating GPs, 2003–04 to 2012–13**

GP characteristic	Per cent of participating GPs <sup>(a)</sup>										
	2003–04 (n = 1,000)	2004–05 (n = 953)	2005–06 (n = 1,017)	2006–07 (n = 930)	2007–08 (n = 953)	2008–09 (n = 1,011)	2009–10 (n = 988)	2010–11 (n = 958)	2011–12 (n = 984)	2012–13 (n = 978)	
Sex ( $\chi^2_9 = 71.0, p < 0.0001$ ) (missing n)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	
Male	67.3	67.9	62.8	65.9	63.2	67.5	56.4	61.7	59.2	56.9	
Female	32.7	32.1	37.2	34.1	36.8	32.5	43.6	38.3	40.8	43.1	
Age ( $\chi^2_{27} = 164.7, p < 0.0001$ ) (missing n)	(1)	(1)	(18)	(11)	(8)	(4)	(6)	(6)	(5)	(8)	
< 35 years	5.8	9.0	4.7	6.8	7.8	2.6	7.1	6.5	6.6	8.5	
35–44 years	24.9	25.5	22.2	22.6	22.2	14.0	21.4	16.7	19.4	17.0	
45–54 years	36.5	31.8	34.3	35.6	36.4	37.5	36.7	34.7	32.9	33.2	
55+ years	32.7	33.6	38.7	35.0	33.5	45.9	34.8	42.1	41.1	41.3	
Mean GP age	50.5 (49.9–51.2)	49.9 (49.2–50.6)	51.5 (50.8–52.1)	50.7 (50.0–51.4)	50.0 (49.4–50.7)	53.7 (53.1–54.3)	50.5 (49.8–51.1)	52.4 (51.7–53.0)	51.9 (51.2–52.6)	51.5 (50.8–52.2)	
Years in general practice ( $\chi^2_{36} = 266.9, p < 0.001$ ) (missing n)	(9)	(5)	(13)	(13)	(7)	(6)	(7)	(8)	(5)	(11)	
< 2 years	1.3	0.4	0.6	0.6	0.6	0.1	1.1	1.0	1.4	2.6	
2–5 years	5.4	10.3	4.9	7.9	9.9	3.4	8.9	8.5	10.4	10.9	
6–10 years	10.7	12.6	12.1	11.1	12.9	5.7	12.3	9.9	11.1	9.9	
11–19 years	28.1	25.4	24.0	23.5	20.6	19.3	23.3	16.3	18.6	17.2	
20+ years	54.6	51.3	58.5	57.0	55.9	71.5	54.3	64.3	58.4	59.5	
Currently in a GP training program (missing n) ( $\chi^2_{29} = 39.1, p < 0.0001$ )	(14)	(10)	(13)	(13)	(4)	(8)	(6)	(8)	(9)	(8)	
Fellow of RACGP (missing n) ( $\chi^2_9 = 215.3, p < 0.0001$ )	4.4	3.5	2.6	2.9	2.9	1.5	3.6	3.2	3.9	3.1	
	(10)	(9)	(14)	(6)	(5)	(7)	(4)	(4)	(3)	(6)	
	33.5	42.3	40.7	46.3	50.2	39.7	53.5	52.1	56.8	55.7	

(continued)

Table 4.1 (continued): Characteristics of participating GPs, 2003-04 to 2012-13

GP characteristic	Per cent of participating GPs <sup>(a)</sup>										
	2003-04 (n = 1,000)	2004-05 (n = 953)	2005-06 (n = 1,017)	2006-07 (n = 930)	2007-08 (n = 953)	2008-09 (n = 1,011)	2009-10 (n = 988)	2010-11 (n = 958)	2011-12 (n = 984)	2012-13 (n = 978)	
Direct patient care hours per week ( $\chi^2_{36} = 143.7, p < 0.0001$ ) (missing n)											
≤ 10	0.4	0.3	0.8	1.0	0.3	0.3	0.3	0.6	1.2	1.5	
11-20	10.0	8.7	9.8	11.3	8.7	7.3	10.3	8.7	12.2	10.1	
21-40	42.4	49.2	47.1	47.9	52.4	49.5	56.2	54.0	53.0	55.4	
41-60	42.3	37.9	39.0	36.9	36.6	40.2	30.8	34.2	32.1	31.2	
61+	4.9	3.9	3.4	2.9	1.9	2.7	2.4	2.4	1.4	1.9	
Mean direct patient care hours per week	40.5 (39.7-41.1)	39.8 (39.0-40.6)	39.1 (38.2-39.9)	38.4 (37.6-39.3)	38.7 (37.9-39.5)	39.4 (38.7-40.1)	37.8 (37.0-38.6)	38.4 (37.6-39.2)	36.9 (36.1-37.7)	37.6 (36.7-38.4)	
Place of graduation <sup>(b)</sup> ( $\chi^2_{54} = 87.7, p = 0.0025$ ) (missing n)											
Australia	(1)	(1)	(5)	(1)	(3)	(2)	(1)	(3)	(1)	(3)	
Overseas	73.6	69.9	72.0	73.6	73.5	74.3	70.6	69.2	67.2	66.2	
Asia	26.4	30.2	28.0	26.4	26.5	25.7	29.4	30.8	32.8	33.8	
United Kingdom/Ireland	9.5	10.9	10.9	10.1	9.8	8.3	9.8	12.2	12.5	11.7	
Africa and Middle East	7.2	7.6	8.1	7.3	6.8	10.3	8.8	7.4	8.1	9.2	
Europe	5.4	5.4	4.5	5.1	4.3	3.8	5.2	5.8	5.6	6.4	
New Zealand	2.3	3.8	2.1	1.7	2.6	1.9	2.0	2.9	3.4	3.0	
Other	1.0	1.3	1.9	1.4	1.4	1.1	1.9	1.4	1.6	2.2	
	1.0	1.3	0.6	0.8	1.6	0.3	1.6	1.2	1.5	1.4	

(continued)

**Table 4.1 (continued): Characteristics of participating GPs, 2003-04 to 2012-13**

GP characteristic	Per cent of participating GPs <sup>(a)</sup>										
	2003-04 (n = 1,000)	2004-05 (n = 953)	2005-06 (n = 1,017)	2006-07 (n = 930)	2007-08 (n = 953)	2008-09 (n = 1,011)	2009-10 (n = 988)	2010-11 (n = 958)	2011-12 (n = 984)	2012-13 (n = 978)	
Consultations in languages other than English <sup>(c)</sup> ( $\chi^2_{24} = 39.9, p = 0.02$ )	(6)	(1)	(9)	(0)	(4)	(3)	(3)	(5)	(3)	..	
< 25%	17.8	21.7	20.9	18.1	20.4	17.6	18.5	21.9	21.7	NAV	
25-50%	2.9	2.4	3.6	1.6	3.1	3.5	3.6	2.9	2.9	NAV	
> 50%	2.4	3.4	3.5	2.9	3.6	3.0	1.8	1.9	2.8	NAV	

(a) Missing data moved. Number of missing data is presented in parentheses.

(b) For this variable  $p = 0.006$  – significant change when comparing Australia with all overseas countries combined;  $p = 0.0036$  – significant change in the distribution of overseas countries in which GPs had graduated from their primary medical degree.

(c) Data for all three groupings only available from 2003-04 onward.

Note: RACGP – Royal Australian College of General Practitioners; NAV – not available.



**Table 4.2: Characteristics of practices in which participating GPs worked, 2003-04 to 2012-13**

GP characteristic	Per cent of participating GPs <sup>(a)</sup>										
	2003-04 (n = 1,000)	2004-05 (n = 953)	2005-06 (n = 1,017)	2006-07 (n = 930)	2007-08 (n = 953)	2008-09 (n = 1,011)	2009-10 (n = 988)	2010-11 (n = 958)	2011-12 (n = 984)	2012-13 (n = 978)	
Practice location by RRMA ( $\chi^2_{54} = 83.2, p = 0.0065$ ) (missing n)											
Capital	(2) 62.4	(1) 64.9	(0) 68.8	(0) 63.9	(1) 67.8	(0) 66.8	(0) 62.4	(0) 64.1	(5) 66.3	(0) 63.1	
Other metropolitan	6.4	6.7	6.8	7.3	7.0	10.0	8.5	6.1	7.6	7.8	
Large rural	7.0	5.4	5.9	7.9	6.9	5.5	7.3	6.2	6.7	7.8	
Small rural	7.0	6.9	6.0	5.4	4.7	6.1	7.1	7.2	7.1	6.4	
Other rural	14.2	13.0	11.1	13.6	11.3	10.3	13.3	14.8	10.6	13.5	
Remote central	0.9	1.3	0.5	1.0	0.7	0.4	0.4	0.8	0.6	0.7	
Other remote, offshore	2.0	1.8	0.9	1.1	1.5	0.9	1.1	0.8	1.1	0.7	
Practice location by ASGC ( $\chi^2_{36} = 45.9, p = 0.12$ ) (missing n)											
Major cities	(2) 65.4	(2) 67.6	(0) 72.1	(0) 66.3	(1) 72.2	(0) 73.4	(0) 69.2	(0) 69.2	(5) 71.5	(0) 68.8	
Inner regional	21.8	20.1	18.8	22.7	17.4	18.0	20.2	20.6	18.9	19.2	
Outer regional	10.1	10.1	7.8	9.4	8.6	7.2	9.1	8.8	8.1	10.5	
Remote	1.6	1.5	0.8	1.3	1.3	0.9	1.1	1.2	0.9	1.0	
Very remote	1.0	0.7	0.6	0.3	0.5	0.5	0.3	0.3	0.6	0.4	
Size of practice – number of GPs ( $\chi^2_{21} = 188.0, p < 0.0001$ ) (missing n)											
Solo	(10) 10.6	(6) 12.3	(9) 13.1	(6) 8.2	.. NAV	.. NAV	(11) 9.2	(12) 10.8	(16) 10.7	(28) 9.8	
2-4 GPs	37.8	36.4	35.2	35.7	NAV	NAV	30.0	28.4	26.6	23.3	
5-9 GPs	38.7	37.7	38.4	40.3	NAV	NAV	41.4	38.6	42.3	38.6	
10+ GPs	12.9	13.6	13.3	15.8	NAV	NAV	19.5	22.2	20.5	28.3	

(continued)

**Table 4.2 (continued): Characteristics of practices in which participating GPs worked, 2003-04 to 2012-13**

GP characteristic	Per cent of participating GPs <sup>(a)</sup>											
	2003-04 (n = 1,000)	2004-05 (n = 953)	2005-06 (n = 1,017)	2006-07 (n = 930)	2007-08 (n = 953)	2008-09 (n = 1,011)	2009-10 (n = 988)	2010-11 (n = 958)	2011-12 (n = 984)	2012-13 (n = 978)		
Size of practice – full-time equivalents ( $\chi^2_{12} = 62.7, p < 0.0001$ ) (missing n)	..	..	..	..	(23)	(8)	(51)	(40)	(111)	(136)		
< 2	NAV	NAV	NAV	NAV	17.6	19.6	15.2	17.2	13.7	11.9		
2 < 5 GPs	NAV	NAV	NAV	NAV	41.2	42.9	48.9	43.6	43.5	39.0		
5 < 10 GPs	NAV	NAV	NAV	NAV	31.9	29.4	28.8	29.6	34.7	38.2		
10+ GPs	NAV	NAV	NAV	NAV	9.3	8.1	7.2	9.6	7.9	10.9		
After-hours arrangements <sup>(b)</sup> (missing n)	(5)	(8)	(14)	(3)	(6)	(6)	(2)	(4)	(7)	(5)		
Practice does its own ( $\chi^2_9 = 80.3, p < 0.0001$ )	43.6	35.9	34.6	34.6	33.2	28.9	29.1	29.8	30.6	30.7		
Cooperative with other practices ( $\chi^2_9 = 28.0, p = 0.0009$ )	20.0	16.2	15.7	15.5	14.6	15.1	17.8	14.3	12.5	14.9		
Deputising service ( $\chi^2_9 = 59.6, p < 0.0001$ )	43.8	45.8	50.8	48.1	49.5	57.9	53.1	52.1	53.0	53.3		
Computer available at practice <sup>(c)</sup> ( $\chi^2_7 = 44.7, p < 0.0001$ ) (missing n)	(6)	(14)	(19)	(0)	(7)	NAV	NAV	(1)	(0)	(4)		
Computer use by individual GPs <sup>(d)</sup> ( $\chi^2_7 = 108.6, p < 0.0001$ ) (missing n)	95.1	93.7	94.5	96.6	96.7	NAV	NAV	98.0	96.8	97.8		
	NAV	(54)	(60)	(71)	(63)	(3)	(1)	(1)	(0)	(4)		
	NAV	89.0	91.5	93.7	94.2	94.6	97.7	95.6	95.9	96.2		

(a) Missing data removed. Number of missing data is presented in parentheses.

(b) Multiple responses were allowed.

(c) Data refer to computer use at the major practice and may not reflect the use of computers by individual GPs for clinical and/or administrative purposes.

(d) Data refer to computer use by individual GPs.

Note: NAV – not available; RRMA – Rural, Remote and Metropolitan Areas classification; ASGC – Australian Standard Geographical Classification.

## 5 The encounters

This chapter includes details about the encounters in general practice from each of the most recent 10 years of the BEACH study from 2003–04 to 2012–13. The direction and type of change from 2003–04 to 2012–13 is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

Significant changes in rates per 100 encounters can be extrapolated to estimate the national increase or decrease in the measured event between 2003–04 and 2012–13. Some examples of extrapolated change are provided. The method used to extrapolate to national change estimates is described in Section 2.9. More detailed analyses of the GP–patient encounters in 2012–13 can be found in Chapter 5 in *General practice activity in Australia 2012–13*.<sup>1</sup>

### 5.1 Content of the encounters

Table 5.1 provides an overview of the changes over time from data in BEACH between 2003–04 and 2012–13. The number of patient reasons for encounter recorded by the GP increased significantly over the decade, from 150.2 RFEs per 100 encounters in 2003–04 to 154.5 per 100 encounters in 2012–13. Changes in types of RFEs are reported in Chapter 6.

The rate of problems managed increased from 146.3 per 100 encounters in 2003–04 to 154.7 per 100 encounters in 2012–13. This represents an additional 55 million problems managed in general practice in 2012–13 than a decade earlier. There was also a marginal increase in the rate of chronic problem management, from 51.9 per 100 encounters in 2003–04 to 55.7 per 100 in 2012–13. This represents an estimated additional 20.6 million chronic problems managed in general practice nationally in 2012–13 than in 2003–04. Further details about changes in the types of problems managed are presented in Chapter 7.

The changes in management actions described below are measured in terms of rates per 100 encounters. As there was a significant increase in the number of problems managed at encounters, it may be more informative to consider changes in management actions in terms of rates per 100 problems managed as described in Chapters 8 to 12, inclusive.

There was no change in the rate of medications recorded per 100 encounters over the decade. Specific changes in the types of medications recorded are detailed in Chapter 9.

There was a significant increase in the number of procedural treatments performed in general practice between 2003–04 and 2012–13, from 14.7 per 100 encounters to 17.4 per 100 encounters. This increase represents an additional 7.9 million procedures performed in 2012–13 compared with a decade earlier. More detail can be found in Chapter 10.

Between 2003–04 and 2004–05 there was no change in the rate of clinical treatments (such as advice and counselling), but the rate then dropped dramatically from 39.2 per 100 encounters in 2004–05 to 29.2 per 100 encounters in 2005–06. It then gradually increased, and in 2012–13 was 36.5 per 100 encounters, no different from the 2003–04 rate. This pattern was reflected in the fluctuation of the total of other treatments (of which clinical treatments are the major component). These changes are described in further detail in Chapter 10.

Referrals increased over the decade 2003–04 to 2012–13, from 11.6 per 100 encounters to 14.8 per 100. This represented 7.6 million more referrals nationally in 2012–13 than a decade earlier. The increase was reflected in increased referrals to medical specialists and to allied health services and is described further in Chapter 11.

Orders for pathology and imaging tests also increased significantly between 2003–04 and 2012–13. These changes are reported in greater detail in Chapter 12.

## 5.2 Medicare/DVA–claimable encounters

Table 5.2 provides a summary of Medicare/DVA-claimable encounters recorded in BEACH, expressed as a proportion of all Medicare/DVA-claimable encounters. Between 2003–04 and 2004–05, only one item number was recorded on the BEACH encounter form. In 2005–06 this increased to three items, to capture practice nurse item numbers and other additional information about the Medicare items used in general practice.

To allow comparability of data over time, only one item number per Medicare/DVA-claimable item per encounter is counted in Table 5.2. The selection of one item number per encounter was based on priority whereby: consultation item numbers override Practice Incentives Program payment item numbers, which override procedural item numbers, which override other Medicare item numbers. Table 5.2 includes only items claimed by GPs (excluding items claimed for practice nurses etc.) and shows that:

- short surgery consultations increased significantly from 1.1% of Medicare/DVA-claimable encounters in 2003–04 to 1.7% in 2012–13. Previous research suggests that part of this increase is related to increasing practice nurse involvement in GP–patient encounters<sup>50</sup>
- the proportion of long surgery consultations did not change overall. However, after peaking at 10.5% in 2004–05, the proportion remained steady until 2007–08 then dropped significantly in 2008–09 and in 2012–13 represented 9.4% of Medicare/DVA-claimable encounters
- the proportion of encounters claimable under chronic disease management items, GP mental healthcare items, health assessments and incentive payments all significantly increased.

In May 2010 changes were made to the Medicare Benefits Schedule (MBS) that combined the existing Medicare items for home visits, consultations at hospitals and consultations at other institutions.<sup>51</sup> Unfortunately, this change no longer allows a discrete measure of GP home visit frequency through MBS. To allow the comparison of changes over time we have applied this change to all previous years in the decade, and now report a single line for ‘Home and institution visits’. There was a significant decrease in the proportion of home and institution visits (together) from 1.8% to 1.0% between 2003–04 and 2012–13. This equates to 500,000 fewer home and institutional visits carried out by GPs in 2012–13 than in 2003–04.

## 5.3 Consultation length

In a subsample of consultations, start and finish times were recorded. There was no significant change in the mean length of consultation between 2003–04 and 2012–13 for A1 Medicare/DVA-claimable encounters, nor for all Medicare/DVA-claimable encounters (Table 5.3).

**Table 5.1: Summary of morbidity and management, 2003-04 to 2012-13**

Variable	Rate per 100 encounters (95% CI)											2012-13 (n = 98,564)	↑ ↓ <sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,888)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13			
Reasons for encounter	150.2 (148.4-152.0)	149.6 (147.8-151.5)	150.3 (148.4-152.2)	150.8 (148.9-152.7)	153.0 (151.1-154.8)	156.5 (154.7-158.2)	155.0 (153.1-156.8)	155.5 (153.5-157.5)	154.7 (152.8-156.7)	154.5 (152.7-156.3)	154.5 (152.7-156.3)	↑	
Problems managed	146.3 (144.4-148.2)	145.5 (143.6-147.4)	146.2 (144.2-148.2)	148.5 (146.4-150.6)	151.3 (149.2-153.4)	154.6 (152.6-156.5)	153.3 (151.1-155.5)	152.5 (150.2-154.7)	153.8 (151.4-156.1)	154.7 (152.5-157.0)	154.7 (152.5-157.0)	↑	
New problems	55.9 (54.5-57.3)	55.2 (53.8-56.5)	56.9 (55.5-58.2)	56.5 (55.1-57.9)	57.7 (56.3-59.1)	57.4 (56.0-58.7)	59.1 (57.6-60.5)	57.8 (56.4-59.3)	58.6 (57.1-60.0)	57.3 (55.7-58.8)	57.3 (55.7-58.8)	—	
Chronic problems	51.9 (50.2-53.7)	51.8 (50.1-53.5)	52.2 (50.3-54.1)	53.4 (51.7-55.1)	54.1 (52.2-56.0)	57.0 (55.2-58.7)	54.2 (52.3-56.2)	53.1 (51.2-55.0)	55.6 (53.6-57.7)	55.7 (53.7-57.8)	55.7 (53.7-57.8)	↑	
Work-related	NAV	3.1 (2.8-3.5)	2.8 (2.6-3.1)	2.9 (2.6-3.1)	2.8 (2.6-3.1)	2.8 (2.6-3.0)	2.5 (2.3-2.7)	2.5 (2.3-2.7)	2.6 (2.4-2.8)	2.4 (2.2-2.5)	2.4 (2.2-2.5)	↓	
Medications	104.4 (102.1-106.7)	101.5 (99.3-103.8)	104.4 (101.8-107.0)	101.5 (99.2-103.9)	102.7 (100.3-105.0)	106.3 (104.0-108.5)	106.6 (103.6-109.5)	105.2 (102.8-107.6)	107.0 (104.1-110.0)	102.5 (100.2-104.9)	102.5 (100.2-104.9)	—	
Prescribed	86.0 (83.6-88.5)	83.4 (81.2-85.6)	85.8 (83.3-88.4)	83.3 (81.0-85.5)	82.4 (80.3-84.6)	86.4 (84.1-88.6)	83.4 (80.6-86.2)	85.1 (82.9-87.3)	86.8 (84.0-89.7)	83.3 (81.0-85.5)	83.3 (81.0-85.5)	—	
GP-supplied	8.6 (7.6-9.6)	8.1 (7.3-8.8)	8.8 (8.2-9.5)	8.9 (8.2-9.6)	10.1 (9.5-10.7)	11.0 (10.2-11.8)	13.6 (12.7-14.6)	10.3 (9.5-11.2)	9.7 (8.9-10.5)	9.9 (9.1-10.7)	9.9 (9.1-10.7)	—	
Advised OTC	9.8 (9.0-10.5)	10.1 (9.2-10.9)	9.8 (9.0-10.5)	9.4 (8.7-10.1)	10.1 (9.3-10.9)	8.9 (8.3-9.4)	9.5 (8.7-10.3)	9.8 (9.0-10.5)	10.5 (9.7-11.3)	9.4 (8.4-10.3)	9.4 (8.4-10.3)	—	
Other treatments	51.4 (48.9-53.8)	54.7 (52.1-57.3)	43.6 (41.5-45.8)	44.7 (42.3-47.0)	51.2 (48.9-53.6)	50.7 (48.5-52.9)	52.5 (49.8-55.3)	52.4 (49.8-55.1)	53.9 (51.2-56.6)	53.9 (51.2-56.7)	53.9 (51.2-56.7)	—	
Clinical	36.6 (34.5-38.7)	39.2 (37.1-41.4)	29.2 (27.3-31.1)	29.5 (27.6-31.4)	34.5 (32.5-36.5)	34.0 (32.1-35.9)	35.0 (32.6-37.4)	35.5 (33.2-37.8)	37.0 (34.6-39.3)	36.5 (34.2-38.9)	36.5 (34.2-38.9)	§	
Procedural	14.7 (14.0-15.5)	15.5 (14.6-16.4)	14.4 (13.7-15.1)	15.2 (14.4-16.0)	16.7 (15.9-17.5)	16.7 (16.0-17.5)	17.5 (16.5-18.6)	16.9 (16.1-17.8)	16.9 (16.1-17.8)	17.4 (16.5-18.3)	17.4 (16.5-18.3)	↑	

(continued)

**Table 5.1 (continued): Summary of morbidity and management, 2003-04 to 2012-13**

Variable	Rate per 100 encounters (95% CI)												(a)
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)			
Referrals	11.6 (11.1-12.2)	11.5 (11.1-12.0)	12.0 (11.5-12.5)	12.2 (11.7-12.7)	12.5 (12.0-13.0)	13.7 (13.2-14.2)	13.3 (12.8-13.8)	14.1 (13.5-14.7)	14.5 (13.9-15.1)	14.8 (14.2-15.4)	↑		
Medical specialist	7.9 (7.5-8.2)	7.7 (7.4-8.1)	8.2 (7.8-8.5)	8.1 (7.7-8.4)	8.0 (7.6-8.3)	9.0 (8.7-9.3)	8.4 (8.1-8.8)	8.6 (8.2-9.0)	8.6 (8.2-8.9)	8.9 (8.5-9.3)	↑		
Allied health services	2.6 (2.4-2.8)	2.7 (2.5-2.9)	2.9 (2.7-3.1)	3.1 (2.9-3.3)	3.4 (3.2-3.7)	3.9 (3.6-4.1)	3.9 (3.7-4.2)	4.2 (3.9-4.5)	4.7 (4.4-5.0)	4.7 (4.4-5.0)	↑		
Hospital	0.6 (0.5-0.6)	0.5 (0.4-0.5)	0.4 (0.3-0.4)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	↓		
Emergency department	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.2)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.2-0.3)	↑		
Other referrals	0.4 (0.4-0.5)	0.4 (0.4-0.5)	0.4 (0.3-0.4)	0.5 (0.5-0.6)	0.5 (0.4-0.6)	0.3 (0.2-0.4)	0.4 (0.3-0.5)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	↑		
Pathology	35.2 (33.7-36.8)	36.7 (35.2-38.2)	38.6 (36.9-40.3)	42.4 (40.7-44.2)	43.1 (41.3-45.0)	45.6 (43.8-47.4)	45.0 (43.1-46.9)	45.2 (43.4-47.0)	47.0 (44.9-49.1)	47.1 (45.1-49.0)	↑		
Imaging	8.2 (7.8-8.6)	8.3 (8.0-8.6)	8.8 (8.4-9.2)	9.0 (8.6-9.3)	9.5 (9.2-9.9)	9.8 (9.4-10.2)	9.7 (9.3-10.1)	9.8 (9.4-10.2)	10.1 (9.6-10.5)	10.3 (9.9-10.8)	↑		
Other investigations	1.0 (0.9-1.1)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	1.1 (0.9-1.2)	1.0 (0.8-1.1)	1.0 (0.9-1.1)	0.7 (0.7-0.8)	0.7 (0.7-0.8)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	—		

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↑/↓ indicates a marginally significant change in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

Note: CI – confidence interval; NAV – not available; OTC – over-the-counter.

**Table 5.2: Distribution of MBS/DVA items (GP only) recorded as claimable, counting one item only per encounter, 2003–04 to 2012–13**

MBS/DVA consultation category	Percentage distribution of Medicare/DVA-claimable encounters (95% CI)											(a)
	2003–04 (n = 86,244)	2004–05 (n = 81,582)	2005–06 (n = 89,011)	2006–07 (n = 79,847)	2007–08 (n = 83,376)	2008–09 (n = 86,069)	2009–10 (n = 89,113)	2010–11 (n = 83,903)	2011–12 (n = 87,243)	2012–13 (n = 85,881)		
Short surgery consultations	1.1 (0.9–1.4)	1.0 (0.8–1.3)	1.0 (0.8–1.1)	1.1 (0.9–1.4)	1.2 (1.0–1.4)	1.6 (1.4–1.8)	2.2 (1.9–2.5)	2.3 (2.0–2.6)	1.9 (1.5–2.2)	1.7 (1.5–2.0)	↑	
Standard surgery consultations	82.4 (81.2–83.6)	82.3 (81.0–83.5)	83.7 (82.7–84.7)	83.3 (82.4–84.3)	82.1 (81.0–83.3)	83.9 (83.0–84.8)	82.0 (80.9–83.2)	82.6 (81.6–83.6)	81.8 (80.7–83.0)	80.6 (79.6–81.7)	–	
Long surgery consultations	9.7 (9.0–10.4)	10.5 (9.7–11.2)	9.8 (9.1–10.5)	10.0 (9.3–10.6)	9.9 (9.2–10.5)	7.7 (7.1–8.2)	8.3 (7.7–8.9)	7.8 (7.2–8.4)	8.5 (7.9–9.1)	9.4 (8.8–10.0)	§	
Prolonged surgery consultations	0.7 (0.5–0.9)	0.8 (0.6–0.9)	0.7 (0.5–0.8)	0.6 (0.5–0.7)	0.7 (0.5–0.8)	0.5 (0.3–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.7)	0.6 (0.5–0.7)	–	
Home and institution visits	1.8 (1.4–2.2)	1.2 (1.0–1.4)	1.4 (1.1–1.7)	1.2 (0.9–1.4)	1.1 (0.7–1.6)	1.1 (0.9–1.3)	1.0 (0.7–1.2)	1.2 (0.8–1.6)	0.7 (0.5–0.9)	1.0 (0.8–1.1)	↘	
Residential aged care facility	1.2 (0.9–1.4)	1.2 (0.8–1.6)	1.3 (0.9–1.6)	1.3 (1.0–1.6)	1.2 (0.9–1.5)	1.3 (1.0–1.5)	1.3 (0.9–1.6)	1.5 (1.2–1.9)	1.9 (1.2–2.5)	1.7 (1.3–2.2)	–	
Chronic disease management	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.3 (0.2–0.4)	0.4 (0.3–0.5)	0.5 (0.4–0.6)	0.9 (0.8–1.1)	1.0 (0.8–1.1)	1.0 (0.9–1.2)	1.3 (1.1–1.5)	1.4 (1.3–1.6)	↑	
GP mental health care	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.2 (0.2–0.3)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.2 (1.1–1.4)	1.2 (1.1–1.4)	1.4 (1.2–1.6)	1.5 (1.3–1.5)	↑	
Health assessment	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.3 (0.2–0.3)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.4 (0.3–0.5)	↑	
Incentive payments	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	↑	
Other items	2.7 (2.0–3.5)	2.6 (1.7–3.4)	1.6 (1.3–1.8)	1.4 (1.1–1.6)	1.9 (1.5–2.4)	1.5 (1.2–1.9)	2.1 (1.2–2.9)	1.3 (1.1–1.5)	1.4 (1.0–1.8)	1.4 (1.1–1.7)	↘	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↗↘ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑↘ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: Includes items that were recorded as claimable through the Medicare Benefits Schedule/Department of Veterans' Affairs (DVA), counting one item per encounter (See Chapter 2, Methods). CI – confidence interval; MBS – Medicare Benefits Schedule.

Table 5.3: Consultation length (minutes), 2003-04 to 2012-13

Variable	Consultation length (minutes)											↑ <sup>(a)</sup> ↓
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13		
<b>A1 Medicare/DVA items (A, B, C, D)<sup>(b)</sup></b>	<b>(n = 31,844)</b>	<b>(n = 30,683)</b>	<b>(n = 32,830)</b>	<b>(n = 33,758)</b>	<b>(n = 29,956)</b>	<b>(n = 33,025)</b>	<b>(n = 31,442)</b>	<b>(n = 30,099)</b>	<b>(n = 30,963)</b>	<b>(n = 32,454)</b>		
Mean	15.0 (14.7-15.3)	15.1 (14.8-15.4)	14.9 (14.6-15.1)	14.9 (14.7-15.2)	14.8 (14.6-15.1)	14.4 (14.2-14.6)	15.0 (14.7-15.2)	14.7 (14.4-15.0)	14.9 (14.6-15.1)	15.1 (14.9-15.4)		
Median	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0		
Mode	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		
Range	1-120	1-120	1-110	1-155	1-110	1-120	1-148	1-89	1-150	1-130		
<b>All Medicare/DVA-claimable encounters (GP items)</b>	<b>(n = 32,839)</b>	<b>(n = 31,510)</b>	<b>(n = 34,111)</b>	<b>(n = 35,201)</b>	<b>(n = 31,722)</b>	<b>(n = 34,783)</b>	<b>(n = 33,613)</b>	<b>(n = 32,257)</b>	<b>(n = 33,096)</b>	<b>(n = 34,928)</b>		
Mean	15.1 (14.9-15.4)	15.2 (14.9-15.5)	15.0 (14.7-15.2)	15.1 (14.8-15.3)	15.1 (14.8-15.3)	14.6 (14.4-14.9)	15.3 (15.0-15.5)	15.0 (14.8-15.3)	15.2 (15.0-15.5)	15.6 (15.3-15.8)		
Median	14.0	13.0	13.0	13.0	13.0	13.0	14.0	13.0	13.0	14.0		
Mode	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0		
Range	1-175	1-180	1-110	1-155	1-110	1-120	1-148	1-95	1-150	1-165		

(a) The direction and type of change is indicated for each result: — indicates there was no significant change in 2012-13 compared with 2003-04.

(b) A1 Medicare items – Group A includes: 3, 4, 13, 19, 20; Group B includes: 23, 24, 25, 33, 35; Group C includes: 36, 37, 38, 40, 43; Group D includes: 44, 47, 48, 50, 51.  
Note: DVA – Australian Government Department of Veterans' Affairs.



## 6 The patients

This chapter includes data about the patients who participated in the BEACH study, including their characteristics and their reasons for encounter (RFEs), from each of the most recent 10 years of the BEACH study from 2003–04 to 2012–13: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

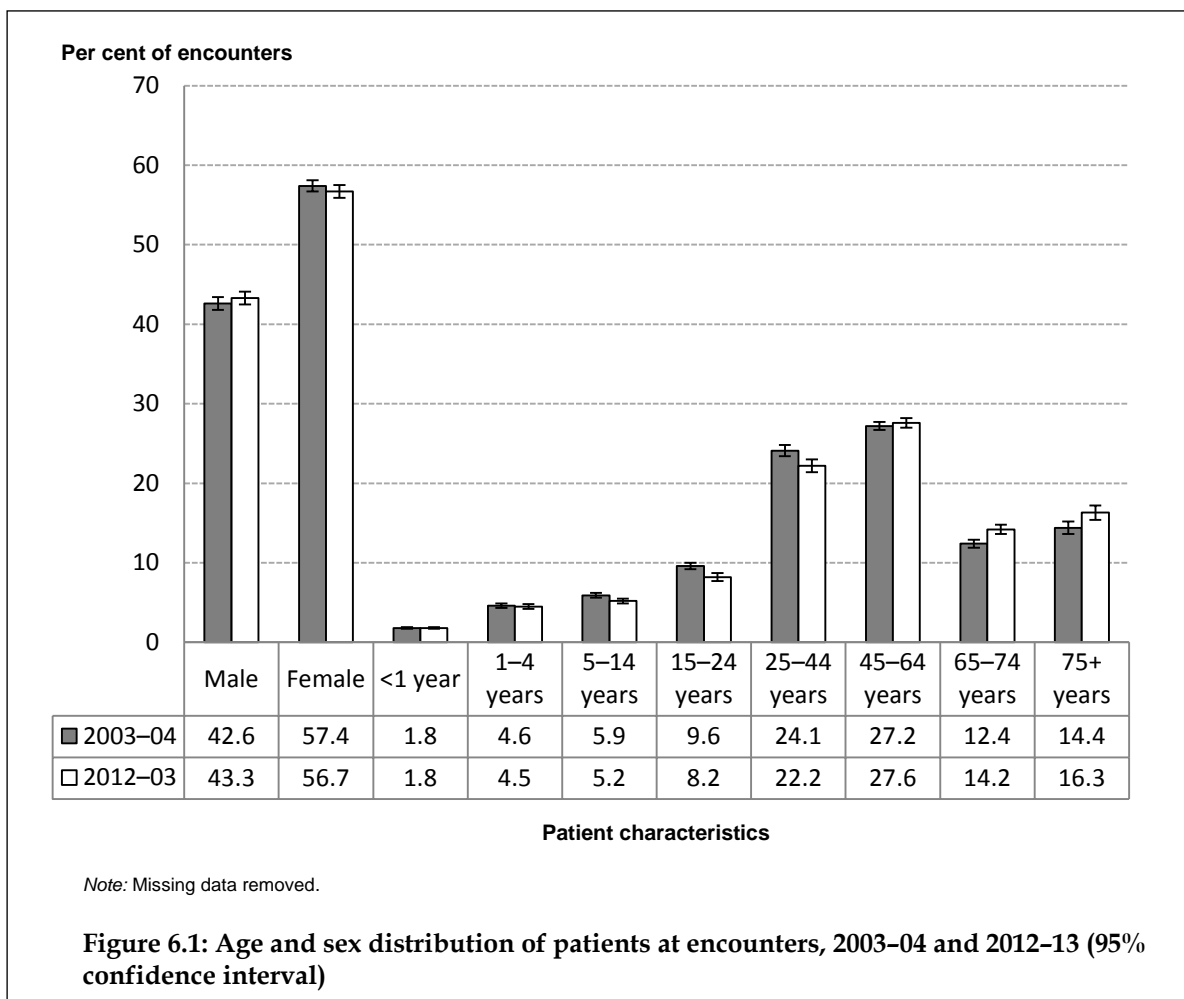
Significant changes in rates per 100 encounters can be extrapolated to estimate the national increase or decrease in the measured event between 2003–04 and 2012–13. In 2012–13, there were 30.5 million more encounters claimed through Medicare than there were in 2003–04 (126.8 million versus 96.3 million). It should be noted that because of this increase, a lower rate of events per 100 encounters could result in an increase in the estimated total number of events nationally. Some examples of extrapolated change are provided. The method used to extrapolate to national change estimates is described in Section 2.9.

### 6.1 Age and sex of patients at encounter

Figure 6.1 and Table 6.1 show the age and sex distribution of patients at BEACH encounters from 2003–04 to 2012–13. Over this period there was no significant change in the proportions of encounters with male and female patients. The proportion of encounters with patients aged less than 45 years decreased from 46.0% to 41.9%, while over the same period the proportion with patients aged 45 years and over increased from 54.0% to 58.1%. Specifically, the largest growth occurred in encounters with patients aged 65–74 years and the largest decrease was in encounters with patients aged 25–44 years of age. When extrapolated, even with the increased number of encounters nationally, the number of encounters with patients aged less than 45 years only increased by about 8.8 million over the decade, while the number of encounters with patients aged 45 years and over increased by about 21.7 million nationally. The relationship between patient age, general practice attendance rates and the age distribution of the Australian population was investigated in Chapter 4 of *General practice in Australia, health priorities and policies 1998 to 2008*.<sup>52</sup>

### 6.2 Other patient characteristics

Over the decade there was a significant decrease in the proportion of encounters that were with patients new to the practice (from 9.3% in 2003–04 to 7.2% in 2012–13). The proportion of encounters with patients holding a Commonwealth concession card was relatively stable across the decade. Between 2003–04 and 2012–13, the proportion of encounters with patients holding a Repatriation Health Card decreased by one-third (3.9% to 2.3%). There was no significant change in the proportion of encounters that were with patients from a non-English-speaking background or with Indigenous patients (Table 6.1).



### 6.3 Patient reasons for encounter

Reasons for encounter (RFEs) are those concerns and expectations patients bring to the GP. RFEs reflect the patient’s demand for care, and can provide an indication of service use patterns that may benefit from intervention at a population level.

Participating GPs were asked to record at least one, and up to three, patient RFEs in words as close as possible to those used by the patient, before the diagnostic or management process had begun. RFEs can be expressed in terms of one or more symptoms (for example, ‘itchy eyes’, ‘chest pain’), in diagnostic terms (for example, ‘about my diabetes’, ‘for my hypertension’), a request for a service (‘I need more scripts’, ‘I want a referral’), an expressed fear of disease, or a need for a check-up.

Patient RFEs can have a one-to-one, one-to-many, many-to-one or many-to-many relationship to problems managed. That is, the patient may describe a single RFE that relates to a single problem managed at the encounter, a single RFE that relates to multiple problems, multiple symptoms that relate to a single problem managed at the encounter, or multiple RFEs that relate to multiple problems managed at the encounter. GPs may also manage a problem that was unrelated to the patient’s RFE (for example, a patient presents about their diabetes but while they are there the GP also provides an immunisation and performs a Pap smear).

## Number of reasons for encounter

Table 6.2 shows that between 2003–04 and 2012–13 there was a significant decrease in the proportion of encounters involving a single RFE, from 61.0% to 58.0% in 2012–13, and an increase in the proportion with two or three RFEs over the decade. The proportion of encounters with two RFEs increased from 27.7% in 2003–04 to 29.4% of all encounters in 2012–13. The proportion of encounters with three RFEs increased from 11.3% in 2003–04 to 12.5% in 2012–13. Extrapolation of the effect of this change suggests there were about 15.7 million more encounters nationally where two or three RFEs were reported in 2012–13 than in 2003–04.

This increase in multiple RFEs encounters resulted in a significant increase in the overall rate of RFEs, from 150.2 per 100 encounters in 2003–04 to 154.5 per 100 encounters in 2012–13 (Tables 6.3 and 6.4). This increase, when extrapolated, equates to about 51.3 million more RFEs nationally in 2012–13 than in 2003–04.

## Reasons for encounter by ICPC-2 component

The distribution of patient RFEs by ICPC-2 component is presented in Table 6.3.

### Symptoms and diagnoses

- RFEs expressed in terms of a symptom or complaint (for example, ‘tired’, ‘feeling anxious’) were the most frequent in all years. However, their presentation rate significantly decreased, from 69.1 per 100 encounters in 2003–04 to 64.3 per 100 encounters in 2012–13.
- With one exception, the rate of RFEs relating to specific diagnoses (including infections, injuries, neoplasms, congenital anomalies, and other diagnoses) did not significantly change across the decade. The exception was a significant increase in the rate of other diagnoses RFEs, from 14.7 to 16.8 per 100 encounters.

### Processes of care

- Patient requests for diagnostic and preventive procedures (such as immunisation) significantly increased from 24.0 per 100 encounters in 2003–04 to 27.0 in 2009–10, then decreased to 24.6 per 100 encounters in 2012–13, a rate similar to the 2003–04 rate.
- Patient requests for medications, treatments and therapeutics (such as repeat prescriptions) did not significantly change across the decade.
- Presentations for test results increased by about 50%, from 6.0 to 9.1 per 100 encounters. When extrapolated, we estimate 5.8 million more encounters nationally with an RFE of this type in 2012–13 than a decade earlier.
- The rate of requests for an administrative procedure (such as a sickness certificate) increased by about 80%, from 1.8 to 3.2 per 100 encounters. This change equates to an estimated national increase of approximately 2.3 million more requests for an administrative procedure nationally in 2012–13 than in 2003–04.

## Reasons for encounter by ICPC-2 chapter

Table 6.4 shows that between 2003–04 and 2012–13,:

- the rate at which patients described RFEs of a general and unspecified nature increased by about 20%. When extrapolated to national estimates, this equates to about 21.4 million more general and unspecified RFEs in 2012–13 than in 2003–04.
- RFEs related to psychological problems increased by about 25%. This equates to approximately 4.8 million more RFEs related to psychological problems nationally in 2012–13 than in 2003–04. The increased role of GPs in the management of mental health was the focus of Chapter 14 in the book *General practice activity in Australia, health priorities and policies 1998 to 2008*<sup>52</sup>
- the rate at which patients presented RFEs relating to the blood system increased by about 30%. This is probably linked to increased INR testing (as discussed in Chapter 10)
- RFEs related to the male genital system and to social issues both increased marginally.

Table 6.4 also shows that between 2003–04 and 2012–13, there were significant decreases in:

- the rate of RFEs relating to digestive and circulatory problems but mainly over the last year. It will be interesting to see whether these decreases persist in the future
- the rate of RFE relating to the female genital system and neurological problems, both of which decreased by about 15%
- the rate of eye problem RFEs, decreasing by about one-quarter over the decade.

## Most frequent patient reasons for encounter

Table 6.5 shows that between 2003–04 and 2012–13:

- requests for a check-up (all types) significantly increased from 13.4 per 100 encounters in 2004–05 to 15.2 in 2008–09, then decreased to 13.1 per 100 encounters in 2012–13, a rate not significantly different from either the 2003–04 or 2004–05 rate
- the rate of presentations for immunisation/vaccination did not significantly change, except there was a significant spike in 2009–10 coinciding with the swine flu pandemic.

Over the decade there were significant increases in:

- requests for test results (by about 50%) and requests for blood tests (by nearly 40%)
- patient requests for administrative procedures (such as doctor's certificates) (by about 80%) and requests for a referral (by about 90%)
- patients presenting for depression and anxiety (by about 30% and 40% respectively). The increase in both these common psychological conditions probably explains the increase in the psychological chapter reported above, and may have resulted from the introduction of both the Better Outcomes and Better Access general practice mental health care initiatives<sup>53</sup>
- patients presenting for diabetes (by about 50%), equating to an extrapolated estimated 900,000 more encounters for diabetes in 2013–14 than a decade earlier
- patients presenting with shoulder symptoms or complaints (by about 30%).

From 2003–04 to 2012–13:

- there were significant decreases in the RFE rates for throat complaints (by about 25%), abdominal pain (20%), headache (about 25%), chest pain (not otherwise specified) (about 30%), vomiting (40%) and oral contraception (about 30%)
- there were marginally significant decreases in presentations for ear pain/earache, diarrhoea, vertigo/dizziness, and neck complaint.

**Table 6.1: Characteristics of patients at encounters, 2003-04 to 2012-13**

Patient characteristics	Rate per 100 encounters (95% CI)											↑ ↔ ↓ <sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Sex (missing n) <sup>(b)</sup>	(932)	(809)	(788)	(765)	(876)	(867)	(931)	(888)	(842)	(823)		
Male	42.6 (41.8-43.3)	43.5 (42.7-44.3)	44.0 (43.2-44.7)	43.7 (42.9-44.5)	42.9 (42.1-43.7)	42.4 (41.5-43.3)	43.1 (42.3-43.9)	42.9 (42.0-43.7)	43.5 (42.7-44.3)	43.3 (42.5-44.1)	—	
Female	57.4 (56.7-58.2)	56.5 (55.7-57.3)	56.0 (55.3-56.8)	56.3 (55.5-57.1)	57.1 (56.3-57.9)	57.6 (56.7-58.5)	56.9 (56.1-57.7)	57.1 (56.3-58.0)	56.5 (55.7-57.3)	56.7 (55.9-57.5)	—	
Age group (missing n) <sup>(b)</sup>	(905)	(925)	(769)	(779)	(784)	(704)	(781)	(771)	(793)	(825)		
< 1 year	1.8 (1.7-1.9)	1.9 (1.8-2.1)	2.1 (1.9-2.2)	1.8 (1.7-2.0)	2.0 (1.8-2.1)	2.0 (1.8-2.1)	2.1 (1.9-2.3)	1.8 (1.7-2.0)	1.8 (1.7-1.9)	1.8 (1.7-1.9)	—	
1-4 years	4.6 (4.3-4.8)	4.3 (4.0-4.7)	4.3 (4.0-4.5)	4.1 (3.9-4.4)	4.3 (4.1-4.6)	4.2 (4.0-4.4)	4.7 (4.5-5.0)	4.6 (4.3-4.9)	4.4 (4.2-4.7)	4.5 (4.2-4.8)	↓	
5-14 years	5.9 (5.6-6.3)	5.8 (5.5-6.1)	6.0 (5.7-6.3)	5.6 (5.3-5.9)	5.5 (5.2-5.8)	5.3 (5.1-5.6)	5.7 (5.4-6.0)	5.5 (5.2-5.8)	5.3 (5.1-5.6)	5.2 (4.9-5.5)	↓	
15-24 years	9.6 (9.2-10.1)	9.0 (8.6-9.4)	9.4 (9.0-9.8)	9.1 (8.6-9.5)	9.5 (9.0-9.9)	8.4 (8.0-8.9)	8.6 (8.2-9.0)	8.7 (8.3-9.1)	8.5 (8.1-8.9)	8.2 (7.7-8.6)	↓	
25-44 years	24.1 (23.4-24.8)	24.4 (23.7-25.1)	23.9 (23.2-24.7)	23.3 (22.6-24.0)	23.4 (22.7-24.1)	21.4 (20.7-22.1)	22.9 (22.1-23.6)	22.8 (22.0-23.5)	22.6 (21.7-23.4)	22.2 (21.4-23.1)	↓	
45-64 years	27.2 (26.7-27.7)	28.0 (27.4-28.6)	27.6 (27.0-28.2)	28.2 (27.6-28.7)	28.1 (27.5-28.6)	29.1 (28.5-29.6)	28.2 (27.7-28.8)	27.7 (27.1-28.2)	27.7 (27.1-28.3)	27.6 (27.0-28.2)	—	
65-74 years	12.4 (11.9-12.9)	12.6 (12.1-13.2)	12.2 (11.7-12.6)	12.7 (12.2-13.2)	12.6 (12.1-13.1)	13.4 (12.9-13.9)	12.7 (12.2-13.2)	13.3 (12.7-13.8)	13.4 (12.8-13.9)	14.2 (13.6-14.7)	↑	
75+ years	14.4 (13.6-15.2)	13.9 (13.1-14.7)	14.6 (13.7-15.4)	15.2 (14.4-16.0)	14.7 (13.9-15.5)	16.2 (15.4-17.0)	15.1 (14.3-16.0)	15.7 (14.8-16.6)	16.3 (15.3-17.3)	16.3 (15.4-17.3)	↑	

(continued)

**Table 6.1 (continued): Characteristics of patients at encounters, 2003–04 to 2012–13**

Patient characteristics	Rate per 100 encounters (95% CI)											<sup>(a)</sup> ↑ ↓
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Other characteristics <sup>(b)</sup>												
New patient to practice	9.3 (8.6–10.0)	9.1 (8.4–9.9)	9.1 (8.3–9.9)	8.7 (7.9–9.4)	8.6 (7.8–9.4)	5.9 (5.5–6.3)	7.7 (7.1–8.3)	7.3 (6.6–7.9)	7.9 (7.0–8.8)	7.2 (6.6–7.9)	↓	
Commonwealth concession card	46.6 (45.1–48.2)	47.5 (46.0–49.0)	45.4 (43.8–47.0)	45.4 (43.8–46.9)	45.5 (44.0–47.1)	45.7 (44.3–47.0)	45.9 (44.3–47.4)	44.9 (43.3–46.4)	44.7 (43.1–46.2)	46.0 (44.4–47.6)	—	
Repatriation Health Card	3.9 (3.6–4.2)	3.6 (3.3–3.8)	3.4 (3.1–3.6)	3.4 (3.2–3.7)	3.1 (2.8–3.3)	3.1 (2.9–3.4)	2.9 (2.7–3.2)	2.5 (2.3–2.7)	2.4 (2.2–2.7)	2.3 (2.1–2.5)	↓	
Non-English-speaking background	10.8 (8.7–12.8)	12.1 (10.1–14.1)	10.8 (9.0–12.5)	8.0 (6.5–9.5)	11.0 (9.2–12.8)	10.4 (8.7–12.1)	9.0 (7.3–10.6)	10.7 (8.9–12.5)	11.3 (9.4–13.2)	12.0 (10.0–14.0)	—	
Aboriginal person and/or Torres Strait Islander	1.8 (1.3–2.3)	1.5 (1.1–2.0)	1.0 (0.7–1.2)	1.0 (0.7–1.3)	1.0 (0.8–1.3)	0.9 (0.6–1.1)	1.3 (1.0–1.6)	1.2 (0.9–1.5)	1.6 (1.2–1.9)	1.5 (1.2–1.9)	—	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑ ↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

(b) Missing data removed.

Note: CI – confidence interval.

**Table 6.2: Number of patient reasons for encounter, 2003–04 to 2012–13**

Number of reasons for encounter	Rate per 100 encounters (95% CI)											<sup>(a)</sup> ↑ ↓
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 149,005)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
One RFE	61.0 (59.9–62.2)	61.4 (60.2–62.6)	60.9 (59.7–62.2)	60.6 (59.4–61.9)	58.9 (57.7–60.2)	56.6 (55.5–57.8)	57.7 (56.5–58.9)	57.6 (56.3–58.8)	57.9 (56.6–59.1)	58.0 (56.8–59.3)	↓	
Two RFEs	27.7 (27.0–28.4)	27.6 (26.9–28.3)	27.8 (27.1–28.5)	27.9 (27.2–28.7)	29.1 (28.5–29.8)	30.3 (29.6–30.9)	29.7 (29.0–30.4)	29.4 (28.7–30.1)	29.6 (28.9–30.3)	29.4 (28.7–30.1)	↑	
Three RFEs	11.3 (10.5–12.0)	11.0 (10.3–11.7)	11.2 (10.5–11.9)	11.4 (10.7–12.2)	11.9 (11.2–12.6)	13.1 (12.4–13.8)	12.6 (11.9–13.4)	13.0 (12.3–13.8)	12.6 (11.8–13.3)	12.5 (11.9–13.2)	↑	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑ ↓ indicates a statistically significant change, and — indicates no significant difference between 2003–04 and 2012–13.

Note: CI – confidence interval; RFE – reason for encounter.

**Table 6.3: Patient reasons for encounter by ICP-2 component, 2003–04 to 2012–13**

ICPC component	Rate per 100 encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 149,005)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Symptoms and complaints	69.1 (67.3–71.0)	68.7 (66.8–70.6)	67.0 (65.2–68.8)	65.2 (63.4–67.0)	65.1 (63.2–67.0)	66.3 (64.6–68.0)	65.0 (63.1–67.0)	66.8 (64.7–68.9)	66.6 (64.7–68.5)	64.3 (62.4–66.2)	↓	
Diagnosis, diseases	27.7 (26.4–28.9)	27.2 (26.0–28.4)	29.5 (28.0–30.9)	30.6 (28.9–32.2)	30.4 (28.9–32.0)	30.3 (28.8–31.8)	30.7 (29.1–32.3)	30.9 (29.4–32.4)	29.3 (27.8–30.8)	29.9 (28.4–31.4)	—	
Infections	7.4 (7.0–7.9)	7.0 (6.6–7.4)	8.3 (7.7–8.9)	8.1 (7.5–8.6)	7.9 (7.4–8.5)	7.9 (7.5–8.4)	8.0 (7.4–8.5)	7.7 (7.2–8.2)	7.3 (6.8–7.8)	7.6 (7.1–8.1)	—	
Injuries	4.3 (4.1–4.6)	4.4 (4.2–4.6)	4.4 (4.2–4.7)	4.3 (4.1–4.5)	4.5 (4.3–4.7)	4.3 (4.1–4.5)	4.6 (4.4–4.9)	4.4 (4.2–4.7)	4.4 (4.2–4.7)	4.2 (4.0–4.4)	—	
Neoplasms	1.0 (0.9–1.1)	0.9 (0.8–1.1)	1.0 (0.9–1.1)	1.2 (1.0–1.3)	1.2 (1.0–1.3)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.0 (0.9–1.2)	—	
Congenital anomalies	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	—	
Other diagnoses, diseases	14.7 (13.7–15.6)	14.6 (13.7–15.5)	15.4 (14.4–16.4)	16.7 (15.5–17.9)	16.5 (15.4–17.7)	16.8 (15.7–17.9)	16.8 (15.6–17.9)	17.4 (16.3–18.5)	16.4 (15.2–17.5)	16.8 (15.7–17.9)	↑	
Diagnostic and preventive procedures	24.0 (23.1–25.0)	23.4 (22.6–24.3)	24.3 (23.4–25.3)	24.8 (23.9–25.7)	25.6 (24.7–26.5)	26.9 (26.0–27.8)	27.0 (26.0–27.9)	25.1 (24.1–26.2)	24.6 (23.7–25.6)	24.6 (23.7–25.6)	§	
Medications, treatments and therapeutics	14.4 (13.7–15.1)	14.5 (13.8–15.3)	14.4 (13.7–15.1)	14.2 (13.5–14.8)	15.1 (14.3–15.8)	15.3 (14.6–15.9)	14.1 (13.4–14.8)	14.5 (13.8–15.2)	15.0 (14.2–15.8)	15.4 (14.7–16.2)	—	
Results	6.0 (5.7–6.4)	6.8 (6.4–7.2)	6.5 (6.1–6.9)	6.9 (6.5–7.3)	7.6 (7.2–8.1)	7.8 (7.4–8.2)	8.1 (7.7–8.6)	8.0 (7.5–8.5)	8.5 (8.1–9.0)	9.1 (8.6–9.5)	↑	
Referrals and other RFEs	7.2 (6.8–7.6)	7.3 (6.9–7.8)	6.9 (6.5–7.4)	7.3 (6.9–7.8)	6.8 (6.4–7.2)	7.5 (7.0–7.9)	7.6 (7.2–8.1)	7.5 (7.1–7.9)	7.7 (7.3–8.2)	8.1 (7.5–8.6)	—	
Administrative	1.8 (1.6–1.9)	1.7 (1.5–1.8)	1.7 (1.5–1.8)	1.8 (1.7–2.0)	2.3 (2.2–2.5)	2.4 (2.2–2.6)	2.4 (2.2–2.6)	2.6 (2.4–2.8)	2.9 (2.7–3.2)	3.2 (2.9–3.4)	↑	
<b>Total RFEs</b>	<b>150.2</b> <b>(148.4–152.0)</b>	<b>149.6</b> <b>(147.8–151.5)</b>	<b>150.3</b> <b>(148.4–152.2)</b>	<b>150.8</b> <b>(148.9–152.7)</b>	<b>153.0</b> <b>(151.1–154.8)</b>	<b>156.5</b> <b>(154.7–158.2)</b>	<b>155.0</b> <b>(153.1–156.8)</b>	<b>155.5</b> <b>(153.5–157.5)</b>	<b>154.7</b> <b>(152.8–156.7)</b>	<b>154.5</b> <b>(152.7–156.3)</b>	<b>↑</b>	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

Note: CI – confidence interval; RFE – reason for encounter.

Table 6.4: Patient reasons for encounter by ICP-2 chapter, 2003-04 to 2012-13

ICPC-2 chapter	Rate per 100 encounters (95% CI)												(a)
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 149,005)	2011-12 (n = 99,030)	2012-13 (n = 98,564)			
General & unspecified	36.2 (35.2-37.2)	36.5 (35.5-37.6)	36.3 (35.2-37.5)	37.7 (36.7-38.8)	40.1 (39.0-41.2)	40.7 (39.6-41.7)	42.7 (41.5-43.9)	41.0 (39.8-42.3)	42.2 (41.0-43.5)	44.4 (43.2-45.7)	↑	↑	
Respiratory	21.4 (20.6-22.2)	20.6 (19.7-21.4)	21.9 (21.1-22.7)	20.7 (19.9-21.6)	20.6 (19.8-21.5)	22.0 (21.2-22.9)	22.8 (21.9-23.8)	21.7 (20.9-22.6)	21.3 (20.3-22.2)	20.8 (19.9-21.7)	—	—	
Musculoskeletal	16.4 (15.8-16.9)	16.7 (16.0-17.3)	16.4 (15.8-16.9)	16.1 (15.6-16.6)	15.4 (14.9-15.9)	16.1 (15.5-16.6)	15.4 (14.7-16.2)	15.3 (14.9-15.8)	15.8 (15.3-16.3)	15.8 (15.2-16.3)	—	—	
Skin	15.1 (14.5-15.8)	15.6 (15.0-16.2)	15.0 (14.5-15.6)	15.7 (15.1-16.3)	15.4 (14.8-16.1)	15.1 (14.6-15.6)	14.8 (14.3-15.3)	15.3 (14.8-15.8)	15.1 (14.5-15.6)	15.0 (14.4-15.6)	—	—	
Digestive	10.7 (10.3-11.1)	9.9 (9.5-10.3)	9.9 (9.5-10.3)	10.1 (9.7-10.5)	10.3 (10.0-10.7)	9.8 (9.4-10.1)	9.8 (9.5-10.1)	10.2 (9.8-10.6)	10.2 (9.9-10.6)	9.5 (9.1-9.9)	↓	↓	
Psychological	7.3 (6.9-7.7)	7.6 (7.2-8.0)	7.8 (7.3-8.3)	7.4 (7.1-7.8)	7.8 (7.4-8.2)	8.6 (8.2-9.1)	8.4 (8.0-8.9)	9.0 (8.6-9.4)	8.9 (8.4-9.4)	9.3 (8.8-9.8)	↑	↑	
Circulatory	10.6 (10.1-11.2)	10.5 (10.0-11.0)	10.8 (10.2-11.3)	11.2 (10.7-11.8)	11.2 (10.6-11.8)	11.5 (10.9-12.0)	10.0 (9.5-10.5)	10.5 (10.0-11.1)	10.2 (9.6-10.7)	9.1 (8.7-9.6)	↓	↓	
Endocrine & metabolic	6.1 (5.8-6.5)	6.2 (5.8-6.5)	6.2 (5.8-6.5)	6.4 (6.1-6.8)	6.5 (6.1-6.8)	6.9 (6.5-7.3)	6.1 (5.8-6.4)	6.6 (6.2-6.9)	6.3 (5.9-6.6)	6.2 (5.9-6.6)	—	—	
Neurological	5.3 (5.1-5.6)	5.1 (4.9-5.4)	4.9 (4.7-5.2)	4.9 (4.7-5.2)	4.8 (4.6-5.0)	4.8 (4.6-5.0)	4.4 (4.1-4.6)	4.6 (4.4-4.9)	4.5 (4.3-4.8)	4.4 (4.2-4.6)	↓	↓	
Female genital system	5.1 (4.8-5.5)	5.0 (4.6-5.4)	5.1 (4.8-5.5)	5.1 (4.7-5.4)	5.2 (4.8-5.6)	5.3 (4.9-5.6)	4.7 (4.4-5.1)	5.0 (4.6-5.3)	4.8 (4.4-5.1)	4.4 (4.0-4.7)	↓	↓	
Ear	3.7 (3.5-3.9)	3.9 (3.7-4.1)	3.9 (3.7-4.1)	3.5 (3.4-3.7)	3.6 (3.4-3.8)	3.7 (3.5-3.9)	3.6 (3.4-3.8)	3.7 (3.5-3.9)	3.4 (3.3-3.6)	3.6 (3.4-3.7)	—	—	
Pregnancy & family planning	3.7 (3.4-3.9)	3.4 (3.2-3.6)	3.4 (3.1-3.6)	3.3 (3.0-3.6)	3.2 (3.0-3.5)	3.1 (2.8-3.3)	3.4 (3.2-3.7)	3.4 (3.1-3.7)	3.3 (3.1-3.6)	3.3 (3.0-3.5)	—	—	
Urology	2.5 (2.4-2.7)	2.5 (2.4-2.7)	2.6 (2.5-2.8)	2.6 (2.4-2.7)	2.5 (2.4-2.7)	2.7 (2.5-2.8)	2.6 (2.5-2.8)	2.7 (2.6-2.9)	2.6 (2.4-2.7)	2.7 (2.6-2.9)	—	—	

(continued)



Table 6.4 (continued): Patient reasons for encounter by ICP-2 chapter, 2003–04 to 2012–13

ICPC-2 chapter	Rate per 100 encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 149,005)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Eye	2.7 (2.6–2.8)	2.7 (2.6–2.9)	2.8 (2.6–2.9)	2.5 (2.4–2.7)	2.5 (2.4–2.6)	2.6 (2.4–2.7)	2.3 (2.2–2.5)	2.4 (2.3–2.6)	2.3 (2.1–2.4)	2.0 (1.9–2.2)	↓	
Blood	1.3 (1.1–1.4)	1.2 (1.1–1.4)	1.2 (1.0–1.3)	1.2 (1.1–1.4)	1.4 (1.2–1.5)	1.4 (1.3–1.6)	1.4 (1.2–1.5)	1.6 (1.4–1.8)	1.7 (1.5–1.8)	1.7 (1.5–1.9)	↑	
Male genital system	1.1 (1.0–1.1)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	1.2 (1.1–1.4)	1.3 (1.2–1.3)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	↑	
Social	0.9 (0.8–1.0)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.1 (1.0–1.2)	0.9 (0.9–1.0)	1.2 (1.1–1.3)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	1.1 (1.0–1.2)	↑	
<b>Total RFEs</b>	<b>150.2</b> <b>(148.4–152.0)</b>	<b>149.6</b> <b>(147.8–151.5)</b>	<b>150.3</b> <b>(148.4–152.2)</b>	<b>150.8</b> <b>(148.9–152.7)</b>	<b>153.0</b> <b>(151.1–154.8)</b>	<b>156.5</b> <b>(154.7–158.2)</b>	<b>155.0</b> <b>(153.1–156.8)</b>	<b>155.5</b> <b>(153.5–157.5)</b>	<b>154.7</b> <b>(152.8–156.7)</b>	<b>154.5</b> <b>(152.7–156.3)</b>	↑	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑↓ indicates a marginally significant change in 2012–13 compared with 2003–04; and — indicates there was no significant change in 2012–13 compared with 2003–04.

Note: CI – confidence interval; RFE – reason for encounter.

**Table 6.5: Most frequent patient reasons for encounter, 2003-04 to 2012-13**

Patient reason for encounter	Rate per 100 encounters (95% CI)												↑ <sup>(e)</sup> ↓
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 149,005)	2011-12 (n = 99,030)	2012-13 (n = 98,564)			
Check-up – all*	14.1 (13.4–14.8)	13.4 (12.8–14.0)	14.1 (13.4–14.8)	14.6 (13.9–15.2)	14.5 (13.8–15.1)	15.2 (14.5–15.8)	13.9 (13.3–14.5)	13.7 (13.0–14.3)	13.7 (13.0–14.3)	13.7 (13.0–14.3)	13.1 (12.4–13.7)	§	
Prescription – all*	12.1 (11.5–12.7)	12.2 (11.5–12.8)	12.0 (11.3–12.7)	11.8 (11.2–12.4)	12.5 (11.9–13.2)	12.6 (12.0–13.2)	11.6 (11.0–12.2)	12.0 (11.4–12.7)	12.6 (11.9–13.3)	12.6 (11.9–13.3)	12.7 (12.0–13.4)	–	
Test results*	6.0 (5.7–6.4)	6.8 (6.4–7.2)	6.5 (6.1–6.9)	6.9 (6.5–7.3)	7.6 (7.2–8.1)	7.8 (7.4–8.2)	8.1 (7.7–8.6)	8.0 (7.5–8.5)	8.5 (8.1–9.0)	8.5 (8.1–9.0)	9.1 (8.6–9.5)	↑	
Cough	6.2 (5.8–6.6)	5.9 (5.5–6.2)	6.4 (6.0–6.8)	5.8 (5.4–6.2)	6.2 (5.8–6.7)	6.8 (6.3–7.2)	6.9 (6.4–7.3)	6.7 (6.3–7.1)	6.7 (6.2–7.1)	6.7 (6.2–7.1)	6.3 (5.8–6.8)	–	
Immunisation/vaccination – all*	4.4 (4.0–4.9)	4.3 (3.9–4.8)	4.8 (4.4–5.2)	4.3 (3.9–4.7)	4.8 (4.4–5.1)	5.3 (4.8–5.7)	6.5 (5.9–7.0)	4.8 (4.4–5.3)	4.2 (3.8–4.6)	4.2 (3.8–4.6)	4.6 (4.1–5.0)	–	
Back complaint*	3.5 (3.2–3.7)	3.4 (3.2–3.6)	3.4 (3.2–3.7)	3.2 (3.0–3.4)	3.2 (3.0–3.4)	3.1 (2.9–3.3)	3.1 (2.9–3.3)	3.1 (3.0–3.3)	3.1 (2.9–3.3)	3.1 (2.9–3.3)	3.2 (3.0–3.4)	–	
Administrative procedure – all*	1.8 (1.6–1.9)	1.7 (1.5–1.8)	1.7 (1.5–1.8)	1.8 (1.7–2.0)	2.3 (2.2–2.5)	2.4 (2.2–2.6)	2.4 (2.2–2.6)	2.6 (2.4–2.8)	2.9 (2.7–3.2)	2.9 (2.7–3.2)	3.2 (2.9–3.4)	↑	
Blood test – all*	2.1 (2.0–2.3)	2.2 (2.0–2.4)	2.3 (2.1–2.5)	2.5 (2.3–2.7)	2.6 (2.4–2.8)	2.8 (2.6–3.1)	2.4 (2.2–2.7)	2.6 (2.4–2.8)	2.8 (2.6–3.1)	2.8 (2.6–3.1)	2.9 (2.6–3.1)	↑	
Rash*	2.8 (2.6–2.9)	2.9 (2.7–3.1)	2.6 (2.5–2.8)	2.8 (2.6–3.0)	2.5 (2.3–2.6)	2.6 (2.5–2.8)	2.4 (2.2–2.6)	2.7 (2.5–2.9)	2.6 (2.5–2.8)	2.6 (2.5–2.8)	2.6 (2.4–2.8)	–	
Throat complaint	3.4 (3.1–3.6)	3.5 (3.3–3.8)	3.3 (3.0–3.5)	3.3 (3.1–3.6)	3.3 (3.0–3.6)	3.2 (2.9–3.5)	2.9 (2.7–3.2)	3.1 (2.8–3.4)	3.2 (2.9–3.5)	3.2 (2.9–3.5)	2.5 (2.3–2.7)	↓	
Upper respiratory tract infection	1.9 (1.7–2.1)	1.7 (1.5–2.0)	2.4 (2.0–2.7)	2.4 (2.1–2.7)	2.2 (2.0–2.5)	2.3 (2.0–2.6)	2.2 (1.9–2.5)	2.0 (1.8–2.3)	1.9 (1.7–2.1)	1.9 (1.7–2.1)	2.3 (2.0–2.5)	–	
Depression*	1.8 (1.7–1.9)	1.9 (1.7–2.0)	1.9 (1.7–2.0)	1.9 (1.8–2.1)	2.0 (1.9–2.2)	2.1 (1.9–2.2)	2.2 (2.0–2.3)	2.2 (2.1–2.4)	2.2 (2.0–2.3)	2.2 (2.0–2.3)	2.3 (2.1–2.5)	↑	
Abdominal pain*	2.5 (2.3–2.7)	2.3 (2.2–2.5)	2.2 (2.1–2.4)	2.2 (2.1–2.3)	2.2 (2.0–2.3)	2.1 (1.9–2.2)	2.0 (1.8–2.1)	2.2 (2.1–2.3)	2.2 (2.1–2.4)	2.2 (2.1–2.4)	2.0 (1.9–2.2)	↓	

(continued)

Table 6.5 (continued): Most frequent patient reasons for encounter, 2003–04 to 2012–13

Patient reason for encounter	Rate per 100 encounters (95% CI)											2012–13 (n = 98,564) ↑ <sup>(e)</sup> ↓
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 149,005)	2011–12 (n = 99,030)	2012–13 (n = 98,564)	2012–13 (n = 98,564)	
Fever	1.9 (1.7–2.1)	1.8 (1.6–2.0)	2.2 (1.9–2.5)	1.8 (1.6–2.0)	2.1 (1.8–2.5)	1.9 (1.7–2.1)	2.2 (2.0–2.5)	2.0 (1.8–2.3)	1.9 (1.7–2.1)	1.9 (1.7–2.1)	1.9 (1.7–2.1)	–
Hypertension/high blood pressure*	1.9 (1.6–2.1)	1.7 (1.5–1.9)	1.9 (1.6–2.1)	2.1 (1.8–2.5)	2.1 (1.8–2.3)	2.1 (1.9–2.4)	2.0 (1.7–2.3)	1.9 (1.7–2.2)	1.8 (1.5–2.0)	1.8 (1.5–2.0)	1.9 (1.7–2.2)	–
Headache*	2.2 (2.0–2.3)	2.0 (1.9–2.2)	2.0 (1.9–2.1)	1.9 (1.7–2.0)	1.9 (1.8–2.1)	1.9 (1.8–2.1)	1.8 (1.6–1.9)	1.7 (1.6–1.9)	1.8 (1.7–2.0)	1.8 (1.7–2.0)	1.7 (1.5–1.8)	↓
Observation/health education/advice/diet – all*	1.4 (1.3–1.5)	1.5 (1.3–1.7)	1.4 (1.3–1.6)	1.7 (1.5–1.8)	1.8 (1.6–2.0)	1.6 (1.5–1.8)	1.9 (1.7–2.1)	1.8 (1.5–2.1)	1.6 (1.5–1.8)	1.6 (1.5–1.8)	1.6 (1.5–1.8)	↑
Skin symptom/complaint, other	1.4 (1.2–1.5)	1.5 (1.3–1.6)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.5 (1.4–1.6)	1.6 (1.5–1.7)	1.5 (1.4–1.7)	1.6 (1.4–1.7)	1.6 (1.4–1.7)	1.5 (1.4–1.7)	–
Knee symptom/complaint	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.4 (1.2–1.5)	1.3 (1.2–1.4)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.5 (1.4–1.6)	–
Diabetes – all*	0.9 (0.8–1.0)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.3 (1.1–1.4)	1.2 (1.1–1.4)	1.2 (1.0–1.3)	1.4 (1.3–1.6)	1.3 (1.1–1.4)	1.3 (1.1–1.4)	1.4 (1.3–1.6)	↑
Weakness/tiredness	1.5 (1.4–1.6)	1.7 (1.5–1.8)	1.3 (1.2–1.4)	1.4 (1.2–1.5)	1.4 (1.2–1.5)	1.5 (1.4–1.6)	1.4 (1.3–1.5)	1.3 (1.2–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	–
Anxiety*	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.2 (1.0–1.3)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.1 (1.0–1.3)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.4 (1.2–1.5)	↑
Other referrals NEC	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.0)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.3 (1.2–1.5)	↑
Ear pain/earache	1.6 (1.4–1.7)	1.6 (1.5–1.7)	1.6 (1.5–1.7)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.6)	1.3 (1.2–1.4)	1.5 (1.3–1.6)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	↓
Shoulder symptom/complaint	1.0 (0.9–1.1)	1.3 (1.1–1.4)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.0 (0.9–1.1)	1.4 (1.3–1.5)	1.1 (1.0–1.3)	1.2 (1.1–1.2)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	↑
Sneezing/nasal congestion	1.3 (1.1–1.5)	1.4 (1.2–1.6)	1.3 (1.1–1.6)	1.1 (0.9–1.2)	1.4 (1.2–1.6)	1.3 (1.1–1.5)	1.6 (1.3–1.8)	1.4 (1.2–1.7)	1.5 (1.3–1.7)	1.5 (1.3–1.7)	1.2 (1.1–1.4)	–
Diarrhoea	1.4 (1.3–1.6)	1.4 (1.3–1.5)	1.3 (1.2–1.4)	1.3 (1.2–1.5)	1.4 (1.3–1.6)	1.3 (1.2–1.4)	1.2 (1.1–1.4)	1.2 (1.1–1.3)	1.4 (1.2–1.5)	1.4 (1.2–1.5)	1.2 (1.1–1.3)	↓

(continued)

**Table 6.5 (continued): Most frequent patient reasons for encounter, 2003-04 to 2012-13**

Patient reasons for encounter	Rate per 100 encounters (95% CI)												2012-13 (n = 98,564) ↑ <sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 149,005)	2011-12 (n = 99,030)	2012-13 (n = 98,564)	2012-13 (n = 98,564)	2012-13 (n = 98,564)	
Foot/Toe complaint	1.1 (1.0-1.2)	1.2 (1.1-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.1)	1.1 (1.0-1.1)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	—	
Sleep disturbance	1.1 (1.0-1.2)	1.2 (1.1-1.4)	1.1 (1.0-1.2)	1.1 (1.0-1.1)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	—	
Swelling (skin)*	1.1 (1.0-1.3)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.0 (1.0-1.1)	—	
Other reason for encounter NEC	1.1 (0.9-1.2)	1.0 (0.9-1.2)	1.0 (0.8-1.1)	1.0 (0.9-1.2)	0.7 (0.6-0.9)	0.8 (0.7-1.0)	0.9 (0.8-1.0)	1.0 (0.8-1.1)	0.9 (0.7-1.1)	0.9 (0.7-1.1)	1.0 (0.7-1.3)	—	
Vertigo/dizziness	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.1 (1.1-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	1.0 (0.9-1.0)	1.1 (1.1-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	↘	
Follow-up encounter NOS	0.8 (0.7-0.9)	0.7 (0.6-0.9)	0.6 (0.5-0.7)	0.8 (0.6-0.9)	0.6 (0.5-0.7)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.9 (0.7-1.0)	0.9 (0.7-1.0)	1.0 (0.9-1.1)	↑	
Leg/thigh complaint	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	1.0 (1.0-1.1)	0.9 (0.8-1.0)	1.0 (1.0-1.1)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.9-1.0)	0.9 (0.9-1.0)	1.0 (0.9-1.1)	—	
Chest pain NOS	1.3 (1.2-1.4)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	1.1 (1.0-1.1)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	0.9 (0.9-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	↘	
Neck complaint	0.9 (0.9-1.0)	1.0 (0.9-1.2)	0.9 (0.8-1.1)	0.9 (0.8-0.9)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.8 (0.7-1.0)	0.8 (0.8-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	↘	
Vomiting	1.1 (1.0-1.3)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.7 (0.7-0.8)	↘	
Oral contraception*	1.0 (0.9-1.1)	1.0 (0.9-1.1)	0.8 (0.7-0.9)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.6 (0.6-0.7)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	0.7 (0.6-0.7)	↘	
<b>Total RFEs</b>	150.2 (148.4-152.0)	149.6 (147.8-151.5)	150.3 (148.4-152.2)	150.8 (148.9-152.7)	153.0 (151.1-154.8)	156.5 (154.7-158.2)	155.0 (153.1-156.8)	155.5 (153.5-157.5)	154.7 (152.8-156.7)	154.5 (152.7-156.3)	154.5 (152.7-156.3)	↑	

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↗ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↘ indicates a marginally significant change in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

\* Includes multiple ICP-2 or ICP-2 PLUS codes (see Appendix 4, Table A4.1, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; NOS – not otherwise specified; RFE – reason for encounter; NEC – not elsewhere classified. Includes only RFEs recorded in at least one year at a rate >= 1.0 per 100 encounter.

## 7 Problems managed

A 'problem managed' is a formal statement of the provider's understanding of a health problem presented by the patient, family or community, and can be described in terms of a disease, symptom or complaint, social problem, or ill-defined condition. GPs were instructed to record each problem at the most specific level possible from the information available. As such, the problem managed may be limited to the level of a presenting symptom rather than a diagnosis.

At each patient encounter, up to four problems could be recorded by the GP. A minimum of one problem was compulsory. The status of each problem to the patient – new (first presentation to a medical practitioner) or old (follow-up of previously managed problem) – was also indicated. The concept of a principal diagnosis, which is often used in hospital statistics, is not adopted in studies of general practice where multiple problem management is the norm rather than the exception. Further, the range of problems managed at the encounter often crosses multiple body systems and may include undiagnosed symptoms, psychosocial problems, chronic disease or preventive health, which makes the designation of a principal diagnosis difficult. Thus the order in which the problems were recorded by the GP is not significant.

This chapter includes data about the problems managed in general practice from each of the most recent 10 years of the BEACH study from 2003–04 to 2012–13. The direction and type of change from 2003–04 to 2012–13 is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

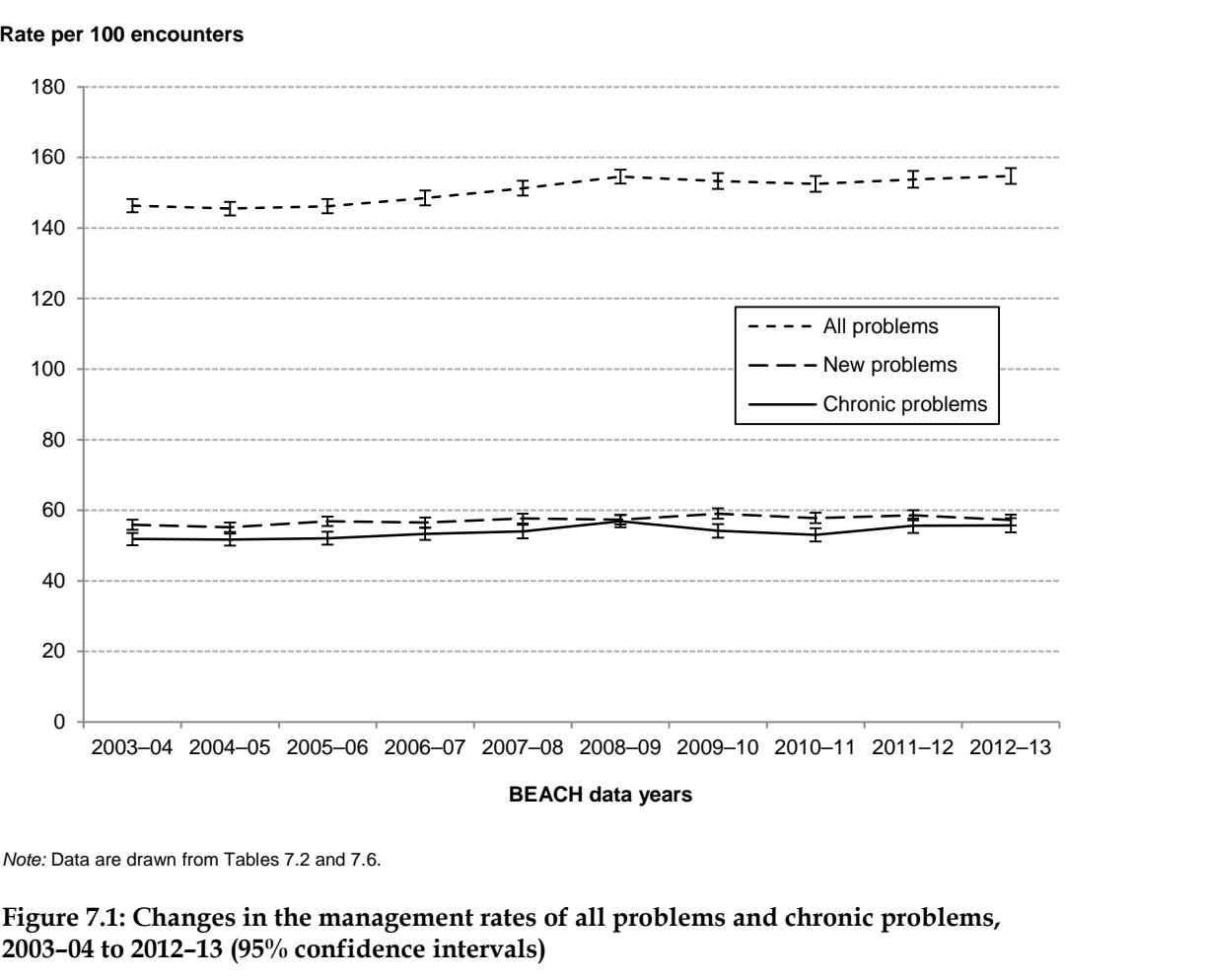
Significant changes in the rate per 100 encounters can be extrapolated to estimate the national increase or decrease in the measured event between 2003–04 and 2012–13. Examples of extrapolated change are given. The method used to extrapolate to national change estimates is described in Section 2.9. The number of GP–patient encounters claimed through the MBS nationally increased by 30.5 million (31.7%) between 2003–04 (96.3 million encounters) and 2012–13 (126.8 million encounters). As a result, a decreased rate of a particular 'measured event' per 100 encounters may occasionally yield a national increased absolute number of those events.

Detailed analyses of 'problems managed' by participating GPs in the 2012–13 BEACH year can be found in the companion report *General practice activity in Australia 2012–13*.<sup>1</sup>

There are two ways to describe the relative frequency of problems managed: as a percentage of all problems managed in the study, or as a rate of problems managed per 100 encounters. Where groups of problems are reported (for example, cardiovascular problems), it must be remembered that more than one of that type of problem (such as hypertension and heart failure) may have been managed at a single encounter.

In considering these results, the reader must be mindful that a rate per 100 encounters for a single ungrouped problem, for example 'asthma, 2.2 per 100 encounters,' can be regarded as equivalent to 'asthma is managed at 2.2% of encounters', and can be extrapolated (with the methods described in Section 2.9) to accurately estimate the number of national encounters involving management of the selected problem. This is not the case for grouped concepts (ICPC-2 chapters and those marked with asterisks in the tables) for which extrapolations represent the number of problem contacts involving the management of any of the problems within the group at general practice encounters nationally. In these cases an extrapolated result may be an overestimate of the number of encounters involving management of these problems. This is because multiple problems (within the selected group) can be recorded within a single encounter. To estimate more precisely the number of encounters nationally that involve management of the grouped concept, the extrapolation would have to be based on the proportion of encounters involving at least one of the concepts within the group.

Figure 7.1 shows statistically significant increases in the rate at which all problems and chronic problems were managed per 100 encounters over the 10 years to 2012-13. The figure indicates that most of the increase in the rate of all problems managed occurred between 2003-04 and 2008-09, and then remained stable for the rest of the decade. This pattern is reflected in the rate of chronic problems managed. No significant changes were evident in the rate at which new problems were managed (Table 7.5).



## 7.1 Number of problems managed

GPs are asked to record information about the management of up to four problems at each encounter. Table 7.1 shows the number of problems managed at encounters over the decade. There were increases in the proportion of encounters at which two, three and four problems were managed, and a decrease in encounters where only one problem was managed. When extrapolated to all GP-patient encounters in Australia, this suggests there were about 9.7 million more occasions on which two problems were managed, 4.6 million more occasions where three problems were managed, and 1.9 million more occasions where four problems were managed by GPs in Australia in 2012-13 than in 2003-04.

These results led to a significant increase in the average number of problems managed at encounter, from 146.3 per 100 encounters in 2003-04 to 154.7 in 2012-13 (Table 7.2). This suggests there were an additional 55.3 million problems managed at GP-patient encounters in Australia in 2012-13 than in 2003-04.

## 7.2 Problems managed by ICPC-2 component

Problems managed in general practice may also be examined using the components of the ICPC-2 classification to provide a better understanding of the types of problems managed during general practice encounters. The component structure of ICPC-2 is described in detail in Section 2.8. Table 7.2 shows the distribution of problems managed by ICPC-2 component.

There were significant increases in the management rate of problems classified as 'symptoms and complaints', 'results' and 'administrative' between 2003-04 and 2012-13 (Table 7.2).

There was also a marginal increase in the management rate of problems classified as 'diagnosis, diseases'. Extrapolated to the national general practice encounters, these increases represent about:

- 34.9 million additional contacts with problems classified as 'diagnosis, diseases' in 2012-13 than in 2003-04
- 11.0 million more GP contact with problems described in terms of 'symptoms and complaints' in 2012-13 than in 2003-04
- 1.4 million more contacts described as 'test results' in 2012-13 than in 2003-04
- 1.2 million more contacts with problems classified as 'administrative' in 2012-13 than in 2003-04.

The 'diagnosis, diseases' component can be broken down into various subtypes (also described in Section 2.8). Changes in problems managed between 2003-04 and 2012-13 were also evident in these subtypes, with the management of problems classified as 'other diagnoses, diseases' increasing. The management rate of 'infections' decreased. However, due to an overall increase in the number of encounters in Australian general practice (as described in the introduction to this chapter), there were actually 5.6 million more contacts with problems classified as infections in 2012-13 than in 2003-04.

The management rate of problems described and classified as 'diagnostic and preventive procedures' showed changes across the decade, peaking in 2009-10.

There was no change in the management rate of problems described and classified as 'medications, treatments and therapeutics' or 'referrals and other reasons for encounter' (Table 7.2).

## 7.3 Problems managed by ICPC-2 chapter and individual problems managed

Problems managed at general practice encounters classified by ICPC-2 chapter are described in Table 7.3 for all years from 2003–04 to 2012–13. Problems related to the respiratory system have consistently been the most frequent type of problem managed since 2003–04. Although there was no overall change in the rate of management of respiratory problems between 2003–04 and 2012–13, changes did occur during the decade, including an increase from 2007–08 to 2008–09, and a subsequent decrease from 2009–10 to 2010–11. It is likely that the peak in the management rate of respiratory problems in 2009–10 was related to concern regarding H1N1 influenza. A similar pattern of change is shown in the management rate of immunisation/vaccination problems (described in Table 7.4).

There were significant increases in the management rate of problems classified as ‘general and unspecified’, ‘endocrine and metabolic’, ‘psychological’ and ‘urological’ (Table 7.3). When extrapolated to general practice encounters across Australia, these changes represent:

- 10.0 million more contacts with problems classified as ‘general and unspecified’ in 2012–13 than in 2003–04
- 6.6 million more contacts with endocrine and metabolic problems
- 6.2 million more contacts with psychological problems
- 1.5 million more contacts with urological problems.

There were significant decreases in the management rate of problems classified to the ‘eye’ chapter (Table 7.3). However, due to the overall increase in the number of GP–patient encounters claimed through the MBS (described in the introduction to this chapter), there was an increase in the number of contacts for this when extrapolated to general practice encounters across Australia. This equated to 320,000 more contacts with eye problems in 2012–13 than in 2003–04.

The individual problems managed most frequently are described in Table 7.4. This demonstrates that in all years from 2003–04 to 2012–13, the most frequently managed were hypertension, check-up, upper respiratory tract infection and immunisation/vaccination.

There were statistically significant increases in the management rates of general check-up, diabetes, gastro-oesophageal reflux disease, test results, vitamin/nutritional deficiency, administrative procedure, atrial fibrillation/flutter, pregnancy, abnormal test results and lacerations/cuts. Marginal increases in the rates of depression and anxiety are also notable.

When extrapolated to all GP encounters across Australia, these changes represent:

- 1.9 million more general check-ups in 2012–13 than in 2003–04. It is likely that the introduction of specific MBS items for health assessments may have contributed to this increase. These health assessments are targeted towards particular groups of patients, including those aged 75 years and over, the ‘Healthy Kids Check’ for children of pre-school age and those aged 45–49 at risk of developing chronic disease<sup>54</sup>
- 2.1 million more occasions of diabetes management
- 1.2 million more occasions where gastro-oesophageal reflux disease was managed
- 1.4 million more contacts for test results and 880,000 more contacts for abnormal test results. These increases may be explained by increased orders for pathology tests over the decade described in Chapter 12
- 1.4 million more occasions where vitamin/nutritional deficiency was managed
- 1.2 million more contacts for problems regarded as administrative procedures



- 1.0 million more contacts for atrial fibrillation/flutter
- 880,000 more occasions where pregnancy was managed
- 590,000 more contacts for laceration/cut.

In contrast, over the decade there were significant decreases in the management rates of cardiovascular check-ups, asthma, gastroenteritis, other or unspecified viral disease, headache, tonsillitis and menopausal complaints. When extrapolated to general practice encounters across Australia, these changes represent:

- 140,000 fewer cardiovascular check-ups in 2012–13 than in 2003–04
- 80,000 fewer occasions where menopausal complaints were managed
- 40,000 fewer occasions of tonsillitis management.

Due to the overall increase in the number of GP–patient encounters claimed through the MBS (described in the introduction to this chapter), for some problems managed there was an increase in the number of contacts for the problem over the decade, despite a decrease in the management rate over the decade, including:

- 290,000 more contacts for asthma in 2012–13 than in 2003–04
- 50,000 more contacts for headache management in 2012–13 than in 2003–04
- 10,000 more occasions of gastroenteritis management
- 20,000 more contacts for other or unspecified viral disease.

The management rate of immunisation/vaccination did not change significantly between 2003–04 (4.7 per 100 encounters) and 2012–13 (5.0). However there was a significant spike in 2009–10 (7.3 per 100) that coincided with the concern about H1N1 influenza.

## 7.4 Most common new problems

There was no change in the management rate of all new problems combined over the decade. Table 7.5 shows the most frequently managed new problems between 2003–04 and 2012–13.

The most common new problems managed in general practice in all years were upper respiratory tract infection, immunisation/vaccination, check-up and acute bronchitis/bronchiolitis. Few significant changes in the management rate of the most common new problems were identified when comparing 2012–13 with 2003–04.

The management rate of new check-ups increased significantly (from 2.1 to 2.9 per 100 encounters). This is likely to be due to the ageing population and new MBS items for check-ups (as discussed above). When extrapolated, this increase represents 1.7 million additional occasions where a check-up was managed as a new problem in Australia in 2012–13 compared with 2003–04.

The rate of new immunisation/vaccination did not change from 2003–04 to 2012–13, however in 2009–10 there was a spike in the rate that coincided with the concern regarding H1N1 influenza (as discussed above).

## 7.5 Most frequently managed chronic problems

To identify chronic conditions, a list classified according to ICPC-2, based on work undertaken by O'Halloran et al. in 2004<sup>30</sup> and regularly updated by O'Halloran (see 'Chronic conditions' grouper G84 <sydney.edu.au/medicine/fmrc/icpc-2-plus/demonstrator>), was applied to the BEACH data set. In other parts of this chapter, both chronic and non-chronic conditions (for example, diabetes and gestational diabetes) may have been grouped together when reporting (for example, diabetes – all\*, Table 7.4). In this section, only problems regarded as chronic have been included in the analysis. For this reason, the condition labels in Table 7.6 may differ from those in Table 7.4. Where the group used for the chronic analysis differs from that used in other analyses in this report, they are marked with a double asterisk (for example, Diabetes [non-gestational]\*\*). Codes included can be found in Appendix 4, Table A4.2.

Table 7.6 shows the most frequently managed chronic problems between 2003–04 and 2012–13. The management rate of chronic conditions significantly increased from 51.9 per 100 encounters in 2003–04 to 55.7 per 100 in 2012–13, suggesting approximately 20.6 million more contacts with chronic problems in Australia in 2012–13 than in 2003–04. This may be due in part to increases in the proportion of GP-patient encounters with older patients (aged 65–74 years and 75 years and over), seen in Chapter 6.

The most common chronic problems managed were non-gestational hypertension, non-gestational diabetes, depressive disorder, chronic arthritis and lipid disorders.

From 2003–04 to 2012–13, there were significant increases in the management rates of:

- non-gestational diabetes (equating to an additional 2.1 million contacts in 2012–13 than in 2003–04)
- depressive disorder (representing 1.7 million more occasions of management in 2012–13 than in 2003–04)
- atrial fibrillation/flutter (representing 1.0 million more occasions of management)
- hypothyroidism/myxoedema (representing 660,000 more contacts for this problem)
- shoulder syndrome (equating to 380,000 more occasions where this problem was managed)
- unspecified chronic pain (representing 440,000 more contacts for this problem).

The Australian Government has invested considerable resources in the prevention and management of chronic disease (such as the National Chronic Disease Strategy,<sup>55</sup> and MBS items for chronic disease management).<sup>54</sup> A major reason for this focus is the ageing population<sup>56</sup> and the associated expected fiscal pressures (especially healthcare costs).<sup>3</sup>

**Table 7.1: Number of problems managed at encounter, 2003-04 to 2012-13**

Number of problems managed at encounter	Per cent of encounters (95% CI)											↑ <sup>(a)</sup> ↓
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
One problem	66.2 (65.0-67.3)	66.5 (65.3-67.7)	66.4 (65.1-67.6)	65.0 (63.7-66.2)	63.0 (61.7-64.3)	60.8 (59.6-61.9)	62.2 (60.9-63.5)	62.6 (61.2-63.9)	62.1 (60.8-63.4)	61.5 (60.2-62.8)	↓	
Two problems	23.8 (23.1-24.5)	23.6 (22.9-24.3)	23.4 (22.7-24.1)	24.0 (23.3-24.8)	25.4 (24.7-26.2)	26.7 (26.1-27.4)	25.4 (24.7-26.1)	25.4 (24.6-26.1)	25.5 (24.7-26.2)	25.7 (25.0-26.4)	↑	
Three problems	7.7 (7.2-8.1)	7.7 (7.3-8.2)	7.9 (7.4-8.4)	8.5 (8.1-9.0)	8.8 (8.3-9.3)	9.7 (9.2-10.1)	9.2 (8.7-9.7)	9.2 (8.6-9.7)	9.1 (8.6-9.6)	9.5 (9.0-10.0)	↑	
Four problems	2.4 (2.0-2.8)	2.2 (1.8-2.5)	2.3 (2.1-2.6)	2.5 (2.2-2.7)	2.7 (2.4-3.0)	2.8 (2.6-3.1)	3.2 (2.8-3.5)	2.9 (2.6-3.3)	3.4 (3.0-3.8)	3.3 (3.0-3.7)	↑	

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result. ↑/↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04.

Note: CI – confidence interval.

Table 7.2: Problems managed by ICP-2 component, 2003–04 to 2012–13

ICPC-2 chapter	Rate per 100 encounters (95% CI)												(a)
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13			
Diagnosis, diseases	99.2 (97.4–100.9)	98.8 (97.1–100.6)	100.2 (98.3–102.0)	101.3 (99.6–103.0)	102.6 (100.7–104.4)	105.3 (103.6–107.0)	102.1 (100.2–104.1)	101.1 (99.1–103.0)	104.1 (102.1–106.1)	102.9 (100.9–104.9)	102.9 (100.9–104.9)	102.9 (100.9–104.9)	↑
Infections	25.4 (24.6–26.2)	24.5 (23.8–25.2)	25.9 (25.1–26.6)	24.6 (23.9–25.4)	25.0 (24.2–25.7)	25.0 (24.3–25.7)	24.9 (24.1–25.7)	24.8 (24.0–25.5)	24.7 (24.0–25.5)	23.7 (22.8–24.5)	23.7 (22.8–24.5)	23.7 (22.8–24.5)	↓
Injuries	7.2 (6.9–7.5)	7.3 (7.0–7.6)	7.4 (7.0–7.7)	7.5 (7.2–7.7)	7.3 (7.0–7.7)	7.2 (6.9–7.4)	6.9 (6.6–7.2)	7.1 (6.8–7.3)	7.6 (7.3–7.9)	7.2 (7.0–7.5)	7.2 (7.0–7.5)	7.2 (7.0–7.5)	–
Neoplasms	4.3 (3.9–4.7)	4.3 (3.9–4.7)	4.1 (3.8–4.3)	4.5 (4.2–4.9)	4.5 (4.1–4.9)	4.7 (4.4–5.0)	4.7 (4.3–5.0)	4.3 (4.1–4.6)	4.2 (3.9–4.5)	4.6 (4.3–5.0)	4.6 (4.3–5.0)	4.6 (4.3–5.0)	–
Congenital anomalies	0.6 (0.5–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	–
Other diagnoses, diseases	61.7 (59.9–63.4)	62.0 (60.2–63.7)	62.2 (60.3–64.0)	63.9 (62.2–65.7)	65.0 (63.0–66.9)	67.8 (66.1–69.5)	65.0 (63.0–67.0)	64.2 (62.3–66.1)	66.9 (64.9–69.0)	66.7 (64.6–68.7)	66.7 (64.6–68.7)	66.7 (64.6–68.7)	↑
Symptoms and complaints	26.4 (25.6–27.2)	26.4 (25.6–27.3)	25.7 (24.9–26.5)	26.7 (25.9–27.5)	27.8 (27.0–28.6)	27.6 (26.8–28.5)	26.8 (26.0–27.6)	28.2 (27.4–29.1)	27.9 (27.0–28.8)	28.7 (27.8–29.6)	28.7 (27.8–29.6)	28.7 (27.8–29.6)	↑
Diagnostic and preventive procedures	13.6 (12.9–14.4)	13.3 (12.6–14.0)	13.7 (13.1–14.4)	13.8 (13.0–14.5)	14.2 (13.5–14.8)	14.9 (14.2–15.7)	16.9 (16.0–17.7)	15.1 (14.3–15.9)	14.0 (13.3–14.7)	14.5 (13.7–15.2)	14.5 (13.7–15.2)	14.5 (13.7–15.2)	§
Medications, treatments and therapeutics	4.0 (3.6–4.3)	3.6 (3.3–3.9)	3.2 (3.0–3.5)	3.2 (2.9–3.5)	2.9 (2.7–3.2)	3.3 (3.0–3.6)	3.4 (3.1–3.8)	3.7 (3.4–4.1)	3.4 (3.1–3.7)	3.9 (3.6–4.3)	3.9 (3.6–4.3)	3.9 (3.6–4.3)	–
Results	1.2 (1.1–1.4)	1.4 (1.3–1.5)	1.4 (1.3–1.6)	1.6 (1.4–1.7)	1.8 (1.6–1.9)	1.5 (1.4–1.7)	1.8 (1.6–2.0)	1.9 (1.7–2.1)	1.8 (1.6–2.0)	2.0 (1.8–2.2)	2.0 (1.8–2.2)	2.0 (1.8–2.2)	↑
Referrals and other RFEs	1.3 (1.1–1.4)	1.3 (1.2–1.5)	1.2 (1.1–1.4)	1.3 (1.2–1.5)	1.2 (1.0–1.3)	1.0 (0.9–1.1)	1.3 (1.1–1.4)	1.3 (1.1–1.5)	1.3 (1.1–1.5)	1.3 (1.2–1.5)	1.3 (1.2–1.5)	1.3 (1.2–1.5)	–
Administrative	0.6 (0.6–0.7)	0.6 (0.5–0.6)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	1.1 (1.0–1.3)	1.3 (1.1–1.4)	1.4 (1.3–1.6)	1.4 (1.3–1.6)	1.4 (1.3–1.6)	↑
<b>Total problems</b>	<b>146.3 (144.4–148.2)</b>	<b>145.5 (143.6–147.4)</b>	<b>146.2 (144.2–148.2)</b>	<b>148.5 (146.4–150.6)</b>	<b>151.3 (149.2–153.4)</b>	<b>154.6 (152.6–156.5)</b>	<b>153.3 (151.1–155.5)</b>	<b>152.5 (150.2–154.7)</b>	<b>153.8 (151.4–156.1)</b>	<b>154.7 (152.5–157.0)</b>	<b>154.7 (152.5–157.0)</b>	<b>154.7 (152.5–157.0)</b>	↑

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade. Note: CI – confidence interval; RFE – reason for encounter.

Table 7.3: Problems managed by ICP-C-2 chapter, 2003-04 to 2012-13

ICPC-2 chapter	Rate per 100 encounters (95% CI)											<sup>(a)</sup> ↑ ↓
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Respiratory	20.1 (19.5-20.7)	19.2 (18.6-19.9)	20.6 (19.9-21.3)	19.6 (18.9-20.3)	19.5 (18.8-20.1)	20.8 (20.2-21.5)	22.2 (21.4-22.9)	20.4 (19.7-21.1)	20.0 (19.3-20.7)	20.1 (19.4-20.8)	\$	
General and unspecified	15.0 (14.4-15.5)	15.1 (14.5-15.7)	15.1 (14.5-15.7)	16.2 (15.6-16.8)	17.8 (17.1-18.5)	17.0 (16.4-17.6)	19.4 (18.6-20.1)	19.2 (18.4-20.0)	18.5 (17.8-19.2)	19.3 (18.6-20.1)	↑	
Musculoskeletal	17.1 (16.6-17.6)	17.7 (17.1-18.2)	17.2 (16.7-17.7)	17.1 (16.6-17.6)	17.3 (16.7-17.8)	17.3 (16.8-17.8)	16.8 (16.1-17.6)	16.6 (16.1-17.1)	17.4 (16.9-17.9)	17.7 (17.2-18.3)	\$	
Skin	16.9 (16.2-17.6)	17.3 (16.6-18.0)	16.7 (16.1-17.2)	17.6 (16.9-18.2)	17.2 (16.5-17.9)	17.0 (16.5-17.5)	16.5 (15.9-17.1)	16.7 (16.2-17.2)	16.7 (16.1-17.2)	16.9 (16.3-17.5)	—	
Cardiovascular	16.8 (16.1-17.5)	16.2 (15.5-16.9)	16.9 (16.1-17.7)	17.4 (16.7-18.1)	17.6 (16.8-18.3)	18.5 (17.8-19.3)	16.7 (16.0-17.4)	16.6 (15.9-17.4)	17.2 (16.4-18.0)	16.5 (15.8-17.3)	\$	
Endocrine and metabolic	11.3 (10.8-11.8)	11.8 (11.2-12.3)	11.6 (11.0-12.2)	12.1 (11.6-12.6)	12.9 (12.4-13.5)	13.5 (13.0-14.1)	12.7 (12.1-13.2)	12.8 (12.2-13.4)	13.5 (13.0-14.1)	13.8 (13.1-14.4)	↑	
Psychological	10.8 (10.3-11.4)	11.4 (10.8-12.0)	11.1 (10.5-11.7)	10.9 (10.5-11.4)	11.5 (10.9-12.0)	12.4 (11.9-12.9)	12.1 (11.6-12.7)	12.3 (11.8-12.9)	13.0 (12.3-13.6)	13.1 (12.4-13.7)	↑	
Digestive	10.5 (10.2-10.8)	9.9 (9.6-10.2)	10.1 (9.8-10.4)	10.4 (10.1-10.7)	10.7 (10.4-11.1)	10.5 (10.2-10.8)	10.7 (10.3-11.0)	10.6 (10.3-10.9)	11.1 (10.8-11.4)	10.9 (10.6-11.3)	\$	
Female genital system	5.9 (5.5-6.3)	5.7 (5.3-6.1)	5.8 (5.4-6.2)	5.7 (5.3-6.1)	5.8 (5.4-6.2)	6.1 (5.7-6.6)	5.5 (5.1-5.8)	5.5 (5.2-5.9)	5.5 (5.1-5.8)	5.3 (4.9-5.6)	—	
Ear	4.0 (3.8-4.1)	4.1 (3.9-4.2)	4.0 (3.8-4.2)	3.8 (3.6-3.9)	3.8 (3.6-3.9)	3.9 (3.7-4.1)	3.7 (3.5-3.8)	3.9 (3.7-4.1)	3.7 (3.5-3.8)	3.8 (3.6-4.0)	—	
Pregnancy and family planning	4.2 (3.9-4.5)	3.8 (3.6-4.1)	3.8 (3.6-4.1)	3.9 (3.6-4.2)	3.9 (3.6-4.2)	3.7 (3.4-3.9)	3.8 (3.6-4.1)	3.9 (3.6-4.2)	3.8 (3.6-4.1)	3.7 (3.4-4.0)	—	
Neurological	3.9 (3.8-4.1)	3.6 (3.5-3.8)	3.6 (3.4-3.8)	3.7 (3.6-3.9)	3.6 (3.4-3.7)	3.8 (3.6-3.9)	3.5 (3.3-3.6)	3.7 (3.6-3.9)	3.6 (3.4-3.8)	3.6 (3.5-3.8)	↓	
Urology	3.0 (2.9-3.2)	3.0 (2.9-3.2)	3.1 (2.9-3.2)	3.1 (3.0-3.3)	3.1 (3.0-3.3)	3.3 (3.2-3.5)	3.2 (3.1-3.4)	3.2 (3.1-3.4)	3.2 (3.0-3.3)	3.5 (3.3-3.6)	↑	
Eye	2.7 (2.6-2.9)	2.7 (2.5-2.8)	2.8 (2.6-2.9)	2.7 (2.5-2.8)	2.6 (2.4-2.7)	2.7 (2.6-2.8)	2.5 (2.3-2.6)	2.5 (2.4-2.6)	2.4 (2.3-2.6)	2.3 (2.1-2.4)	↓	

(continued)

**Table 7.3 (continued): Problems managed by ICPC-2 chapter, 2003-04 to 2012-13**

ICPC-2 chapter	Rate per 100 encounters (95% CI)												
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)	(a)		
Male genital system	1.6 (1.5-1.7)	1.8 (1.6-1.9)	1.9 (1.7-2.0)	1.8 (1.7-2.0)	1.8 (1.7-1.9)	2.0 (1.9-2.2)	1.9 (1.7-2.0)	1.9 (1.7-2.0)	1.8 (1.7-2.0)	1.8 (1.7-2.0)	1.8 (1.7-2.0)	↑	↑
Blood	1.7 (1.5-1.8)	1.6 (1.4-1.8)	1.5 (1.4-1.6)	1.7 (1.5-1.9)	1.6 (1.5-1.8)	1.5 (1.3-1.6)	1.5 (1.4-1.6)	1.6 (1.5-1.7)	1.7 (1.5-1.8)	1.7 (1.5-1.8)	1.6 (1.5-1.8)	—	—
Social problems	0.8 (0.7-0.8)	0.8 (0.7-0.9)	0.6 (0.5-0.7)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.6 (0.5-0.7)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.9 (0.8-1.0)	↑	↑
<b>Total problems</b>	<b>146.3</b> <b>(144.4-148.2)</b>	<b>145.5</b> <b>(143.6-147.4)</b>	<b>146.2</b> <b>(144.2-148.2)</b>	<b>148.5</b> <b>(146.4-150.6)</b>	<b>151.3</b> <b>(149.2-153.4)</b>	<b>154.6</b> <b>(152.6-156.5)</b>	<b>153.3</b> <b>(151.1-155.5)</b>	<b>152.5</b> <b>(150.2-154.7)</b>	<b>153.8</b> <b>(151.4-156.1)</b>	<b>154.7</b> <b>(152.5-157.0)</b>	<b>154.7</b> <b>(152.5-157.0)</b>	↑	↑

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↑/↓ indicates a marginally significant change in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

Note: CI – confidence interval.

**Table 7.4: Most frequently managed problems, 2003-04 to 2012-13**

Problem managed	Rate per 100 encounters (95% CI)												
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)	(a)		
Hypertension*	9.2 (8.7-9.7)	8.9 (8.4-9.4)	9.4 (8.9-10.0)	9.6 (9.1-10.0)	9.9 (9.4-10.5)	10.1 (9.6-10.6)	9.1 (8.6-9.6)	8.7 (8.2-9.2)	9.1 (8.5-9.6)	8.6 (8.1-9.1)	8.6 (8.1-9.1)	§	§
Check-up – all*	6.4 (5.9-6.9)	6.3 (5.9-6.7)	6.4 (6.0-6.8)	6.6 (6.2-7.0)	6.3 (6.0-6.7)	6.7 (6.3-7.1)	6.6 (6.3-7.0)	6.4 (6.1-6.8)	6.4 (6.0-6.8)	6.4 (6.0-6.8)	6.4 (6.0-6.8)	—	—
General check-up*	1.8 (1.7-2.0)	2.1 (1.9-2.2)	2.1 (1.9-2.2)	2.4 (2.2-2.6)	2.5 (2.3-2.7)	2.5 (2.3-2.7)	3.0 (2.7-3.2)	2.7 (2.5-2.9)	2.8 (2.6-3.0)	2.9 (2.7-3.1)	2.9 (2.7-3.1)	↑	↑
Female genital check-up/Pap smear*	1.8 (1.6-2.0)	1.8 (1.6-2.0)	1.8 (1.6-2.0)	1.7 (1.5-1.9)	1.8 (1.6-2.0)	2.0 (1.8-2.3)	1.7 (1.5-1.9)	1.7 (1.5-1.9)	1.7 (1.5-1.9)	1.6 (1.4-1.7)	1.6 (1.4-1.7)	—	—
Cardiovascular check-up*	1.2 (1.0-1.3)	1.0 (0.9-1.1)	1.2 (1.0-1.3)	1.3 (1.1-1.5)	1.2 (1.0-1.4)	1.3 (1.1-1.5)	1.0 (0.8-1.1)	1.1 (1.0-1.3)	1.0 (0.9-1.2)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	↓	↓

(continued)

Table 7.4 (continued): Most frequently managed problems, 2003-04 to 2012-13

Problem managed	Rate per 100 encounters (95% CI)											<sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Upper respiratory tract infection	5.5 (5.1-5.8)	5.6 (5.2-5.9)	6.2 (5.8-6.6)	5.8 (5.3-6.2)	6.2 (5.7-6.7)	6.1 (5.7-6.6)	6.0 (5.5-6.4)	5.4 (5.1-5.8)	6.0 (5.5-6.4)	5.8 (5.3-6.3)	—	
Immunisation/vaccination – all*	4.7 (4.3-5.2)	4.6 (4.2-5.1)	5.0 (4.6-5.4)	4.7 (4.3-5.2)	5.2 (4.8-5.6)	5.7 (5.2-6.2)	7.3 (6.7-7.8)	5.5 (5.0-6.0)	4.7 (4.2-5.1)	5.0 (4.5-5.5)	§	
Diabetes – all*	3.3 (3.1-3.5)	3.2 (3.0-3.4)	3.5 (3.3-3.8)	3.6 (3.4-3.9)	3.9 (3.6-4.1)	4.1 (3.9-4.3)	3.7 (3.5-3.9)	4.0 (3.7-4.2)	4.2 (3.9-4.4)	4.2 (4.0-4.5)	↑	
Depression*	3.6 (3.4-3.9)	3.7 (3.5-3.9)	3.6 (3.4-3.8)	3.7 (3.5-3.9)	4.0 (3.8-4.2)	4.2 (4.0-4.5)	4.3 (4.0-4.5)	4.2 (4.0-4.4)	4.4 (4.1-4.7)	4.1 (3.9-4.4)	↑	
Arthritis – all*	4.0 (3.8-4.2)	3.9 (3.7-4.2)	3.8 (3.6-4.0)	3.7 (3.5-3.9)	3.6 (3.4-3.8)	3.8 (3.6-4.0)	3.9 (3.6-4.3)	3.7 (3.5-3.9)	4.0 (3.7-4.2)	3.8 (3.6-4.0)	—	
Osteoarthritis*	2.8 (2.6-3.0)	2.8 (2.6-3.0)	2.7 (2.5-2.9)	2.6 (2.4-2.8)	2.6 (2.4-2.8)	2.8 (2.6-2.9)	2.9 (2.6-3.2)	2.7 (2.5-2.9)	3.0 (2.8-3.2)	2.8 (2.6-3.0)	—	
Lipid disorder	3.1 (2.9-3.4)	3.3 (3.1-3.6)	3.4 (3.1-3.7)	3.5 (3.2-3.7)	3.7 (3.4-4.0)	3.9 (3.7-4.2)	3.5 (3.2-3.7)	3.1 (2.8-3.3)	3.5 (3.3-3.7)	3.3 (3.1-3.6)	—	
Back complaint*	2.7 (2.5-2.8)	2.8 (2.6-3.0)	2.6 (2.5-2.8)	2.6 (2.5-2.8)	2.7 (2.6-2.9)	2.7 (2.6-2.9)	2.7 (2.5-2.9)	2.7 (2.5-2.9)	2.8 (2.6-3.0)	2.9 (2.8-3.1)	↑	
Prescription – all*	2.3 (2.0-2.6)	2.1 (1.8-2.3)	2.0 (1.7-2.2)	2.2 (1.9-2.4)	2.0 (1.7-2.2)	2.1 (1.9-2.4)	2.3 (2.0-2.6)	2.5 (2.2-2.8)	2.4 (2.1-2.7)	2.7 (2.4-3.0)	§	
Gastro-oesophageal reflux disease*	2.2 (2.0-2.3)	2.1 (1.9-2.2)	2.3 (2.1-2.5)	2.3 (2.1-2.4)	2.3 (2.1-2.4)	2.5 (2.3-2.6)	2.5 (2.3-2.7)	2.3 (2.1-2.4)	2.6 (2.4-2.8)	2.6 (2.4-2.8)	↑	
Acute bronchitis/bronchiolitis	2.4 (2.2-2.6)	2.4 (2.2-2.6)	2.5 (2.3-2.7)	2.2 (2.1-2.4)	2.4 (2.2-2.6)	2.6 (2.4-2.8)	2.4 (2.2-2.6)	2.5 (2.3-2.7)	2.5 (2.3-2.7)	2.3 (2.1-2.5)	—	
Asthma	2.6 (2.4-2.7)	2.3 (2.2-2.5)	2.3 (2.1-2.4)	2.3 (2.1-2.4)	2.2 (2.0-2.3)	2.2 (2.1-2.3)	2.1 (1.9-2.3)	2.2 (2.0-2.3)	2.0 (1.9-2.1)	2.2 (2.0-2.3)	↓	
Anxiety*	1.7 (1.6-1.9)	1.7 (1.6-1.9)	1.8 (1.6-2.0)	1.7 (1.6-1.9)	1.8 (1.6-1.9)	1.9 (1.8-2.1)	1.8 (1.6-1.9)	1.9 (1.8-2.1)	1.9 (1.8-2.1)	2.1 (1.9-2.3)	↑	
Test results*	1.2 (1.1-1.4)	1.4 (1.3-1.5)	1.4 (1.3-1.6)	1.6 (1.4-1.7)	1.8 (1.6-1.9)	1.5 (1.4-1.7)	1.8 (1.6-2.0)	1.9 (1.7-2.1)	1.8 (1.6-2.0)	2.0 (1.8-2.2)	↑	

(continued)

**Table 7.4 (continued): Most frequently managed problems, 2003-04 to 2012-13**

Problem managed	Rate per 100 encounters (95% CI)												(a)	
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)				
Contact dermatitis	1.8 (1.6-1.9)	1.9 (1.8-2.0)	1.8 (1.7-1.9)	1.9 (1.8-2.0)	1.8 (1.7-1.9)	1.9 (1.8-2.0)	1.6 (1.5-1.7)	1.7 (1.6-1.8)	1.8 (1.7-1.9)	1.7 (1.6-1.8)	1.8 (1.7-1.9)	1.8 (1.7-1.9)	1.8 (1.7-1.9)	—
Urinary tract infection*	1.7 (1.6-1.8)	1.7 (1.6-1.8)	1.8 (1.6-1.9)	1.6 (1.5-1.8)	1.6 (1.5-1.7)	1.7 (1.6-1.8)	1.8 (1.6-1.9)	1.8 (1.7-1.9)	1.7 (1.6-1.8)	1.7 (1.6-1.8)	1.7 (1.6-1.8)	1.7 (1.6-1.8)	1.7 (1.6-1.8)	—
Sleep disturbance	1.6 (1.5-1.7)	1.7 (1.5-1.9)	1.6 (1.5-1.7)	1.6 (1.4-1.7)	1.6 (1.5-1.7)	1.6 (1.4-1.7)	1.4 (1.3-1.6)	1.5 (1.4-1.6)	1.5 (1.4-1.6)	1.5 (1.4-1.6)	1.6 (1.4-1.7)	1.6 (1.4-1.7)	1.6 (1.4-1.7)	—
Vitamin/nutritional deficiency	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.9 (0.8-1.0)	1.1 (1.0-1.2)	1.2 (1.0-1.3)	1.3 (1.1-1.4)	1.3 (1.2-1.5)	1.3 (1.2-1.5)	1.5 (1.3-1.6)	1.5 (1.3-1.6)	1.5 (1.3-1.6)	↑
Administrative procedure - all*	0.6 (0.6-0.7)	0.6 (0.5-0.6)	0.7 (0.6-0.8)	0.7 (0.7-0.8)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.1 (1.0-1.3)	1.3 (1.1-1.4)	1.3 (1.1-1.4)	1.4 (1.3-1.6)	1.4 (1.3-1.6)	1.4 (1.3-1.6)	↑
Atrial fibrillation/flutter	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.3 (1.2-1.4)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.4 (1.2-1.5)	1.4 (1.2-1.5)	1.4 (1.3-1.6)	1.4 (1.3-1.6)	1.4 (1.3-1.6)	↑
Sprain/strain*	1.6 (1.5-1.7)	1.7 (1.5-1.9)	1.8 (1.6-1.9)	1.5 (1.4-1.7)	1.6 (1.4-1.7)	1.4 (1.3-1.5)	1.4 (1.3-1.6)	1.4 (1.3-1.5)	1.4 (1.3-1.6)	1.4 (1.3-1.6)	1.4 (1.2-1.5)	1.4 (1.2-1.5)	1.4 (1.2-1.5)	↓
Gastroenteritis*	1.7 (1.5-1.8)	1.5 (1.4-1.7)	1.5 (1.4-1.7)	1.7 (1.5-1.8)	1.7 (1.5-1.8)	1.4 (1.3-1.5)	1.4 (1.3-1.6)	1.4 (1.3-1.5)	1.5 (1.4-1.6)	1.5 (1.4-1.6)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	↓
Pregnancy*	0.8 (0.7-0.9)	0.8 (0.7-0.8)	0.9 (0.8-1.0)	1.3 (1.1-1.4)	1.3 (1.2-1.5)	1.3 (1.1-1.4)	1.4 (1.3-1.6)	1.4 (1.3-1.6)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	1.3 (1.1-1.5)	1.3 (1.1-1.5)	1.3 (1.1-1.5)	↑
Abnormal test results*	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.7 (0.7-0.8)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	↑
Sinusitis acute/chronic	1.3 (1.2-1.4)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.4 (1.3-1.5)	1.3 (1.2-1.4)	1.4 (1.2-1.5)	1.3 (1.2-1.5)	1.3 (1.2-1.4)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	—
Malignant neoplasm, skin	1.1 (0.9-1.3)	1.2 (1.0-1.3)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	1.2 (1.0-1.3)	1.2 (1.0-1.3)	1.2 (1.1-1.4)	1.1 (1.0-1.2)	1.1 (0.9-1.2)	1.1 (1.0-1.2)	1.2 (1.0-1.3)	1.2 (1.0-1.3)	1.2 (1.0-1.3)	—
Bursitis/tendonitis/synovitis NOS	0.9 (0.8-1.0)	0.9 (0.9-1.0)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.1)	1.1 (1.1-1.2)	1.1 (1.1-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	↑
Solar keratosis/sunburn	1.3 (1.1-1.5)	1.3 (1.1-1.6)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.4 (1.1-1.6)	1.2 (1.1-1.4)	1.3 (1.1-1.4)	1.1 (1.0-1.3)	1.1 (0.9-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.3)	1.1 (1.0-1.3)	1.1 (1.0-1.3)	—

(continued)



Table 7.4 (continued): Most frequently managed problems, 2003–04 to 2012–13

Problem managed	Rate per 100 encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Headache*	1.4 (1.3–1.5)	1.2 (1.1–1.3)	1.2 (1.2–1.3)	1.3 (1.2–1.3)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	↓
Acute otitis media/ myringitis	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.2 (1.0–1.3)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	–
Ischaemic heart disease*	1.4 (1.2–1.5)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.1 (1.0–1.2)	1.3 (1.2–1.4)	1.2 (1.0–1.3)	1.1 (1.0–1.3)	1.1 (0.9–1.2)	1.1 (0.9–1.2)	1.1 (0.9–1.2)	↓
Oral contraception*	1.4 (1.2–1.5)	1.3 (1.2–1.4)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.1 (1.0–1.3)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	↓
Viral disease, other/NOS	1.3 (1.2–1.5)	1.2 (1.1–1.4)	1.2 (1.0–1.4)	1.1 (0.9–1.2)	1.2 (1.1–1.4)	1.2 (1.0–1.4)	1.1 (1.0–1.3)	1.2 (1.0–1.4)	1.2 (1.0–1.4)	1.2 (1.0–1.4)	1.0 (0.9–1.1)	↓
Laceration/cut	0.7 (0.6–0.7)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.8 (0.8–0.9)	0.9 (0.9–1.0)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	↑
Fracture*	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (1.0–1.1)	1.0 (0.9–1.1)	0.9 (0.9–1.0)	0.9 (0.8–0.9)	0.9 (0.9–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	–
Osteoporosis	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	–
Tonsillitis*	1.1 (1.0–1.2)	1.0 (0.9–1.2)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.2)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	↓
Observation/health education/advice/diet – all*	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	1.1 (0.9–1.3)	1.0 (0.8–1.3)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	–
Menopausal complaint	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	↓
<b>Total problems</b>	<b>146.3</b> <b>(144.4–148.2)</b>	<b>145.5</b> <b>(143.6–147.4)</b>	<b>146.2</b> <b>(144.2–148.2)</b>	<b>148.5</b> <b>(146.4–150.6)</b>	<b>151.3</b> <b>(149.2–153.4)</b>	<b>154.6</b> <b>(152.6–156.5)</b>	<b>153.3</b> <b>(151.1–155.5)</b>	<b>152.5</b> <b>(150.2–154.7)</b>	<b>153.8</b> <b>(151.4–156.1)</b>	<b>154.7</b> <b>(152.5–157.0)</b>	<b>154.7</b> <b>(152.5–157.0)</b>	↑

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.  
\* Includes multiple ICP-2 or ICP-2 PLUS codes (see Appendix 4, Table A4.1, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; NOS – not otherwise specified. This table includes individual problems that were managed at ≥ 1.0 per 100 encounters in any year.

Table 7.5: Most frequently managed new problems, 2003-04 to 2012-13

New problem managed	Rate per 100 encounters (95% CI)											(a)
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Upper respiratory tract infection	4.2 (3.8-4.5)	4.3 (4.0-4.6)	4.8 (4.4-5.2)	4.4 (4.1-4.8)	4.8 (4.4-5.2)	4.7 (4.4-5.0)	4.6 (4.3-5.0)	4.1 (3.8-4.5)	4.6 (4.3-5.0)	4.5 (4.1-4.9)	—	
Immunisation/vaccination – all*	2.9 (2.6-3.3)	2.7 (2.4-3.1)	2.7 (2.5-3.0)	2.8 (2.5-3.1)	2.8 (2.5-3.0)	2.8 (2.5-3.1)	4.3 (3.9-4.7)	3.0 (2.7-3.3)	2.6 (2.3-2.9)	3.1 (2.7-3.4)	§	
Check-up – all*	2.1 (1.9-2.3)	2.2 (2.0-2.4)	2.2 (2.1-2.4)	2.5 (2.3-2.7)	2.5 (2.3-2.7)	2.5 (2.3-2.7)	2.8 (2.6-3.0)	2.7 (2.4-2.9)	2.9 (2.6-3.1)	2.9 (2.7-3.1)	↑	
Acute bronchitis/bronchiolitis	1.8 (1.6-1.9)	1.7 (1.5-1.9)	1.9 (1.7-2.1)	1.6 (1.5-1.7)	1.7 (1.6-1.9)	1.9 (1.8-2.1)	1.7 (1.6-1.9)	1.8 (1.7-2.0)	1.8 (1.6-2.0)	1.7 (1.5-1.8)	—	
Urinary tract infection*	1.1 (1.0-1.1)	1.1 (1.0-1.1)	1.2 (1.1-1.3)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	1.0 (1.0-1.1)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	—	
Gastroenteritis*	1.3 (1.2-1.5)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	1.3 (1.2-1.5)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.2 (1.0-1.3)	1.0 (0.9-1.1)	↓	
Contact dermatitis	0.9 (0.8-0.9)	0.8 (0.8-0.9)	0.9 (0.8-0.9)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.7 (0.7-0.8)	0.8 (0.7-0.8)	0.8 (0.7-0.9)	0.9 (0.8-0.9)	—	
Sprain/strain*	1.0 (0.9-1.0)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-0.9)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	↓	
Viral disease, other/NOS	1.0 (0.9-1.1)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.9 (0.8-1.1)	0.9 (0.7-1.0)	0.9 (0.7-1.0)	0.9 (0.7-1.0)	0.9 (0.7-1.1)	0.8 (0.6-0.9)	↓	
<b>Total new problems</b>	<b>55.9 (54.5-57.3)</b>	<b>55.2 (53.8-56.5)</b>	<b>56.9 (55.5-58.2)</b>	<b>56.5 (55.1-57.9)</b>	<b>57.7 (56.3-59.1)</b>	<b>57.4 (56.0-58.7)</b>	<b>59.1 (57.6-60.5)</b>	<b>57.8 (56.4-59.3)</b>	<b>58.6 (57.1-60.0)</b>	<b>57.3 (55.7-58.8)</b>	—	

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

\* Includes multiple ICP-2 or ICP-2 PLUS codes (see Appendix 4, Table A4.1, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; NOS – not otherwise specified. This table includes individual new problems that were managed at ≥ 1.0 per 100 encounters in any year.

**Table 7.6: Most frequently managed chronic problems, 2003-04 to 2012-13**

Chronic problem managed	Rate per 100 encounters (95% CI)											<sup>(e)</sup> ↕
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Hypertension (non-gestational)**	9.2 (8.7-9.7)	8.9 (8.4-9.4)	9.4 (8.9-10.0)	9.5 (9.0-10.0)	9.9 (9.3-10.4)	10.1 (9.6-10.6)	9.1 (8.6-9.5)	8.7 (8.2-9.1)	9.0 (8.5-9.6)	8.6 (8.1-9.1)	—	
Diabetes (non-gestational)**	3.3 (3.0-3.5)	3.2 (3.0-3.4)	3.5 (3.3-3.7)	3.6 (3.4-3.9)	3.8 (3.6-4.1)	4.1 (3.8-4.3)	3.7 (3.5-3.9)	4.0 (3.7-4.2)	4.1 (3.9-4.4)	4.2 (3.9-4.5)	↗	
Depressive disorder**	3.6 (3.4-3.8)	3.7 (3.5-3.9)	3.6 (3.4-3.8)	3.7 (3.5-3.8)	3.9 (3.7-4.2)	4.2 (4.0-4.4)	4.2 (4.0-4.5)	4.2 (3.9-4.4)	4.4 (4.1-4.6)	4.1 (3.9-4.3)	↗	
Chronic arthritis**	4.0 (3.8-4.2)	3.9 (3.7-4.1)	3.8 (3.5-4.0)	3.7 (3.5-3.9)	3.6 (3.4-3.8)	3.8 (3.6-4.0)	3.9 (3.6-4.3)	3.7 (3.5-3.9)	3.9 (3.7-4.2)	3.8 (3.5-4.0)	—	
Lipid disorder	3.1 (2.9-3.4)	3.3 (3.1-3.6)	3.4 (3.1-3.7)	3.5 (3.2-3.7)	3.7 (3.4-4.0)	3.9 (3.7-4.2)	3.5 (3.2-3.7)	3.1 (2.8-3.3)	3.5 (3.3-3.7)	3.3 (3.1-3.6)	§	
Oesophageal disease	2.2 (2.0-2.4)	2.1 (2.0-2.3)	2.4 (2.2-2.5)	2.3 (2.1-2.5)	2.3 (2.2-2.5)	2.5 (2.3-2.7)	2.5 (2.3-2.7)	2.3 (2.1-2.5)	2.7 (2.5-2.8)	2.6 (2.4-2.8)	↗	
Asthma	2.6 (2.4-2.7)	2.3 (2.2-2.5)	2.3 (2.1-2.4)	2.3 (2.1-2.4)	2.2 (2.0-2.3)	2.2 (2.1-2.3)	2.1 (1.9-2.3)	2.2 (2.0-2.3)	2.0 (1.9-2.1)	2.2 (2.0-2.3)	↘	
Atrial fibrillation/flutter	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.3 (1.2-1.4)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.4 (1.2-1.5)	1.4 (1.3-1.6)	↗	
Malignant neoplasm, skin	1.1 (0.9-1.3)	1.2 (1.0-1.3)	1.0 (0.9-1.1)	1.1 (1.0-1.2)	1.2 (1.0-1.3)	1.2 (1.0-1.3)	1.2 (1.1-1.4)	1.1 (1.0-1.2)	1.1 (0.9-1.2)	1.2 (1.0-1.3)	—	
Ischaemic heart disease**	1.4 (1.2-1.5)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	1.1 (1.0-1.2)	1.3 (1.2-1.4)	1.2 (1.0-1.3)	1.1 (1.0-1.3)	1.1 (0.9-1.2)	1.1 (0.9-1.2)	↘	
Back syndrome with radiating pain**	0.9 (0.8-1.0)	0.9 (0.8-1.1)	0.9 (0.8-1.0)	0.9 (0.8-0.9)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.1)	—	
Hypothyroidism/myxoedema	0.5 (0.5-0.6)	0.6 (0.6-0.7)	0.7 (0.6-0.7)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.8 (0.7-0.8)	0.7 (0.6-0.7)	0.7 (0.7-0.8)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	↗	
Chronic obstructive pulmonary disease	0.7 (0.7-0.8)	0.8 (0.7-0.9)	0.7 (0.6-0.8)	0.8 (0.8-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	↗	

(continued)

Table 7.6 (continued): Most frequently managed chronic problems, 2003–04 to 2012–13

Chronic problem managed	Rate per 100 encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Osteoporosis	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	—
Shoulder syndrome (excluding arthritis)**	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	↑
Migraine	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	↓
Dementia (including senile, Alzheimer's)	0.5 (0.4–0.6)	0.5 (0.3–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.4 (0.3–0.5)	0.6 (0.4–0.7)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.6 (0.5–0.8)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	—
Obesity (BMI > 30)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.6 (0.5–0.6)	0.8 (0.6–0.9)	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.8 (0.6–1.0)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	—
Chronic skin ulcer (including varicose ulcer)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.6–0.7)	0.5 (0.5–0.6)	0.6 (0.6–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.7 (0.6–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	—
Gout	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	—
Heart failure	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	↓
Chronic pain NOS	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.5 (0.4–0.6)	↑
Anxiety disorder**	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.3–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	—
Schizophrenia	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	—
<b>Total chronic problems</b>	<b>51.9 (50.1–53.6)</b>	<b>51.7 (50.0–53.4)</b>	<b>52.1 (50.2–54.0)</b>	<b>53.3 (51.6–55.0)</b>	<b>54.0 (52.1–55.9)</b>	<b>56.9 (55.2–58.6)</b>	<b>54.2 (52.2–56.1)</b>	<b>53.1 (51.2–55.0)</b>	<b>55.6 (53.6–57.7)</b>	<b>55.7 (53.7–57.8)</b>	<b>55.7 (53.7–57.8)</b>	<b>↑</b>

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

\*\* Indicates that this group differs from that used for analysis in other sections of this chapter, as only chronic conditions were included in this analysis (see Appendix 4, Table A4.2, <hdl.handle.net/2123/9366>)

Note: CI – confidence interval; BMI – body mass index. This table includes individual chronic problems that were managed at >= 0.5 per 100 encounters in 2012–13.

## 8 Overview of management

This chapter provides an overview of management of problems in general practice from each of the most recent 10 years of the BEACH study from 2003–04 to 2012–13. More detailed analyses of the overview of management in 2012–13 can be found in Chapter 8 in *General practice activity in Australia 2012–13*.<sup>1</sup>

As discussed in Chapter 2 – Methods, we can consider changes in GP management actions over time in terms of the number of the selected actions per 100 GP–patient encounters, or in terms of the number of problems managed. If the number of problems managed on average at encounters had not altered it would not matter which way we measure(d) change.

However, as reported in Chapter 7, there was a significant increase in the number of problems managed at GP–patient encounters over the decade of this study. If we simply compared management actions (for example, number of prescriptions) as a rate per 100 encounters, we would be ignoring the fact that more problems were managed in 2012–13 than in

2003–04. If more problems are managed, more management actions should result, without any change having occurred in GP management actions.

In this, and the following management chapters, we report changes over time in two ways:

- rate (of the selected action) per 100 problems managed
- rate (of the selected action) per 100 encounters.

The rate per 100 problems managed gives the clearer idea of how GP management actions have (or have not) changed. The rate per 100 encounters is used as the basis of extrapolation to national estimated change.

The direction and type of change from 2003–04 to 2012–13 is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

Examples of extrapolations are provided in each of the specific management chapters (Chapters 9 to 12, inclusive). The method used to extrapolate to national change estimates is described in Section 2.9.

Between 2003–04 and 2012–13, some trends emerged in management actions per 100 problems managed (Table 8.1a), and per 100 encounters (Table 8.1b). The most noticeable changes in rates per 100 problems managed (from Table 8.1a) are listed below.

- There was a significant decrease in the rate of medications being prescribed/supplied by the GP/advised for over-the-counter purchase, from 71.3 per 100 problems managed in 2003–04 to 66.3 per 100 problems in 2012–13.
- The major contributor to the above change was a significant decrease in the rate of prescribed medications over the time period, from 58.8 to 53.8 per 100 problems. GP-supplied medications had significantly increased in 2008–09 and 2009–10, but decreased in 2010–11 to a rate not significantly different to the 2003–04 result.

- The introduction of MBS item numbers for practice nurse activity in 2005–06 led to a significant decrease in the rate at which clinical treatments were given by GPs, from a peak of 27.0 in 2004–05 to a low point of 19.9 per 100 problems managed in 2006–07. However, the rate of GP-provided clinical treatments then gradually increased such that there was no significant difference between the start and end of the decade. The original impact of practice nurses on this area of GP workload was no longer observed, suggesting that by 2012–13 GPs were again performing clinical treatments at a similar rate to that prior to the introduction of practice nurse item numbers.
- There was a significant increase in the rate at which procedural treatments were undertaken, from 10.1 per 100 problems managed in 2003–04 to 11.2 per 100 problems in 2012–13.
- The rate of referrals to other health providers significantly increased, from 8.0 to 9.5 per 100 problems between 2003–04 and 2012–13, influenced by referrals to allied health services, which almost doubled over the period (1.8 to 3.0 per 100 problems managed). It was further influenced by a marginal increase in referrals to emergency departments (0.1 to 0.2), and in ‘other referrals’ (0.3 to 0.4 per 100 problems managed). Conversely, the rate of referrals to hospital halved between 2003–04 and 2012–13.
- The rate of pathology tests/batteries orders significantly increased by 26%, from 24.1 tests/batteries per 100 problems managed in 2003–04 to 30.4 in 2012–13.
- The rate at which imaging was ordered increased significantly, from 5.6 imaging orders per 100 problems managed in 2003–04 to 6.7 per 100 in 2012–13.

Similar changes between 2003–04 and 2012–13 were apparent in the percentage of problems for which at least one management type was provided (Table 8.2a), and the proportion of encounters where at least one management type was recorded (Table 8.2b).

The proportion of problems for which:

- at least one medication or other treatment type was provided decreased significantly, from 75.0% of problems in 2003–04 to 71.2% in 2012–13
- at least one medication was provided decreased significantly (from 56.6% of problems in 2003–04 to 52.2% in 2012–13), mainly influenced by a significant decrease in the proportion of problems for which medication was prescribed, from 47.8% to 43.3% over this time. Both of these results influenced the finding above
- at least one GP-supplied medication was recorded did not increase significantly over the decade, but spiked in 2009–10 at the time of the H1N1 virus concerns. This correlates with the observed spike in vaccinations for the same period (Chapter 9)
- at least one procedure was undertaken, significantly increased from 9.4% in 2003–04 to 10.5% in 2012–13
- at least one referral was given, increased significantly (from 8.0% of problems in 2003–04 to 9.5% in 2012–13), particularly to allied health services (1.8% to 3.0%), and emergency departments (0.1% to 0.2%)
- at least one investigation was ordered, increased significantly from 16.5% in 2003–04 to 18.6% in 2012–13. In 2003–04, the likelihood of at least one pathology test being ordered was 11.9%, but this increased significantly to 13.5%. For imaging tests, the likelihood of at least one being ordered also increased significantly, from 5.1% to 5.9% of problems by 2012–13. There was a marginal decrease in the proportion of problems for which other investigations were ordered, from 0.7% to 0.5% over the 10-year data period.

**Table 8.1a: Summary of management (rate per 100 problems), 2003-04 to 2012-13**

Management type	Rate per 100 problems (95% CI)											<sup>(a)</sup>
	2003-04 (n = 144,674)	2004-05 (n = 137,330)	2005-06 (n = 149,088)	2006-07 (n = 136,333)	2007-08 (n = 145,078)	2008-09 (n = 149,462)	2009-10 (n = 155,373)	2010-11 (n = 146,141)	2011-12 (n = 152,286)	2012-13 (n = 152,517)		
Medications	71.3 (70.0-72.7)	69.8 (68.3-71.2)	71.4 (69.9-72.9)	68.4 (67.0-69.7)	67.9 (66.5-69.2)	68.7 (67.5-70.0)	69.5 (67.9-71.1)	69.0 (67.6-70.3)	69.6 (68.0-71.2)	66.3 (64.9-67.6)	↘	
Prescribed	58.8 (57.3-60.3)	57.3 (55.9-58.7)	58.7 (57.2-60.3)	56.1 (54.7-57.4)	54.5 (53.2-55.8)	55.9 (54.5-57.2)	54.4 (52.8-56.0)	55.8 (54.5-57.1)	56.5 (54.9-58.1)	53.8 (52.5-55.1)	↘	
GP-supplied	5.9 (5.2-6.5)	5.5 (5.0-6.0)	6.0 (5.6-6.5)	6.0 (5.5-6.5)	6.7 (6.3-7.1)	7.1 (6.6-7.6)	8.9 (8.3-9.5)	6.8 (6.2-7.3)	6.3 (5.8-6.8)	6.4 (5.9-6.9)	↔	
Advised OTC	6.7 (6.1-7.2)	6.9 (6.3-7.5)	6.7 (6.2-7.2)	6.3 (5.8-6.8)	6.7 (6.2-7.2)	5.7 (5.3-6.1)	6.2 (5.7-6.7)	6.4 (5.9-6.9)	6.8 (6.3-7.4)	6.1 (5.5-6.7)	↔	
Other treatments	35.1 (33.5-36.7)	37.6 (36.0-39.2)	29.9 (28.5-31.2)	30.1 (28.6-31.5)	33.9 (32.4-35.3)	32.8 (31.5-34.1)	34.3 (32.6-36.0)	34.4 (32.7-36.0)	35.1 (33.5-36.7)	34.9 (33.2-36.5)	↔	
Clinical*	25.0 (23.6-26.4)	27.0 (25.6-28.3)	20.0 (18.8-21.2)	19.9 (18.7-21.1)	22.8 (21.6-24.1)	22.0 (20.8-23.2)	22.8 (21.3-24.3)	23.0 (21.8-24.8)	24.0 (22.6-25.5)	23.6 (22.2-25.1)	↔	
Procedural*	10.1 (9.6-10.6)	10.6 (10.0-11.3)	9.9 (9.4-10.3)	10.2 (9.7-10.7)	11.0 (10.5-11.6)	10.8 (10.4-11.3)	11.4 (10.8-12.1)	11.1 (10.6-11.6)	11.0 (10.5-11.5)	11.2 (10.7-11.8)	↗	
Referrals & admissions	8.0 (7.6-8.3)	7.9 (7.7-8.2)	8.2 (7.9-8.5)	8.2 (7.9-8.6)	8.3 (8.0-8.6)	8.9 (8.6-9.2)	8.7 (8.4-9.0)	9.3 (8.9-9.6)	9.4 (9.1-9.8)	9.5 (9.2-9.9)	↗	
Medical specialist*	5.4 (5.1-5.6)	5.3 (5.1-5.5)	5.6 (5.4-5.8)	5.4 (5.2-5.7)	5.3 (5.1-5.5)	5.8 (5.6-6.0)	5.5 (5.3-5.7)	5.6 (5.4-5.9)	5.6 (5.3-5.8)	5.7 (5.5-6.0)	↔	
Allied health services*	1.8 (1.7-1.9)	1.9 (1.7-2.0)	2.0 (1.8-2.1)	2.1 (1.9-2.2)	2.3 (2.1-2.4)	2.5 (2.3-2.7)	2.6 (2.4-2.7)	2.8 (2.6-2.9)	3.0 (2.8-3.2)	3.0 (2.8-3.2)	↗	
Hospital*	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.3)	↘	

(continued)

Table 8.1a (continued): Summary of management (rate per 100 problems), 2003–04 to 2012–13

Management type	Rate per 100 problems (95% CI)											(a)
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Emergency department*	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	↑
Other referrals*	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	↑
Pathology	24.1 (23.1–25.0)	25.2 (24.3–26.2)	26.4 (25.3–27.5)	28.6 (27.5–29.6)	28.5 (27.4–29.6)	29.5 (28.4–30.5)	29.3 (28.2–30.4)	29.6 (28.6–30.7)	30.6 (29.3–31.8)	30.4 (29.3–31.5)	30.4 (29.3–31.5)	↑
Imaging	5.6 (5.4–5.9)	5.7 (5.5–5.9)	6.0 (5.8–6.3)	6.0 (5.8–6.3)	6.3 (6.1–6.5)	6.3 (6.1–6.6)	6.4 (6.1–6.6)	6.4 (6.1–6.7)	6.6 (6.3–6.8)	6.7 (6.4–6.9)	6.7 (6.4–6.9)	↑
Other investigations	0.7 (0.6–0.8)	0.8 (0.7–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	—

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

\* Includes multiple ICP-2 or ICP-2 PLUS codes (see Appendix 4 <hdl.handle.net/2123/9366>)

Note: CI – confidence interval; OTC – over-the-counter.



**Table 8.1b: Summary of management (rate per 100 encounters), 2003-04 to 2012-13**

Management type	Rate per 100 encounters (95% CI)											<sup>(a)</sup> ↕
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Medications	104.4 (102.1-106.7)	101.5 (99.3-103.8)	104.4 (101.8-107.0)	101.5 (99.2-103.9)	102.7 (100.3-105.0)	106.3 (104.0-108.5)	106.6 (103.6-109.5)	105.2 (102.8-107.6)	107.0 (104.1-11.0.)	102.5 (100.2-104.9)	—	
Prescribed	86.0 (83.6-88.5)	83.4 (81.2-85.6)	85.8 (83.3-88.4)	83.3 (81.0-85.5)	82.4 (80.3-84.6)	86.4 (84.1-88.6)	83.4 (80.6-86.2)	85.1 (82.9-87.3)	86.8 (84.0-89.7)	83.2 (81.0-85.5)	—	
GP-supplied	8.6 (7.6-9.6)	8.1 (7.3-8.8)	8.8 (8.2-9.5)	8.9 (8.2-9.6)	10.1 (9.5-10.7)	11.0 (10.2-11.8)	13.6 (12.7-14.6)	10.3 (9.5-11.2)	9.7 (8.9-10.5)	9.9 (9.1-10.7)	§	
Advised OTC	9.8 (9.0-10.5)	10.1 (9.2-10.9)	9.8 (9.0-10.5)	9.4 (8.7-10.1)	10.1 (9.3-10.9)	8.9 (8.3-9.4)	9.5 (8.7-10.3)	9.8 (9.0-10.5)	10.5 (9.7-11.3)	9.4 (8.4-10.3)	—	
Other treatments	51.4 (48.9-53.8)	54.7 (52.1-57.3)	43.6 (41.5-45.8)	44.7 (42.3-47.0)	51.2 (48.9-53.6)	50.7 (48.5-52.9)	52.5 (49.8-55.3)	52.4 (49.8-55.1)	53.9 (51.2-56.6)	53.9 (51.2-56.7)	§	
Clinical*	36.6 (34.5-38.7)	39.2 (37.1-41.4)	29.2 (27.3-31.1)	29.5 (27.6-31.4)	34.5 (32.5-36.5)	34.0 (32.1-35.9)	35.0 (32.6-37.4)	35.5 (33.2-37.8)	37.0 (34.6-39.3)	36.5 (34.2-38.9)	§	
Procedural*	14.7 (14.0-15.5)	15.5 (14.6-16.4)	14.4 (13.7-15.1)	15.2 (14.4-16.0)	16.7 (15.9-17.5)	16.7 (16.0-17.5)	17.5 (16.5-18.6)	16.9 (16.1-17.8)	16.9 (16.1-17.8)	17.4 (16.5-18.3)	↕	
Referrals & admissions	11.6 (11.1-12.2)	11.5 (11.1-12.0)	12.0 (11.5-12.5)	12.2 (11.7-12.7)	12.5 (12.0-13.0)	13.7 (13.2-14.2)	13.3 (12.8-13.8)	14.1 (13.5-14.7)	14.5 (13.9-15.1)	14.8 (14.2-15.4)	↕	
Medical specialist*	7.9 (7.5-8.2)	7.7 (7.4-8.0)	8.2 (7.8-8.5)	8.0 (7.7-8.4)	8.0 (7.6-8.3)	9.0 (8.7-9.3)	8.4 (8.1-8.8)	8.6 (8.2-9.0)	8.6 (8.2-8.9)	8.9 (8.5-9.3)	↕	
Allied health services*	2.6 (2.4-2.8)	2.7 (2.5-2.9)	2.9 (2.7-3.1)	3.1 (2.9-3.3)	3.4 (3.2-3.7)	3.9 (3.6-4.1)	3.9 (3.7-4.2)	4.2 (3.9-4.5)	4.7 (4.4-5.0)	4.7 (4.4-5.0)	↕	
Hospital*	0.6 (0.5-0.6)	0.5 (0.4-0.5)	0.4 (0.3-0.4)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	—	

(continued)

Table 8.1b (continued): Summary of management (rate per 100 encounters), 2003–04 to 2012–13

Management type	Rate per 100 encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Emergency department*	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.3 (0.3–0.3)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	↑
Other referrals*	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.3 (0.2–0.4)	0.4 (0.3–0.5)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	↑
Pathology	35.2 (33.7–36.8)	36.7 (35.2–38.2)	38.6 (36.9–40.3)	42.4 (40.7–44.2)	43.1 (41.3–45.0)	45.6 (43.8–47.4)	45.0 (43.1–46.9)	45.2 (43.4–47.0)	47.0 (44.9–49.1)	47.1 (45.1–49.0)	47.1 (45.1–49.0)	↑
Imaging	8.2 (7.8–8.6)	8.3 (8.0–8.6)	8.8 (8.4–9.2)	9.0 (8.6–9.3)	9.5 (9.2–9.9)	9.8 (9.4–10.2)	9.8 (9.3–10.1)	9.8 (9.4–10.2)	10.1 (9.6–10.5)	10.3 (9.9–10.8)	10.3 (9.9–10.8)	↑
Other investigations	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.0 (0.9–1.1)	1.1 (0.9–1.2)	1.0 (0.8–1.1)	1.0 (0.9–1.1)	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	—

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

\* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 4 <hdl.handle.net/2123/9366>)

Note: CI – confidence interval; OTC – over-the-counter.

Table 8.2a: Problems for which at least one management was recorded (per cent of problems), 2003–04 to 2012–13

At least one ...	Per cent of problems (95% CI)											↑ ↓ <sup>(a)</sup>
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Management type	86.8 (86.2–87.4)	87.1 (86.4–87.7)	86.2 (85.6–86.9)	85.3 (84.6–85.9)	86.3 (85.6–86.9)	86.3 (85.6–86.9)	85.8 (85.1–86.4)	85.9 (85.3–86.5)	86.8 (86.1–87.4)	85.1 (84.3–85.9)	–	
Medication or other treatment	75.0 (74.2–75.8)	74.9 (74.1–75.7)	73.5 (72.7–74.4)	71.8 (70.9–72.6)	73.2 (72.4–74.1)	72.9 (72.1–73.7)	72.8 (71.9–73.7)	72.4 (71.5–73.3)	73.4 (72.6–74.3)	71.2 (70.3–72.2)	↓	
Medication	56.6 (55.7–57.6)	55.2 (54.2–56.2)	56.5 (55.4–57.5)	54.5 (53.5–55.5)	54.1 (53.1–55.1)	54.3 (53.4–55.3)	54.2 (53.2–55.1)	54.0 (53.1–55.0)	54.8 (53.8–55.8)	52.2 (51.3–53.2)	↓	
Prescription	47.8 (46.7–48.9)	46.7 (45.7–47.8)	47.7 (46.6–48.8)	45.6 (44.6–46.6)	44.4 (43.5–45.4)	44.9 (43.9–45.8)	43.2 (42.1–44.3)	44.7 (43.7–45.6)	45.4 (44.3–46.5)	43.3 (42.3–44.3)	↓	
GP-supplied	4.8 (4.2–5.3)	6.2 (5.7–6.7)	4.5 (4.2–4.9)	4.7 (4.3–5.1)	5.3 (5.0–5.7)	5.7 (5.3–6.1)	7.2 (6.7–7.7)	5.4 (5.0–5.8)	5.0 (4.7–5.4)	5.1 (4.8–5.5)	§	
Advised OTC	6.0 (5.6–6.5)	4.4 (4.0–4.7)	6.0 (5.6–6.5)	5.8 (5.4–6.2)	6.1 (5.6–6.5)	5.3 (4.9–5.6)	5.6 (5.1–6.0)	5.8 (5.4–6.2)	6.2 (5.7–6.7)	5.5 (5.0–6.0)	–	
Other treatment	30.5 (29.3–31.8)	32.4 (31.1–33.6)	26.9 (25.8–28.1)	27.0 (25.8–28.2)	30.2 (29.1–31.4)	29.3 (28.2–30.4)	30.3 (29.0–31.7)	30.4 (29.1–31.7)	30.7 (29.4–31.9)	30.6 (29.3–31.9)	–	
Clinical treatment	22.2 (21.0–23.3)	23.7 (22.5–24.8)	18.3 (17.2–19.3)	18.0 (17.0–19.1)	20.6 (19.6–21.7)	20.0 (18.9–21.0)	20.6 (19.3–21.8)	20.9 (19.6–22.1)	21.4 (20.2–22.6)	21.0 (19.8–22.2)	§	
Procedural treatment	9.4 (8.9–9.8)	9.8 (9.3–10.3)	9.3 (8.7–9.7)	9.6 (9.2–10.1)	10.3 (9.8–10.8)	10.1 (9.7–10.5)	10.7 (10.1–11.3)	10.4 (9.9–10.9)	10.3 (9.8–10.7)	10.5 (10.0–11.0)	↑	
Referrals & admissions	8.0 (7.6–8.3)	7.9 (7.7–8.2)	8.2 (7.9–8.5)	8.3 (8.0–8.6)	8.3 (8.0–8.6)	8.9 (8.5–9.2)	8.7 (8.4–9.0)	9.2 (8.9–9.5)	9.3 (9.0–9.7)	9.5 (9.1–9.8)	↑	
Medical specialist*	5.4 (5.2–5.7)	5.4 (5.2–5.6)	5.6 (5.4–5.9)	5.5 (5.3–5.8)	5.3 (5.1–5.5)	5.9 (5.7–6.1)	5.6 (5.4–5.8)	5.7 (5.5–5.9)	5.6 (5.4–5.9)	5.8 (5.5–6.1)	–	
Allied health services*	1.8 (1.7–2.0)	1.9 (1.7–2.0)	2.0 (1.8–2.1)	2.1 (1.9–2.2)	2.3 (2.2–2.4)	2.5 (2.4–2.7)	2.6 (2.4–2.7)	2.7 (2.6–2.9)	3.0 (2.8–3.2)	3.0 (2.8–3.2)	↑	
Hospital*	0.4 (0.3–0.5)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	↓	

(continued)

Table 8.2a (continued): Problems for which at least one management was recorded (per cent of problems), 2003–04 to 2012–13

At least one ...	Per cent of problems (95% CI)										(a)	
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Emergency department*	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	↑
Other referrals*	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.4 (0.3–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	↑
Investigation	16.5 (16.0–17.0)	16.9 (16.4–17.3)	17.6 (17.1–18.1)	18.2 (17.7–18.7)	18.1 (17.6–18.6)	18.5 (18.0–19.0)	18.1 (17.6–18.6)	18.2 (17.7–18.7)	18.6 (18.1–19.2)	18.6 (18.1–19.2)	18.6 (18.1–19.2)	↑
Pathology order	11.9 (11.5–12.4)	12.2 (11.8–12.6)	12.7 (12.2–13.2)	13.4 (13.0–13.9)	13.1 (12.7–13.6)	13.6 (13.2–14.0)	13.2 (12.8–13.7)	13.3 (12.9–13.7)	13.6 (13.1–14.1)	13.5 (13.1–14.0)	13.5 (13.1–14.0)	↑
Imaging order	5.1 (4.8–5.3)	5.2 (5.0–5.4)	5.5 (5.3–5.7)	5.5 (5.3–5.7)	5.7 (5.4–5.9)	5.7 (5.4–5.9)	5.7 (5.5–6.0)	5.7 (5.5–5.9)	5.8 (5.6–6.1)	5.9 (5.7–6.2)	5.9 (5.7–6.2)	↑
Other investigation	0.7 (0.6–0.7)	0.7 (0.7–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.6 (0.6–0.7)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	↓

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval; OTC – over-the-counter.

**Table 8.2b: Encounters at which at least one management was recorded (per cent of encounters), 2003-04 to 2012-13**

At least one...	Per cent of encounters (95% CI)												<sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)			
Management type	91.5 (90.9-92.0)	91.9 (91.3-92.5)	91.2 (90.6-91.8)	90.4 (89.8-91.0)	91.9 (91.3-92.4)	92.2 (91.7-92.7)	91.3 (90.7-91.9)	91.5 (90.8-92.1)	91.9 (91.3-92.5)	90.7 (90.1-91.3)		↔	
Medication or other treatment	82.3 (81.5-83.1)	82.4 (81.6-83.2)	81.4 (80.6-82.1)	79.9 (79.1-80.8)	82.2 (81.4-82.9)	82.4 (81.7-83.1)	81.6 (80.8-82.4)	81.4 (80.5-82.3)	81.9 (81.1-82.8)	80.5 (79.6-81.3)		↘	
Medication	65.6 (64.7-66.5)	64.3 (63.4-65.2)	65.2 (64.3-66.2)	63.9 (63.0-64.9)	64.4 (63.4-65.3)	65.1 (64.3-65.9)	64.6 (63.6-65.5)	64.7 (63.8-65.6)	65.1 (64.2-66.0)	62.8 (61.9-63.7)		↘	
Prescription	55.7 (54.6-56.9)	54.8 (53.8-55.8)	55.6 (54.5-56.6)	54.1 (53.2-55.1)	53.6 (52.6-54.5)	54.6 (53.7-55.5)	52.4 (51.3-53.4)	54.3 (53.3-55.2)	54.5 (53.5-55.5)	52.8 (51.8-53.7)		↘	
GP-supplied	6.5 (5.8-7.3)	6.2 (5.7-6.7)	6.4 (6.0-6.9)	6.8 (6.3-7.3)	7.9 (7.4-8.4)	8.5 (7.9-9.1)	10.5 (9.8-11.2)	8.0 (7.4-8.6)	7.4 (6.9-7.9)	7.7 (7.1-8.2)		§	
Advised OTC	8.7 (8.0-9.3)	8.7 (8.1-9.4)	8.6 (8.0-9.2)	8.4 (7.8-8.9)	8.9 (8.3-9.6)	8.0 (7.5-8.5)	8.3 (7.6-8.9)	8.6 (8.0-9.2)	9.3 (8.9-9.9)	8.2 (7.5-9.0)		↔	
Other treatment	39.3 (37.8-40.8)	41.2 (39.7-42.8)	35.1 (33.7-36.6)	35.3 (33.8-36.9)	39.9 (38.3-41.4)	39.6 (38.3-41.0)	40.3 (38.5-42.0)	40.1 (38.4-41.7)	40.5 (38.9-42.1)	40.7 (39.0-42.3)		↔	
Clinical treatment	28.9 (27.4-30.3)	30.5 (29.1-32.0)	24.0 (22.7-25.4)	23.8 (22.5-25.2)	27.5 (26.1-28.9)	27.3 (26.0-28.6)	27.7 (26.3-29.2)	27.9 (26.3-29.5)	28.5 (26.9-30.0)	28.3 (26.8-29.9)		§	
Procedural treatment	13.3 (12.7-13.9)	13.8 (13.1-14.6)	13.2 (12.6-13.8)	13.8 (13.2-14.5)	15.0 (14.3-15.7)	15.0 (14.4-15.6)	15.7 (14.8-16.6)	15.1 (14.4-15.8)	15.2 (14.5-15.8)	15.6 (14.9-16.3)		↗	
Referrals & admissions	11.0 (10.5-11.5)	10.9 (10.5-11.3)	11.3 (10.9-11.8)	11.5 (11.0-11.9)	11.8 (11.3-12.2)	12.8 (12.3-13.2)	12.4 (11.9-12.9)	13.0 (12.5-13.5)	13.3 (12.8-13.8)	13.5 (13.0-14.1)		↗	
Medical specialist*	7.6 (7.3-8.0)	7.5 (7.2-7.8)	7.9 (7.5-8.2)	7.7 (7.4-8.0)	7.7 (7.4-8.0)	8.6 (8.3-8.9)	8.1 (7.7-8.5)	8.2 (7.9-8.6)	8.2 (7.9-8.5)	8.5 (8.1-8.9)		↗	
Allied health services*	2.5 (2.3-2.7)	2.6 (2.5-2.8)	2.8 (2.6-3.0)	3.0 (2.8-3.1)	3.3 (3.1-3.5)	3.7 (3.5-3.9)	3.7 (3.5-3.9)	3.9 (3.7-4.2)	4.3 (4.1-4.6)	4.3 (4.1-4.6)		↗	
Hospital*	0.6 (0.5-0.6)	0.5 (0.4-0.5)	0.4 (0.3-0.4)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)		↘	

(continued)

Table 8.2b (continued): Encounters at which at least one management was recorded (per cent of encounters), 2003–04 to 2012–13

At least one ...	Per cent of encounters (95% CI)										2012–13 (n = 98,564) ↑ <sup>(a)</sup> ↓
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)	
Emergency department*	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	↑
Other referrals*	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.3 (0.2–0.4)	0.4 (0.3–0.5)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	↑
Investigation	21.3 (20.7–22.0)	21.7 (21.1–22.4)	22.6 (21.9–23.3)	23.5 (22.8–24.2)	23.8 (23.1–24.5)	24.6 (23.9–25.3)	24.2 (23.5–24.9)	24.1 (23.4–24.8)	24.7 (24.0–25.4)	24.7 (24.0–25.5)	↑
Pathology order	15.5 (14.9–16.1)	15.7 (15.2–16.3)	16.4 (15.8–16.9)	17.4 (16.8–18.0)	17.4 (16.7–18.0)	18.2 (17.6–18.8)	17.7 (17.1–18.3)	17.8 (17.2–18.4)	18.1 (17.4–18.7)	18.1 (17.4–18.7)	↑
Imaging order	7.2 (6.9–7.5)	7.3 (7.0–7.6)	7.8 (7.4–8.1)	7.9 (7.6–8.2)	8.3 (8.0–8.6)	8.5 (8.1–8.8)	8.5 (8.2–8.9)	8.4 (8.0–8.7)	8.6 (8.3–9.0)	8.8 (8.4–9.2)	↑
Other investigation	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	§

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval; OTC – over-the-counter.

## 9 Medications

This chapter summarises the medications prescribed, advised or supplied by general practitioners in each year of the BEACH study from 2003–04 to 2012–13. The direction and type of change over the study period is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

Significant change in the rate per 100 encounters can be extrapolated to estimate the national increase or decrease in the number of prescribed, supplied, or advised medications between the first and last years of the study period. Some examples of extrapolated changes are given in this chapter. The method used to extrapolate to national change estimates is described fully in Section 2.9. In 2012–13, there were 30.5 million more encounters claimed through Medicare than there were in 2003–04 (126.8 million versus 96.3 million). It should be noted that because of this increase, it is possible that a rate of medication per 100 encounters that shows a decrease over time can result in an increase in the extrapolated national estimates of that medication.

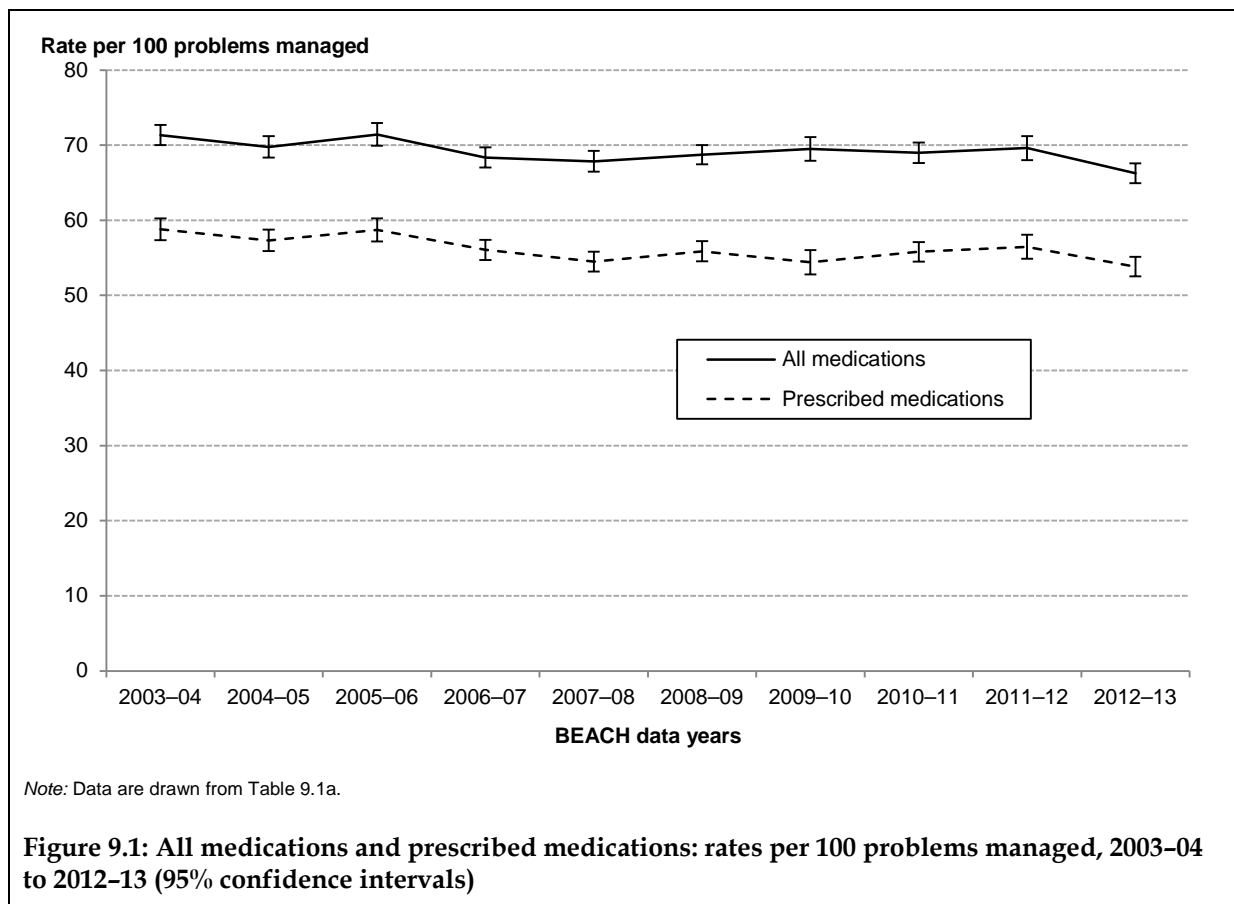
GPs could record up to four medications for each of four problems – a maximum of 16 medications per encounter. Each medication could be recorded as prescribed (the default), supplied by the GP, or recommended for over-the-counter (OTC) purchase.

Medication data for the 10 years 2003–04 to 2012–13, are reported in two ways in this chapter: as rates per 100 problems managed and as rates per 100 encounters. In describing data over time, the rates per 100 problems are reported as the primary measure, because there was a significant increase in the number of problems managed per encounter over the decade (see Chapter 7).

The tables with rates per 100 encounters are included to show the basis for the extrapolations discussed above. Changes discussed in the examples below are per 100 problems managed and are taken from results shown in Tables 9.1a, 9.2a, 9.3a, 9.4a, 9.5a and 9.6a. On the other hand, the extrapolations are based on rate per 100 encounters so that they are equivalent to the national encounter data from Medicare. These extrapolations are therefore based on results shown in Tables 9.1b, 9.2b, 9.3b, 9.4b, 9.5b and 9.6b.

Figure 9.1 shows that between 2003–04 and 2012–13, there was a significant decrease in total medication and prescribed medication rates per 100 problems managed. However, Table 9.1b shows there were no significant changes per 100 encounters.

The peak in rate of GP-supplied medications in 2009–10 (Tables 9.1a and 9.1b) reflects a high rate of influenza virus vaccine which coincided with the H1N1 influenza pandemic of 2009.



## 9.1 Prescribed medications

The rate at which medications were prescribed per 100 problems managed decreased significantly from 2003-04 (58.8 per 100 problems) to 2012-13 (53.8 per 100) (Table 9.1a). There was no significant change per 100 encounters (Table 9.1b). However, the extrapolated national effect of the increased number of encounters (described above) resulted in an estimated 22.8 million more prescriptions being given nationally by GPs in 2012-13 than in 2003-04. Tables 9.2a and 9.2b show prescribing rates of common drug groups over the 10-year period at ATC drug group Level 2, because it is more stable than the lower ATC levels. There were significant changes in GP prescribing rates per 100 problems managed for a wide range of drug groups (Table 9.2a). In particular, there were measured increases in the prescription rate of:

- agents acting on the renin-angiotensin system, from 3.7 per 100 problems managed in 2003-04 to 4.2 in 2012-13. The extrapolated national effect of this change (calculated from the encounter rate from Table 9.2b) was about 2.9 million more prescriptions for drugs in this group given in 2012-13 than in 2003-04
- psychoanaleptics, from 2.2 per 100 problems in 2003-04 to 2.6 per 100 in 2012-13, with an extrapolated national effect of about 2 million more prescriptions for psychoanaleptics nationally in 2012-13 than in 2003-04



- lipid modifying agents, from 1.9 per 100 problems in 2003–04 to 2.5 in 2012–13. The extrapolated national effect of this change was that about 2.2 million more prescriptions for drugs in this group were given in 2012–13 than in 2003–04
- corticosteroids for systemic use, from 0.9 per 100 problems in 2003–04 to 1.1 in 2012–13, an estimated 900,000 more prescriptions nationally in 2012–13 than in 2003–04
- ‘other’ nervous system drugs (this group comprises parasympathomimetics, drugs for addictive disorders and antivertigo medications), from 0.2 per 100 problems in 2003–04 to 0.6 in 2012–13, with an extrapolated national effect of 850,000 more prescriptions.

There were also significant decreases in the prescribing rate per 100 problems managed for some drug groups. As earlier suggested, the increase in number of encounters claimed through Medicare over the decade could cause the decreases in medication numbers in the extrapolated national estimates to be less than they would have been had Medicare encounter figures remained steady (some extrapolated estimates even showed an increase). As shown in Table 9.2a, some of the measured decreases in the prescription rate per 100 problems were for:

- drugs for obstructive airway disease, from 2.8 per 100 problems managed in 2003–04 to 2.3 in 2012–13, but the extrapolated national effect of this change (calculated on the encounter rate from Table 9.2b) was that about 620,000 more prescriptions for drugs in this group were given in 2012–13 than in 2003–04 due to the increase in encounter numbers nationally
- anti-inflammatory and antirheumatic products, from 3.3 per 100 problems in 2003–04 to 1.9 in 2012–13, with an extrapolated national effect of about 820,000 fewer prescriptions for these products nationally in 2012–13 than in 2003–04
- sex hormones and modulators of the genital system, from 2.4 per 100 problems in 2003–04 to 1.5 in 2012–13, with an extrapolated national effect of about 450,000 fewer prescriptions for them nationally in 2012–13 than in 2003–04
- calcium channel blockers, from 1.5 per 100 problems in 2003–04 to 1.1 in 2012–13, with an extrapolated national effect of about 90,000 fewer prescriptions for them nationally in 2012–13 than in 2003–04
- vaccines, from 2.3 per 100 problems in 2003–04 to 0.7 in 2012–13, an estimated decrease of 1.8 million vaccine prescriptions nationally in 2012–13 than in 2003–04
- diuretics, from 1.1 per 100 problems in 2003–04 to 0.7 in 2012–13, suggesting 50,000 fewer diuretic prescriptions nationally in 2012–13 than in 2003–04
- drugs for functional gastrointestinal disorders, from 0.6 per 100 problems in 2003–04 to 0.4 in 2012–13, and again the extrapolated national effect of this change suggested 21,000 more prescriptions for these drugs nationally in 2012–13 than in 2003–04 due to the increase in attendance rates
- cardiac therapy (which comprises antiarrhythmics, cardiac stimulants and vasodilators), from 0.7 per 100 problems in 2003–04 to 0.4 in 2012–13, suggesting 170,000 fewer of these prescriptions nationally in 2012–13 than in 2003–04.

Some of the changes referred to here can be linked to changes in the patterns of morbidity managed, for example, the rise in psychoanaleptics coincides with the significant increase in management rates of psychological problems. Other changes coincide with policy initiatives such as the rise in rates of lipid modifying agents which accelerated in 2006–07 when criteria for subsidised access to these medications through the Pharmaceutical Benefits Scheme (PBS) were broadened.

Decreases in prescribing rates of drug groups can sometimes be linked to medications within the group becoming available over-the-counter (e.g. salbutamol; the 'morning after pill' contraceptive); becoming more likely to be supplied directly to the patient by the GP (e.g. vaccines); or being included in combination medication products (e.g. diuretics).

When no statistically significant change occurs in the prescribing rate per 100 problems managed, there may still be a national increase due to the increased attendance rates. An example of this is prescriptions for analgesics, the rate of which remained steady over the study period. However, we estimate that due to the increase in attendances, about 3.5 million more were prescribed in 2012–13 than in 2003–04.

Tables 9.3a and 9.3b show prescribed medication rates at the individual generic level. The same effect of the increased number of Medicare encounters over time applies to these individual drugs. There were significant changes in GP prescribing rate per 100 problems for a number of drugs, including an increased prescription rate per 100 problems managed for:

- the antibiotic cephalexin, which rose from 1.4 per 100 problems in 2003–04 to 1.7 in 2012–13, an extrapolated increase of 1.4 million between the two study points, although prescribing rates have remained fairly steady for this drug over the decade
- the opioid oxycodone, which demonstrated a near fourfold increase from 0.3 per 100 problems managed in 2003–04 to 1.1 in 2012–13, with an extrapolated national effect of about 1.6 million more prescriptions for oxycodone nationally in 2012–13 than ten years earlier (calculated from the encounter rate in Table 9.3b)
- the proton pump inhibitor esomeprazole, which also showed a substantial increase from 0.4 per 100 problems in 2003–04 to 1.0 per 100 in 2012–13 with an extrapolated national effect of 1.5 million more esomeprazole prescriptions given in 2012–13 than in 2003–04
- the lipid modifying agent rosuvastatin, which was first listed on the PBS in December 2006, and rose from 0.2 per 100 problems in 2007–08 to 0.8 per 100 in 2012–13 – an estimated 1.2 million more prescriptions in 2012–13 nationally
- the non-steroid anti-inflammatory meloxicam from 0.3 per 100 problems in 2003–04 to 0.5 in 2012–13, suggesting 630,000 more prescriptions for meloxicam nationally in 2012–13 than in 2003–04.

In 2012–13 a large number of medications were prescribed less frequently than in 2003–04, some decreases being associated with current over-the-counter availability, GP direct supply, inclusion in a combination medication, or being superseded by newer drugs within the group. Some of the decreases observed in the prescription rate per 100 problems were for:

- the beta-blocking agent atenolol, from 0.7 per 100 problems in 2003–04 to 0.4 per 100 problems in 2012–13 with an extrapolated national effect of about 75,000 fewer prescriptions for this product nationally in 2012–13 than in 2003–04
- the non-steroid anti-inflammatory celecoxib, from 0.7 per 100 problems in 2003–04 to 0.4 in 2012–13, suggesting 200,000 fewer prescriptions nationally for celecoxib in 2012–13 than in 2003–04
- the lipid modifying agent simvastatin, from 0.7 per 100 problems in 2003–04 to 0.3 in 2012–13, an extrapolated national decrease of 330,000 thousand prescriptions for simvastatin given in 2012–13 than in 2003–04
- the cephalosporin cefaclor monohydrate, from 0.6 per 100 problems in 2003–04 to 0.2 in 2012–13, giving an estimated 260,000 fewer prescriptions for cefaclor at the end of the decade.

## Number of repeats ordered

The pattern of the number of repeat prescriptions recorded by GPs changed between 2003–04 and 2012–13 (Table 9.4). There was a significant decrease in the proportion of prescribed medications with no repeats, two, three or four repeats ordered. On the other hand, there was a significant increase in the proportion of prescriptions for which five repeats were recorded. The proportion of prescriptions given with five repeats increased from 29.2% in 2003–04 to 36.6% in 2012–13. This is probably associated with the increased management rate of chronic problems for which prescriptions are commonly written with five repeats.

## 9.2 Medications supplied by GPs

Rates of GP-supplied medications per 100 problems managed were similar in 2003–04 (5.9) and in 2012–13 (6.4) (Table 9.1a). Per 100 encounters, the rates were also similar in 2003–04 (8.6) and in 2012–13 (9.9) (Table 9.1b).

Table 9.5a shows rates per 100 problems managed of individual medications most frequently supplied by GPs between 2003–04 and 2012–13. The majority were vaccines; and rates for many of them increased significantly over the period. The supply of influenza virus vaccine doubled from 0.8 per 100 problems managed in 2003–04 to 1.5 per 100 in 2012–13. The rate per 100 encounters increased from 1.2 to 2.3 (Table 9.5b), and the extrapolated national effect of this change is that influenza virus vaccine was supplied 1.8 million more times in 2012–13 than in 2003–04. The move away from prescribing towards GP supply of the vaccine was evident in this significant increase in its supply, which coincided with the significant decrease in its prescribing rate (Table 9.3a). This change followed federal government policy from 2001, which made the vaccine available free of charge to all Australians aged 65 years and over, to Aboriginal and Torres Strait Islander people aged 50 years and older, and to younger Aboriginal and Torres Strait Islander persons with health risks. Vaccines can be ordered by the GP directly from the supplier. In Tables 9.5a and 9.5b, one can also see the 2009–10 peak in the rate of influenza virus vaccine coinciding with the H1N1 influenza pandemic of 2009.

## 9.3 Medications advised for over-the-counter purchase

Table 9.6a shows rates per 100 problems managed for the most commonly advised over-the-counter medications at the generic level. Rates for individual and total medications largely remained steady between 2003–04 and 2012–13. The exception was a four-fold increase in the rate vitamin D3 (cholecalciferol) was advised per 100 encounters (Table 9.6b). The increase became apparent in 2008–09, in parallel with a three-fold increase in the management rate of nutritional/vitamin deficiency (see Chapter 7).

**Table 9.1a: Rates of medications prescribed, advised for over-the-counter purchase, supplied (rate per 100 problems), 2003-04 to 2012-13**

	Rate per 100 problems (95% CI)										
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	(a)
<b>Medications</b>	<b>(n = 144,674)</b>	<b>(n = 137,330)</b>	<b>(n = 149,088)</b>	<b>(n = 136,333)</b>	<b>(n = 145,078)</b>	<b>(n = 149,462)</b>	<b>(n = 155,373)</b>	<b>(n = 146,141)</b>	<b>(n = 152,286)</b>	<b>(n = 152,517)</b>	↕
Prescribed	58.8 (57.3-60.3)	57.3 (55.9-58.7)	58.7 (57.2-60.3)	56.1 (54.7-57.4)	54.5 (53.2-55.8)	55.9 (54.5-57.2)	54.4 (52.8-56.0)	55.8 (54.5-57.1)	56.5 (54.9-58.1)	53.8 (52.5-55.1)	↕
GP-supplied	5.9 (5.2-6.5)	5.5 (5.0-6.0)	6.0 (5.6-6.5)	6.0 (5.5-6.5)	6.7 (6.3-7.1)	7.1 (6.6-7.6)	8.9 (8.3-9.5)	6.8 (6.2-7.3)	6.3 (5.8-6.8)	6.4 (5.9-6.9)	§
Advised OTC	6.7 (6.1-7.2)	6.9 (6.3-7.5)	6.7 (6.2-7.2)	6.3 (5.8-6.8)	6.7 (6.2-7.2)	5.7 (5.3-6.1)	6.2 (5.7-6.7)	6.4 (5.9-6.9)	6.8 (6.3-7.4)	6.1 (5.5-6.7)	—
<b>Total medications</b>	<b>71.3</b> <b>(70.0-72.7)</b>	<b>69.8</b> <b>(68.3-71.2)</b>	<b>71.4</b> <b>(69.9-72.9)</b>	<b>68.4</b> <b>(67.0-69.7)</b>	<b>67.9</b> <b>(66.5-69.2)</b>	<b>68.7</b> <b>(67.5-70.0)</b>	<b>69.5</b> <b>(67.9-71.1)</b>	<b>69.0</b> <b>(67.6-70.3)</b>	<b>69.6</b> <b>(68.0-71.2)</b>	<b>66.3</b> <b>(64.9-67.6)</b>	↕

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↕ indicates a statistically significant decrease in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

Note: CI – confidence interval; OTC – over-the-counter.

**Table 9.1b: Rates of medications prescribed, advised for over-the-counter purchase, supplied (rate per 100 encounters), 2003-04 to 2012-13**

	Rate per 100 encounters (95% CI)										
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	(a)
<b>Medications</b>	<b>(n = 98,877)</b>	<b>(n = 94,386)</b>	<b>(n = 101,993)</b>	<b>(n = 91,805)</b>	<b>(n = 95,898)</b>	<b>(n = 96,688)</b>	<b>(n = 101,349)</b>	<b>(n = 95,839)</b>	<b>(n = 99,030)</b>	<b>(n = 98,564)</b>	↕
Prescribed	86.0 (83.6-88.5)	83.4 (81.2-85.6)	85.8 (83.3-88.4)	83.3 (81.0-85.5)	82.4 (80.3-84.6)	86.4 (84.1-88.6)	83.4 (80.6-86.2)	85.1 (82.9-87.3)	86.8 (84.0-89.7)	83.3 (81.0-85.5)	—
GP-supplied	8.6 (7.6-9.6)	8.1 (7.3-8.8)	8.8 (8.2-9.5)	8.9 (8.2-9.6)	10.1 (9.5-10.7)	11.0 (10.2-11.8)	13.6 (12.7-14.6)	10.3 (9.5-11.2)	9.7 (8.9-10.5)	9.9 (9.1-10.7)	§
Advised OTC	9.8 (9.0-10.5)	10.1 (9.2-10.9)	9.8 (9.0-10.5)	9.4 (8.7-10.1)	10.1 (9.3-10.9)	8.9 (8.3-9.4)	9.5 (8.7-10.3)	9.8 (9.0-10.5)	10.5 (9.7-11.3)	9.4 (8.4-10.3)	—
<b>Total medications</b>	<b>104.4</b> <b>(102.1-106.7)</b>	<b>101.5</b> <b>(99.3-103.8)</b>	<b>104.4</b> <b>(101.8-107.0)</b>	<b>101.5</b> <b>(99.2-103.9)</b>	<b>102.7</b> <b>(100.3-105.0)</b>	<b>106.3</b> <b>(104.0-108.5)</b>	<b>106.6</b> <b>(103.6-109.5)</b>	<b>105.2</b> <b>(102.8-107.6)</b>	<b>107.0</b> <b>(104.1-110.0)</b>	<b>102.5</b> <b>(100.2-104.9)</b>	—

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

Note: CI – confidence interval; OTC – over-the-counter.

**Table 9.2a: Prescribed medications by ATC level 2 (rate per 100 problems), 2003–04 to 2012–13**

	Rate per 100 problems (95% CI)											↑ <sup>(e)</sup> ↓
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Antibacterials for systemic use	9.3 (8.9–9.7)	9.6 (9.2–10.1)	10.0 (9.6–10.4)	9.4 (9.0–9.8)	9.1 (8.7–9.5)	9.4 (9.1–9.8)	9.1 (8.7–9.5)	9.5 (9.1–9.9)	9.3 (8.9–9.7)	8.9 (8.5–9.3)	–	
Analgesics	5.5 (5.2–5.8)	5.3 (5.1–5.6)	5.7 (5.4–6.1)	5.4 (5.1–5.7)	5.2 (5.0–5.5)	5.1 (4.9–5.4)	5.4 (5.1–5.7)	5.6 (5.4–5.9)	6.0 (5.7–6.3)	5.7 (5.4–6.0)	–	
Agents acting on the renin-angiotensin system	3.7 (3.5–3.9)	3.8 (3.6–4.0)	4.2 (3.9–4.5)	4.4 (4.2–4.6)	4.4 (4.1–4.6)	4.6 (4.3–4.8)	4.2 (4.0–4.5)	4.3 (4.1–4.5)	4.5 (4.2–4.7)	4.2 (4.0–4.4)	↑	
Psycholeptics	3.4 (3.2–3.6)	3.4 (3.1–3.6)	3.4 (3.2–3.6)	3.3 (3.1–3.5)	3.1 (2.9–3.3)	3.2 (3.0–3.4)	2.8 (2.6–3.0)	3.0 (2.8–3.1)	3.0 (2.8–3.2)	3.0 (2.8–3.3)	–	
Psychoanaesthetics	2.2 (2.1–2.4)	2.2 (2.0–2.3)	2.3 (2.1–2.4)	2.3 (2.2–2.5)	2.3 (2.2–2.4)	2.4 (2.3–2.5)	2.5 (2.4–2.7)	2.6 (2.5–2.8)	2.7 (2.6–2.9)	2.6 (2.5–2.8)	↑	
Lipid modifying agents	1.9 (1.8–2.0)	2.1 (2.0–2.2)	2.3 (2.1–2.4)	2.3 (2.2–2.5)	2.5 (2.3–2.6)	2.6 (2.5–2.8)	2.5 (2.4–2.7)	2.5 (2.4–2.7)	2.6 (2.5–2.8)	2.5 (2.4–2.6)	↑	
Drugs for obstructive airway diseases	2.8 (2.7–3.0)	2.6 (2.5–2.8)	2.7 (2.5–2.8)	2.5 (2.4–2.7)	2.3 (2.2–2.5)	2.5 (2.3–2.6)	2.4 (2.2–2.6)	2.6 (2.4–2.7)	2.4 (2.2–2.6)	2.3 (2.2–2.5)	↓	
Drugs for acid related disorders	2.0 (1.8–2.1)	1.9 (1.8–2.0)	2.1 (2.0–2.2)	2.0 (1.9–2.1)	2.0 (1.9–2.1)	2.1 (2.0–2.2)	2.1 (1.9–2.2)	2.0 (1.9–2.2)	2.2 (2.1–2.4)	2.3 (2.1–2.4)	↑	
Anti-inflammatory and antirheumatic products	3.3 (3.1–3.4)	3.1 (2.9–3.3)	2.7 (2.5–2.8)	2.4 (2.3–2.6)	2.3 (2.1–2.4)	2.2 (2.0–2.3)	2.1 (1.9–2.2)	2.1 (2.0–2.2)	2.0 (1.8–2.1)	1.9 (1.8–2.0)	↓	
Drugs used in diabetes	1.5 (1.4–1.6)	1.4 (1.3–1.5)	1.7 (1.5–1.9)	1.6 (1.5–1.8)	1.7 (1.5–1.8)	1.9 (1.7–2.0)	1.7 (1.5–1.9)	1.8 (1.7–2.0)	1.9 (1.7–2.1)	1.8 (1.6–1.9)	↑	
Corticosteroids, dermatological preparations	1.8 (1.7–1.9)	1.9 (1.8–2.0)	1.7 (1.6–1.8)	1.8 (1.6–1.9)	1.7 (1.6–1.8)	1.7 (1.6–1.8)	1.5 (1.4–1.6)	1.7 (1.6–1.8)	1.7 (1.5–1.8)	1.5 (1.4–1.6)	↓	
Sex hormones and modulators of the genital system	2.4 (2.2–2.5)	2.1 (2.0–2.3)	2.1 (1.9–2.2)	2.0 (1.8–2.2)	1.9 (1.8–2.0)	1.7 (1.6–1.8)	1.6 (1.5–1.7)	1.6 (1.5–1.7)	1.6 (1.5–1.8)	1.5 (1.4–1.6)	↓	
Antithrombotic agents	1.2 (1.1–1.3)	1.2 (1.1–1.4)	1.3 (1.2–1.4)	1.4 (1.3–1.5)	1.4 (1.2–1.5)	1.5 (1.4–1.6)	1.5 (1.3–1.6)	1.4 (1.3–1.5)	1.6 (1.5–1.7)	1.4 (1.3–1.5)	↑	

(continued)

**Table 9.2a (continued): Prescribed medications by ATC level 2 (rate per 100 problems), 2003–04 to 2012–13**

	Rate per 100 problems (95% CI)											(a)
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Beta blocking agents	1.2 (1.1–1.3)	1.1 (1.1–1.2)	1.3 (1.2–1.4)	1.2 (1.1–1.3)	1.1 (1.0–1.2)	1.3 (1.2–1.4)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	—
Corticosteroids for systemic use	0.9 (0.8–0.9)	0.8 (0.8–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.8 (0.8–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (1.0–1.1)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	↑
Calcium channel blockers	1.5 (1.4–1.6)	1.4 (1.3–1.5)	1.5 (1.4–1.6)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.5 (1.4–1.6)	1.3 (1.2–1.4)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	→
Ophthalmologicals	1.1 (1.1–1.2)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.2 (1.1–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.0 (1.0–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	→
Vaccines	2.3 (2.0–2.5)	2.0 (1.8–2.3)	1.7 (1.5–1.9)	1.2 (1.0–1.3)	1.1 (0.9–1.2)	1.0 (0.9–1.2)	1.1 (0.9–1.3)	1.0 (0.8–1.1)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	→
Diuretics	1.1 (1.0–1.1)	0.9 (0.8–1.0)	1.0 (0.9–1.0)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	→
Nasal preparations	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	—
Thyroid therapy	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.4 (0.4–0.5)	0.5 (0.5–0.5)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	↑
Other nervous system drugs	0.2 (0.2–0.3)	0.4 (0.2–0.5)	0.4 (0.3–0.5)	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.4–0.7)	0.6 (0.4–0.7)	↑
Antiepileptics	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	—
Drugs for functional gastrointestinal disorders	0.6 (0.6–0.7)	0.5 (0.4–0.5)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	→
Cardiac therapy	0.7 (0.6–0.8)	0.6 (0.5–0.6)	0.6 (0.6–0.7)	0.5 (0.5–0.6)	0.4 (0.4–0.5)	0.6 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	→
<b>Total prescribed medications</b>	<b>58.8 (57.3–60.3)</b>	<b>57.3 (55.9–58.7)</b>	<b>58.7 (57.2–60.3)</b>	<b>56.1 (54.7–57.4)</b>	<b>54.5 (53.2–55.8)</b>	<b>55.9 (54.5–57.2)</b>	<b>54.4 (52.8–56.0)</b>	<b>55.8 (54.5–57.1)</b>	<b>56.5 (54.9–58.1)</b>	<b>53.8 (52.5–55.1)</b>	<b>53.8 (52.5–55.1)</b>	→

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

Note: CI – confidence interval.

**Table 9.2b: Prescribed medications by ATC level 2 (rate per 100 encounters), 2003–04 to 2012–13**

ATC level 2	Rate per 100 encounters (95% CI)											2012–13 (n = 98,564)	↑ <sup>(a)</sup> ↓
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13			
Antibacterials for systemic use	13.6 (13.1–14.2)	14.0 (13.5–14.6)	14.6 (14.0–15.2)	14.0 (13.4–14.5)	13.8 (13.2–14.3)	14.6 (14.1–15.1)	14.0 (13.4–14.5)	14.5 (13.9–15.0)	14.3 (13.7–14.8)	14.3 (13.7–14.8)	13.8 (13.2–14.3)	—	
Analgesics	8.1 (7.6–8.6)	7.8 (7.4–8.2)	8.4 (7.9–8.9)	8.0 (7.6–8.4)	7.9 (7.5–8.3)	7.9 (7.5–8.3)	8.2 (7.7–8.8)	8.6 (8.1–9.0)	9.3 (8.8–9.8)	9.3 (8.8–9.8)	8.9 (8.4–9.3)	—	
Agents acting on the renin-angiotensin system	5.5 (5.1–5.8)	5.5 (5.2–5.8)	6.1 (5.7–6.5)	6.5 (6.1–6.9)	6.6 (6.2–7.0)	7.1 (6.7–7.4)	6.5 (6.1–6.9)	6.6 (6.2–6.9)	6.9 (6.5–7.3)	6.9 (6.5–7.3)	6.5 (6.1–6.8)	↑	
Psycholeptics	5.0 (4.7–5.3)	4.9 (4.6–5.2)	5.0 (4.6–5.3)	4.8 (4.5–5.1)	4.7 (4.4–5.0)	5.0 (4.7–5.3)	4.3 (4.0–4.6)	4.5 (4.2–4.8)	4.6 (4.3–4.9)	4.6 (4.3–4.9)	4.7 (4.4–5.0)	—	
Psychoanaesthetics	3.3 (3.1–3.5)	3.1 (3.0–3.3)	3.3 (3.1–3.5)	3.5 (3.3–3.7)	3.5 (3.3–3.7)	3.7 (3.5–3.9)	3.9 (3.6–4.1)	4.0 (3.8–4.3)	4.2 (3.9–4.5)	4.2 (3.9–4.5)	4.1 (3.9–4.3)	↑	
Lipid modifying agents	2.8 (2.6–3.0)	3.0 (2.8–3.2)	3.3 (3.0–3.6)	3.4 (3.2–3.7)	3.7 (3.5–4.0)	4.1 (3.8–4.3)	3.9 (3.6–4.2)	3.9 (3.6–4.1)	4.0 (3.8–4.3)	4.0 (3.8–4.3)	3.9 (3.6–4.1)	↑	
Drugs for obstructive airway diseases	4.1 (3.9–4.4)	3.8 (3.6–4.1)	3.9 (3.6–4.1)	3.8 (3.5–4.0)	3.5 (3.3–3.8)	3.8 (3.6–4.0)	3.7 (3.4–4.0)	3.9 (3.6–4.2)	3.7 (3.4–4.0)	3.7 (3.4–4.0)	3.6 (3.4–3.9)	↓	
Drugs for acid related disorders	2.9 (2.7–3.0)	2.7 (2.5–2.9)	3.1 (2.9–3.2)	3.0 (2.8–3.2)	3.0 (2.9–3.2)	3.3 (3.1–3.4)	3.2 (2.9–3.4)	3.1 (2.9–3.3)	3.4 (3.2–3.6)	3.4 (3.2–3.6)	3.5 (3.3–3.7)	↑	
Anti-inflammatory and antirheumatic products	4.8 (4.5–5.0)	4.5 (4.2–4.7)	3.9 (3.7–4.2)	3.6 (3.4–3.9)	3.5 (3.2–3.7)	3.4 (3.2–3.5)	3.2 (2.9–3.4)	3.2 (3.0–3.4)	3.0 (2.8–3.2)	3.0 (2.8–3.2)	3.0 (2.8–3.2)	↓	
Drugs used in diabetes	2.2 (2.0–2.4)	2.1 (1.9–2.2)	2.5 (2.2–2.7)	2.4 (2.2–2.6)	2.5 (2.3–2.7)	2.9 (2.6–3.2)	2.6 (2.4–2.9)	2.8 (2.5–3.0)	2.9 (2.6–3.2)	2.9 (2.6–3.2)	2.7 (2.5–3.0)	↑	
Corticosteroids, dermatological preparations	2.6 (2.4–2.7)	2.8 (2.6–2.9)	2.5 (2.4–2.7)	2.6 (2.4–2.8)	2.6 (2.4–2.7)	2.6 (2.5–2.8)	2.4 (2.2–2.5)	2.6 (2.4–2.7)	2.5 (2.4–2.7)	2.5 (2.4–2.7)	2.4 (2.2–2.5)	—	
Sex hormones and modulators of the genital system	3.5 (3.3–3.7)	3.1 (2.9–3.3)	3.0 (2.8–3.2)	3.0 (2.7–3.3)	2.9 (2.7–3.0)	2.7 (2.5–2.9)	2.5 (2.3–2.6)	2.5 (2.3–2.6)	2.5 (2.4–2.7)	2.5 (2.4–2.7)	2.3 (2.2–2.5)	↓	
Antithrombotic agents	1.8 (1.6–1.9)	1.8 (1.6–2.0)	1.9 (1.7–2.1)	2.1 (1.9–2.2)	2.1 (1.9–2.3)	2.4 (2.2–2.5)	2.2 (2.1–2.4)	2.1 (2.0–2.3)	2.5 (2.2–2.7)	2.5 (2.2–2.7)	2.1 (1.9–2.3)	↑	

(continued)

Table 9.2b (continued): Prescribed medications by ATC level 2 (rate per 100 encounters), 2003–04 to 2012–13

ATC level 2	Rate per 100 encounters (95% CI)											2012–13 (n = 98,564) ↑ <sup>(a)</sup> ↓	
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)	2012–13 (n = 98,564)		
Beta blocking agents	1.8 (1.7–2.0)	1.7 (1.5–1.8)	1.9 (1.8–2.1)	1.8 (1.7–2.0)	1.7 (1.6–1.9)	2.0 (1.8–2.1)	1.6 (1.5–1.8)	1.7 (1.6–1.8)	1.7 (1.6–1.9)	1.7 (1.6–1.9)	1.7 (1.5–1.8)	1.7 (1.5–1.8)	—
Calcium channel blockers	2.2 (2.0–2.3)	2.0 (1.8–2.1)	2.2 (2.0–2.4)	2.1 (2.0–2.3)	2.1 (1.9–2.3)	2.3 (2.1–2.4)	2.0 (1.9–2.2)	1.8 (1.7–2.0)	1.8 (1.7–2.0)	1.8 (1.7–2.0)	1.6 (1.5–1.8)	1.6 (1.5–1.8)	↓
Ophthalmologicals	1.7 (1.5–1.8)	1.7 (1.6–1.8)	1.8 (1.7–1.9)	1.7 (1.6–1.8)	1.7 (1.5–1.8)	1.7 (1.6–1.8)	1.6 (1.5–1.7)	1.6 (1.5–1.7)	1.6 (1.4–1.7)	1.6 (1.4–1.7)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	↓
Vaccines	3.3 (3.0–3.6)	2.9 (2.6–3.3)	2.5 (2.2–2.8)	1.7 (1.5–1.9)	1.6 (1.4–1.8)	1.6 (1.4–1.8)	1.7 (1.4–1.9)	1.5 (1.3–1.7)	1.3 (1.1–1.5)	1.3 (1.1–1.5)	1.1 (0.9–1.2)	1.1 (0.9–1.2)	↓
Diuretics	1.5 (1.4–1.7)	1.3 (1.2–1.5)	1.4 (1.3–1.5)	1.4 (1.3–1.5)	1.2 (1.1–1.4)	1.3 (1.2–1.4)	1.2 (1.1–1.3)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	↓
Nasal preparations	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	—
Thyroid therapy	0.6 (0.6–0.7)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.8 (0.7–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	↑
Other nervous system drugs	0.3 (0.3–0.4)	0.5 (0.3–0.7)	0.6 (0.4–0.7)	0.4 (0.3–0.5)	0.5 (0.4–0.6)	0.8 (0.6–0.9)	0.8 (0.6–0.9)	0.9 (0.8–1.0)	0.8 (0.7–1.0)	0.8 (0.7–1.0)	0.9 (0.7–1.1)	0.9 (0.7–1.1)	↑
Antiepileptics	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.6–0.7)	0.6 (0.5–0.7)	0.5 (0.5–0.6)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	↑
Drugs for functional gastrointestinal disorders	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.8)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.8 (0.7–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	—
Cardiac therapy	1.1 (0.9–1.2)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	↓
Otologicals	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.8 (0.8–0.9)	0.7 (0.6–0.8)	0.8 (0.7–0.8)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	↓
<b>Total prescribed medications</b>	<b>86.0 (83.6–88.5)</b>	<b>83.4 (81.2–85.6)</b>	<b>85.8 (83.3–88.4)</b>	<b>83.3 (81.0–85.5)</b>	<b>82.4 (80.3–84.6)</b>	<b>86.4 (84.1–88.6)</b>	<b>83.4 (80.6–86.2)</b>	<b>85.1 (82.9–87.3)</b>	<b>86.8 (84.0–89.7)</b>	<b>86.8 (84.0–89.7)</b>	<b>83.3 (81.0–85.5)</b>	<b>83.3 (81.0–85.5)</b>	—

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04. Note: CI – confidence interval.



Table 9.3a: Most frequently prescribed medications by CAPS generic (rate per 100 problems), 2003-04 to 2012-13

Generic drug	Rate per 100 problems (95% CI)											↑ <sup>(a)</sup> ↓
	2003-04 (n = 144,674)	2004-05 (n = 137,330)	2005-06 (n = 149,088)	2006-07 (n = 136,333)	2007-08 (n = 145,078)	2008-09 (n = 149,462)	2009-10 (n = 155,373)	2010-11 (n = 146,141)	2011-12 (n = 152,286)	2012-13 (n = 152,517)		
Amoxicillin	2.2 (2.0-2.4)	2.4 (2.2-2.6)	2.4 (2.3-2.6)	2.2 (2.0-2.4)	2.3 (2.1-2.5)	2.3 (2.1-2.4)	2.1 (1.9-2.3)	2.1 (2.0-2.3)	2.1 (1.9-2.3)	2.0 (1.8-2.1)	—	
Cephalexin	1.4 (1.3-1.5)	1.6 (1.5-1.8)	1.7 (1.6-1.9)	1.6 (1.5-1.7)	1.6 (1.5-1.7)	1.6 (1.5-1.7)	1.7 (1.6-1.8)	1.8 (1.7-1.9)	1.8 (1.7-1.9)	1.7 (1.6-1.8)	↑	
Paracetamol [plain]	2.0 (1.7-2.2)	1.8 (1.7-2.0)	2.1 (1.9-2.3)	1.7 (1.5-1.9)	1.6 (1.5-1.8)	1.5 (1.4-1.6)	1.8 (1.5-2.0)	1.7 (1.5-1.8)	1.9 (1.7-2.1)	1.6 (1.4-1.8)	—	
Amoxicillin/potassium clavulanate	1.2 (1.0-1.3)	1.2 (1.0-1.3)	1.1 (1.0-1.2)	1.1 (1.0-1.3)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	1.1 (1.0-1.2)	1.3 (1.2-1.4)	1.2 (1.1-1.3)	1.3 (1.1-1.4)	—	
Paracetamol/codeine [all]	1.4 (1.3-1.5)	1.4 (1.2-1.5)	1.4 (1.3-1.5)	1.3 (1.2-1.4)	1.3 (1.1-1.4)	1.2 (1.1-1.3)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	1.3 (1.1-1.4)	1.1 (1.0-1.2)	↓	
Oxycodone	0.3 (0.2-0.3)	0.4 (0.3-0.4)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.7 (0.6-0.8)	0.8 (0.7-0.8)	0.9 (0.8-0.9)	1.0 (0.9-1.0)	1.0 (0.9-1.1)	1.1 (1.0-1.1)	↑	
Esomeprazole	0.4 (0.4-0.5)	0.5 (0.4-0.5)	0.6 (0.6-0.7)	0.7 (0.6-0.7)	0.8 (0.7-0.8)	0.8 (0.8-0.9)	0.8 (0.8-0.9)	0.8 (0.7-0.9)	1.0 (0.9-1.0)	1.0 (1.0-1.1)	↑	
Atorvastatin	0.8 (0.7-0.9)	1.0 (0.9-1.0)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.3)	1.2 (1.1-1.3)	1.0 (1.0-1.1)	1.0 (1.0-1.1)	1.0 (1.0-1.1)	0.9 (0.9-1.0)	↑	
Salbutamol	1.0 (1.0-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	0.9 (0.9-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-0.9)	0.8 (0.8-0.9)	↓	
Metformin	0.7 (0.6-0.8)	0.7 (0.6-0.7)	0.8 (0.7-0.9)	0.8 (0.7-0.8)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.8 (0.8-0.9)	0.9 (0.8-0.9)	0.8 (0.8-0.9)	0.8 (0.8-0.9)	↑	
Diazepam	0.7 (0.7-0.8)	0.7 (0.7-0.8)	0.8 (0.7-0.9)	0.7 (0.7-0.8)	0.7 (0.6-0.8)	0.7 (0.7-0.8)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	—	
Rosuvastatin	N/A	N/A	N/A	0.0 <sup>†</sup> (0.0-0.0)	0.2 (0.2-0.3)	0.4 (0.3-0.4)	0.5 (0.5-0.6)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	↑	
Warfarin sodium	0.6 (0.5-0.7)	0.6 (0.6-0.7)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	0.8 (0.7-0.8)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.7 (0.7-0.8)	↑	
Perindopril	0.5 (0.4-0.6)	0.6 (0.5-0.6)	0.7 (0.6-0.7)	0.8 (0.7-0.9)	0.8 (0.7-0.8)	0.9 (0.8-0.9)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	0.7 (0.6-0.8)	↑	

(continued)

Table 9.3a (continued): Most frequently prescribed medications by CAPS generic (rate per 100 problems), 2003–04 to 2012–13

Generic drug	Rate per 100 problems (95% CI)										2012–13 (n = 152,517)	↑ <sup>(a)</sup> ↓
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Roxithromycin	0.8 (0.7–0.9)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.7 (0.7–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	–
Temazepam	0.8 (0.8–0.9)	0.8 (0.7–0.8)	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.8 (0.7–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.7 (0.6–0.7)	↘
Tramadol	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	↘
Meloxicam	0.3 (0.2–0.3)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.6 (0.6–0.7)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	↗
Thyroxine	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.4–0.4)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	↗
Irbesartan	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.7 (0.7–0.8)	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.6)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.5 (0.5–0.6)	–
Fluticasone/salmeterol	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	–
Doxycycline	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	–
Betamethasone topical	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.4–0.5)	↘
Levonorgestrel/ ethinylloestradiol	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	↘
Irbesartan/ hydrochlorothiazide	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	↘
Ramipril	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	–
Amlodipine	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.4)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	↘

(continued)

Table 9.3a (continued): Most frequently prescribed medications by CAPS generic (rate per 100 problems), 2003–04 to 2012–13

Generic drug	Rate per 100 problems (95% CI)											↑ <sup>(a)</sup> ↓
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
<b>Generic medications frequently prescribed in previous years</b>												
Chloramphenicol eye	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.7 (0.7–0.8)	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.4 (0.4–0.5)		↓
Atenolol	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.6)	0.6 (0.6–0.7)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.4–0.5)		↓
Celecoxib	0.7 (0.6–0.7)	0.6 (0.6–0.7)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)		↓
Diclofenac sodium systemic	0.6 (0.5–0.6)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)		↓
Simvastatin	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.4 (0.4–0.4)	0.4 (0.3–0.4)	0.3 (0.3–0.3)		↓
Cefaclor monohydrate	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.4–0.7)	0.5 (0.4–0.6)	0.4 (0.3–0.5)	0.5 (0.4–0.6)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.2 (0.2–0.3)		↓
Influenza virus vaccine	0.8 (0.7–1.0)	0.6 (0.5–0.7)	0.7 (0.6–0.9)	0.4 (0.3–0.5)	0.3 (0.2–0.3)	0.4 (0.3–0.4)	0.4 (0.3–0.5)	0.3 (0.2–0.4)	0.2 (0.2–0.3)	0.2 (0.2–0.3)		↓
<b>Total prescribed medications</b>	<b>58.8 (57.3–60.3)</b>	<b>57.3 (55.9–58.7)</b>	<b>58.7 (57.2–60.3)</b>	<b>56.1 (54.7–57.4)</b>	<b>54.5 (53.2–55.8)</b>	<b>55.9 (54.5–57.2)</b>	<b>54.4 (52.8–56.0)</b>	<b>55.8 (54.5–57.1)</b>	<b>56.5 (54.9–58.1)</b>	<b>53.8 (52.5–55.1)</b>		↓

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval; N/A – not applicable (that is, drug was not available at that time).

**Table 9.3b: Most frequently prescribed medications by CAPS generic (rate per 100 encounters), 2003-04 to 2012-13**

Generic drug	Rate per 100 encounters (95% CI)												↑ <sup>(a)</sup> ↓
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)			
Amoxicillin	3.3 (3.0-3.5)	3.5 (3.2-3.8)	3.6 (3.3-3.8)	3.3 (3.0-3.6)	3.5 (3.2-3.7)	3.5 (3.3-3.8)	3.2 (3.0-3.5)	3.3 (3.0-3.5)	3.2 (3.0-3.5)	3.0 (2.8-3.3)	—		
Cephalexin	2.0 (1.9-2.2)	2.4 (2.2-2.6)	2.5 (2.3-2.7)	2.3 (2.2-2.5)	2.4 (2.3-2.6)	2.5 (2.3-2.6)	2.6 (2.5-2.8)	2.7 (2.5-2.9)	2.8 (2.6-3.0)	2.6 (2.4-2.8)	↑		
Paracetamol	2.9 (2.5-3.2)	2.7 (2.4-2.9)	3.0 (2.7-3.3)	2.6 (2.3-2.8)	2.5 (2.2-2.7)	2.3 (2.1-2.5)	2.7 (2.3-3.0)	2.5 (2.3-2.8)	2.9 (2.7-3.2)	2.5 (2.2-2.7)	—		
Amoxicillin/potassium clavulanate	1.7 (1.5-1.8)	1.7 (1.5-1.8)	1.6 (1.5-1.8)	1.7 (1.5-1.9)	1.7 (1.6-1.9)	1.8 (1.7-2.0)	1.6 (1.5-1.8)	2.0 (1.8-2.2)	1.9 (1.7-2.0)	2.0 (1.8-2.1)	↑		
Paracetamol/codeine [all]	2.1 (1.9-2.3)	2.0 (1.8-2.2)	2.0 (1.8-2.2)	2.0 (1.8-2.1)	1.9 (1.7-2.1)	1.9 (1.8-2.0)	1.7 (1.5-1.8)	1.9 (1.7-2.0)	1.9 (1.8-2.1)	1.8 (1.6-1.9)	↓		
Oxycodone	0.4 (0.4-0.5)	0.5 (0.5-0.6)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	1.0 (0.9-1.2)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.5 (1.3-1.6)	1.5 (1.4-1.6)	1.6 (1.5-1.8)	↑		
Esomeprazole	0.6 (0.5-0.7)	0.7 (0.6-0.8)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.3 (1.1-1.4)	1.2 (1.1-1.3)	1.5 (1.4-1.6)	1.6 (1.5-1.7)	↑		
Atorvastatin	1.2 (1.1-1.3)	1.4 (1.3-1.5)	1.6 (1.4-1.8)	1.7 (1.5-1.8)	1.7 (1.6-1.9)	1.9 (1.7-2.0)	1.6 (1.5-1.7)	1.6 (1.5-1.7)	1.6 (1.5-1.7)	1.5 (1.3-1.6)	↑		
Salbutamol	1.5 (1.4-1.6)	1.4 (1.3-1.5)	1.5 (1.4-1.6)	1.4 (1.3-1.5)	1.3 (1.2-1.5)	1.4 (1.3-1.5)	1.4 (1.2-1.6)	1.4 (1.2-1.5)	1.3 (1.2-1.5)	1.3 (1.2-1.4)	↓		
Metformin	1.0 (0.9-1.1)	1.0 (0.9-1.0)	1.2 (1.0-1.3)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	1.4 (1.2-1.5)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	1.3 (1.2-1.4)	↑		
Diazepam	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.3)	1.0 (0.9-1.1)	1.0 (0.9-1.2)	1.1 (1.0-1.2)	1.3 (1.1-1.4)	—		
Rosuvastatin	N/A	N/A	N/A	0.0 <sup>†</sup> (0.0-0.1)	0.3 (0.3-0.4)	0.6 (0.5-0.6)	0.8 (0.7-0.9)	0.9 (0.9-1.0)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	↑		
Warfarin sodium	0.9 (0.8-1.0)	0.9 (0.8-1.1)	0.9 (0.8-1.0)	1.0 (0.9-1.2)	1.1 (0.9-1.2)	1.2 (1.1-1.4)	1.2 (1.0-1.3)	1.2 (1.0-1.3)	1.4 (1.3-1.6)	1.2 (1.0-1.3)	↑		
Perindopril	0.7 (0.6-0.8)	0.8 (0.7-0.9)	1.0 (0.9-1.1)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.3 (1.2-1.5)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.2 (1.1-1.3)	1.1 (1.0-1.2)	↑		

(continued)

Table 9.3b (continued): Most frequently prescribed medications by CAPS generic (rate per 100 encounters), 2003-04 to 2012-13

Generic drug	Rate per 100 encounters (95% CI)												2012-13 (n = 98,564)	↑ ↓ <sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)	2012-13 (n = 98,564)	2012-13 (n = 98,564)		
Roxithromycin	1.1 (1.0-1.2)	1.1 (1.0-1.3)	1.5 (1.3-1.7)	1.4 (1.2-1.5)	1.2 (1.1-1.4)	1.4 (1.3-1.5)	1.3 (1.2-1.5)	1.1 (1.0-1.2)	1.1 (1.0-1.3)	1.1 (1.0-1.3)	1.0 (0.9-1.2)	1.0 (0.9-1.2)	1.0 (0.9-1.2)	—
Temazepam	1.2 (1.1-1.3)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.2 (1.1-1.3)	1.0 (0.9-1.2)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	↓
Tramadol	0.9 (0.8-1.0)	1.0 (0.9-1.1)	0.9 (0.9-1.0)	0.9 (0.8-1.0)	0.9 (0.8-0.9)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	—
Meloxicam	0.4 (0.3-0.4)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.7 (0.7-0.8)	0.9 (0.8-1.1)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	↑
Thyroxine	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.7)	0.7 (0.7-0.8)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	↑
Irbesartan	0.9 (0.8-1.0)	0.9 (0.8-1.0)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	0.8 (0.7-0.9)	1.0 (0.9-1.0)	1.0 (0.9-1.0)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	—
Fluticasone/salmeterol	0.8 (0.7-0.9)	0.9 (0.8-0.9)	0.9 (0.8-1.0)	0.9 (0.8-0.9)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.8 (0.8-0.9)	0.8 (0.8-1.0)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	—
Doxycycline	0.7 (0.6-0.8)	0.7 (0.7-0.8)	0.8 (0.7-0.9)	0.7 (0.7-0.8)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.6 (0.6-0.7)	0.6 (0.6-0.7)	0.7 (0.6-0.8)	0.6 (0.6-0.7)	0.8 (0.7-0.9)	—
Betamethasone topical	0.8 (0.7-0.9)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.7-0.8)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	0.9 (0.8-0.9)	0.9 (0.8-0.9)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	—
Levonorgestrel/ ethinylloestradiol	1.2 (1.1-1.3)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	0.8 (0.8-0.9)	0.7 (0.7-0.8)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	0.7 (0.7-0.8)	0.8 (0.7-0.8)	0.8 (0.7-0.8)	↓
Pantoprazole	0.4 (0.4-0.5)	0.4 (0.4-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.5-0.6)	0.6 (0.5-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.7)	0.7 (0.6-0.7)	0.7 (0.6-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	↑
Chloramphenicol eye	0.9 (0.8-1.0)	0.9 (0.9-1.0)	1.1 (1.0-1.1)	1.0 (0.9-1.1)	0.9 (0.9-1.0)	1.0 (0.9-1.1)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.7 (0.6-0.7)	↓
Telmisartan	0.3 (0.2-0.3)	0.3 (0.2-0.4)	0.4 (0.3-0.4)	0.4 (0.4-0.5)	0.5 (0.4-0.6)	0.5 (0.5-0.6)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.7 (0.6-0.8)	↑

(continued)

Table 9.3b (continued): Most frequently prescribed medications by CAPS generic (rate per 100 encounters), 2003–04 to 2012–13

Generic drug	Rate per 100 encounters (95% CI)												2012–13 (n = 98,564)	↑ ↓ <sup>(a)</sup>
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)	2012–13 (n = 98,564)			
Atenolol	1.0 (0.9–1.1)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	1.0 (0.8–1.1)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	↓	
Clarithromycin	0.3 (0.3–0.4)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.6 (0.5–0.8)	0.6 (0.5–0.8)	↑	
Celecoxib	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	↓	
<b>Generic medications frequently prescribed in previous years</b>														
Diclofenac sodium systemic	0.8 (0.7–0.9)	1.0 (0.8–1.1)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	↓	
Oxazepam	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	↓	
Prochlorperazine	0.7 (0.6–0.7)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	↓	
Simvastatin	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.2 (1.0–1.3)	1.1 (1.0–1.2)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.6 (0.6–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	↓	
Cefaclor monohydrate	0.8 (0.7–0.9)	0.8 (0.7–1.0)	0.8 (0.6–1.0)	0.8 (0.6–0.9)	0.6 (0.5–0.7)	0.8 (0.7–0.9)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	↓	
Influenza virus vaccine	1.2 (1.0–1.4)	0.9 (0.7–1.1)	1.1 (0.8–1.3)	0.6 (0.5–0.7)	0.4 (0.3–0.5)	0.6 (0.4–0.7)	0.6 (0.4–0.7)	0.5 (0.3–0.6)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	↓	
Omeprazole	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	↓	
<b>Total prescribed medications</b>	<b>58.8 (57.3–60.3)</b>	<b>57.3 (55.9–58.7)</b>	<b>58.7 (57.2–60.3)</b>	<b>56.1 (54.7–57.4)</b>	<b>54.5 (53.2–55.8)</b>	<b>55.9 (54.5–57.2)</b>	<b>54.4 (52.8–56.0)</b>	<b>55.8 (54.5–57.1)</b>	<b>56.5 (54.9–58.1)</b>	<b>55.8 (54.5–57.1)</b>	<b>53.8 (52.5–55.1)</b>	<b>53.8 (52.5–55.1)</b>	↓	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval; N/A – not applicable (that is, drug was not available at that time).

**Table 9.4: Number of repeats ordered for prescribed medications, 2003-04 to 2012-13**

Number of repeats	Per cent of prescriptions (95% CI) <sup>(a)</sup>												<sup>(b)</sup>
	2003-04 (n = 85,073)	2004-05 (n = 78,711)	2005-06 (n = 87,543)	2006-07 (n = 76,430)	2007-08 (n = 79,051)	2008-09 (n = 83,509)	2009-10 (n = 84,539)	2010-11 (n = 81,543)	2011-12 (n = 85,980)	2012-13 (n = 82,079)			
No repeats	37.8 (36.2-39.3)	38.5 (36.8-40.2)	35.9 (34.4-37.5)	35.2 (33.7-36.7)	34.5 (33.1-35.9)	34.0 (32.8-35.2)	34.2 (32.7-35.7)	34.7 (33.3-36.0)	34.7 (33.2-36.2)	34.5 (33.0-35.9)	34.7 (33.2-36.2)	34.5 (33.0-35.9)	↓
One repeat	16.6 (15.8-17.3)	17.6 (16.7-18.4)	17.6 (16.8-18.4)	16.4 (15.6-17.1)	16.8 (16.0-17.6)	17.1 (16.1-18.0)	15.9 (15.2-16.6)	15.9 (15.2-16.6)	16.2 (15.3-17)	15.8 (15.1-16.5)	16.2 (15.3-17)	15.8 (15.1-16.5)	—
Two repeats	11.4 (10.6-12.1)	10.6 (10.0-11.3)	10.1 (9.4-10.9)	10.5 (9.6-11.4)	10.2 (9.3-11.1)	9.7 (9.0-10.3)	9.6 (8.9-10.3)	9.8 (9.0-10.5)	9.6 (8.9-10.3)	9.2 (8.7-9.8)	9.6 (8.9-10.3)	9.2 (8.7-9.8)	↓
Three or four repeats	5.0 (4.7-5.4)	4.8 (4.4-5.2)	4.5 (3.8-5.2)	4.8 (4.3-5.3)	4.6 (4.1-5.1)	4.4 (4.0-4.8)	4.3 (3.9-4.8)	4.1 (3.7-4.5)	3.8 (3.4-4.1)	3.7 (3.4-4.1)	3.8 (3.4-4.1)	3.7 (3.4-4.1)	↓
Five repeats	29.2 (27.9-30.4)	28.3 (27.0-29.6)	31.7 (30.3-33.1)	33 (31.7-34.4)	33.8 (32.5-35.1)	34.8 (33.6-36.0)	35.8 (34.2-37.4)	35.4 (34.2-36.6)	35.5 (34.1-36.9)	36.6 (35.4-37.8)	35.5 (34.1-36.9)	36.6 (35.4-37.8)	↑
Six or more repeats	0.1 (0.1-0.2)	0.2 (0.1-0.3)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.3)	0.2 (0.1-0.2)	0.2 (0.1-0.3)	0.2 (0.1-0.2)	—

(a) Missing data removed.

(b) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval.

Table 9.5a: Medications most frequently supplied by GPs (rate per 100 problems), 2003–04 to 2012–13

Generic medication	Rate per 100 problems (95% CI)										(a)
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)	
Influenza virus vaccine	0.8 (0.6–1.0)	0.9 (0.6–1.1)	1.1 (0.9–1.2)	1.3 (1.1–1.6)	1.0 (0.8–1.1)	1.5 (1.3–1.7)	2.7 (2.4–3.0)	1.7 (1.5–2.0)	1.3 (1.0–1.5)	1.5 (1.3–1.8)	↑
Pneumococcal vaccine	0.1 (0.0–0.1)	0.3 (0.2–0.4)	0.6 (0.5–0.7)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	↑
Vitamin B12 (cobalamin)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.3–0.4)	↑
Diphtheria/pertussis/ tetanus/hepatitis B/ polio/Hib vaccine	N/A	N/A	0.0 <sup>F</sup> (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	↑
Mumps/measles/rubella vaccine	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	↑
Rotavirus vaccine	N/A	N/A	N/A	0.0 <sup>F</sup> (0.0–0.0)	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	↑
Triple antigen (diphtheria/ pertussis/tetanus)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.1–0.2)	—
Chickenpox (varicella zoster) vaccine	0.0 <sup>F</sup> (0.0–0.0)	0.0 <sup>F</sup> (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	↑
ADT/CDT (diphtheria/ tetanus) vaccine	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	—
Meningitis vaccine	0.2 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	—
<b>Total GP-supplied medications</b>	<b>5.9 (5.2–6.5)</b>	<b>5.5 (5.0–6.0)</b>	<b>6.0 (5.6–6.5)</b>	<b>6.0 (5.5–6.5)</b>	<b>6.7 (6.3–7.1)</b>	<b>7.1 (6.6–7.6)</b>	<b>8.9 (8.3–9.5)</b>	<b>6.8 (6.2–7.3)</b>	<b>6.3 (5.8–6.8)</b>	<b>6.4 (5.9–6.9)</b>	§

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↗/↘ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

<sup>F</sup> Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 problems managed.

Note: CI – confidence interval; N/A – not applicable (that is, drug was not available at that time).



**Table 9.5b: Medications most frequently supplied by GPs (rate per 100 encounters), 2003-04 to 2012-13**

Generic medication	Rate per 100 encounters (95% CI)										↑ <sup>(a)</sup> ↓
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)	
Influenza virus vaccine	1.2 (0.9-1.4)	1.2 (0.9-1.6)	1.6 (1.3-1.8)	2.0 (1.6-2.3)	1.5 (1.2-1.7)	2.3 (2.0-2.7)	4.1 (3.7-4.6)	2.7 (2.2-3.1)	1.9 (1.6-2.3)	2.3 (1.9-2.7)	↑
Pneumococcal vaccine	0.1 (0.1-0.1)	0.4 (0.3-0.5)	0.9 (0.8-1.0)	0.6 (0.6-0.7)	0.6 (0.5-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.6 (0.5-0.7)	0.6 (0.6-0.7)	0.6 (0.5-0.6)	↑
Vitamin B12 (cobalamin)	0.1 (0.1-0.1)	0.2 (0.1-0.2)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.4 (0.3-0.4)	0.4 (0.3-0.5)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.5 (0.4-0.6)	↑
Diphtheria/pertussis/ tetanus/hepatitis B/ polio/Hib vaccine	N/A	0.0 <sup>†</sup> (0.0-0.0)	0.1 (0.0-0.1)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	↑
Mumps/measles/rubella vaccine	0.2 (0.1-0.2)	0.3 (0.2-0.3)	0.3 (0.3-0.3)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	↑
Rotavirus vaccine	N/A	N/A	N/A	0.0 <sup>†</sup> (0.0-0.0)	0.1 (0.1-0.2)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	↑
Triple antigen (diphtheria/ pertussis/tetanus)	0.2 (0.2-0.2)	0.3 (0.2-0.3)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.2 (0.2-0.3)	↑
ADT/CDT (diphtheria/ tetanus) vaccine	0.1 (0.1-0.2)	0.2 (0.2-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	—
Meningitis vaccine	0.3 (0.2-0.3)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	↓
Haemophilus B vaccine	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.3 (0.2-0.4)	0.2 (0.2-0.2)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	—
<b>Total GP supplied medications</b>	<b>8.6 (7.6-9.6)</b>	<b>8.1 (7.3-8.8)</b>	<b>8.8 (8.2-9.5)</b>	<b>8.9 (8.2-9.6)</b>	<b>10.1 (9.5-10.7)</b>	<b>11.0 (10.2-11.8)</b>	<b>13.6 (12.7-14.6)</b>	<b>10.3 (9.5-11.2)</b>	<b>9.7 (8.9-10.5)</b>	<b>9.9 (9.1-10.7)</b>	<b>§</b>

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↑/↓ indicates a marginally significant change in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval; N/A – not applicable (that is, drug was not available at that time).

**Table 9.6a: Most frequently advised over-the-counter medications (rate per 100 problems), 2003–04 to 2012–13**

Generic drug	Rate per 100 problems (95% CI)											(a)
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Paracetamol	1.7 (1.4–1.9)	1.6 (1.4–1.8)	1.7 (1.5–1.9)	1.6 (1.4–1.8)	1.7 (1.5–1.9)	1.5 (1.3–1.7)	1.6 (1.4–1.8)	1.7 (1.5–1.9)	1.9 (1.6–2.1)	1.6 (1.3–1.9)	—	
Ibuprofen	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.5)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.5)	0.4 (0.3–0.4)	0.5 (0.4–0.5)	0.4 (0.3–0.4)	—	
Saline bath/ solution/gargle	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	↑	
Vitamin D3 (cholecalciferol)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.1 (0.0–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	↑	
Simple analgesics	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	↑	
Sodium chloride topical nasal	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	↑	
Diclofenac topical	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	↓	
Cream/ointment/lotion NEC	0.0 <sup>†</sup> (0.0–0.0)	0.1 (0.1–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	§	
Sodium/potassium/citric acid/glucose	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.1 (0.1–0.1)	—	
Loratadine	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	—	
<b>Total OTC medications</b>	<b>6.7 (6.1–7.2)</b>	<b>6.9 (6.3–7.5)</b>	<b>6.7 (6.2–7.2)</b>	<b>6.3 (5.8–6.8)</b>	<b>6.7 (6.2–7.2)</b>	<b>5.7 (5.3–6.1)</b>	<b>6.2 (5.7–6.7)</b>	<b>6.4 (5.9–6.9)</b>	<b>6.8 (6.3–7.4)</b>	<b>6.1 (5.5–6.7)</b>	—	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result; ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 problems managed.

Note: CI – confidence interval; OTC – over-the-counter medication; NEC – not elsewhere classified.

**Table 9.6b: Most frequently advised over-the-counter medications (rate per 100 encounters), 2003-04 to 2012-13**

Generic drug	Rate per 100 encounters (95% CI)											(a)
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Paracetamol	2.5 (2.1-2.8)	2.3 (2.0-2.6)	2.5 (2.2-2.8)	2.4 (2.1-2.7)	2.5 (2.2-2.9)	2.3 (2.0-2.6)	2.5 (2.2-2.8)	2.6 (2.3-2.9)	2.9 (2.5-3.2)	2.5 (2.0-3.0)	—	↔
Ibuprofen	0.5 (0.4-0.7)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.5 (0.5-0.6)	0.6 (0.5-0.7)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.7 (0.6-0.8)	0.6 (0.5-0.7)	—	—
Saline bath/ solution/gargle	0.1 (0.1-0.2)	0.2 (0.2-0.3)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.4)	↑	↑
Vitamin D3 (cholecalciferol)	0.0 <sup>†</sup> (0.0-0.0)	0.0 <sup>†</sup> (0.0-0.0)	0.0 <sup>†</sup> (0.0-0.0)	0.0 <sup>†</sup> (0.0-0.1)	0.1 (0.1-0.1)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	↔	↔
Simple analgesics	0.1 (0.0-0.1)	0.2 (0.1-0.2)	0.1 (0.0-0.1)	0.1 (0.0-0.1)	0.1 (0.0-0.1)	0.1 (0.1-0.1)	0.1 (0.0-0.1)	0.1 (0.0-0.1)	0.2 (0.1-0.3)	0.2 (0.1-0.3)	↑	↑
Sodium chloride topical nasal	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	↔	↔
Diclofenac topical	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	↔	↔
Cream/ointment/lotion NEC	0.0 <sup>†</sup> (0.0-0.1)	0.1 (0.1-0.1)	0.1 (0.0-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.0-0.1)	0.1 (0.0-0.1)	0.1 (0.0-0.1)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	↑	↑
Sodium/potassium/citric acid/glucose	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.3)	0.2 (0.1-0.2)	—	—
Loratadine	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	—	—
<b>Total OTC medications</b>	<b>9.8 (9.0-10.5)</b>	<b>10.1 (9.2-10.9)</b>	<b>9.8 (9.0-10.5)</b>	<b>9.4 (8.7-10.1)</b>	<b>10.1 (9.3-10.9)</b>	<b>8.9 (8.3-9.4)</b>	<b>9.5 (8.7-10.3)</b>	<b>9.8 (9.0-10.5)</b>	<b>10.5 (9.7-11.3)</b>	<b>9.4 (8.4-10.3)</b>	—	—

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↗↘ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↕ indicates a marginally significant change in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval; OTC – over-the-counter medication; NEC – not elsewhere classified.

## 10 Other treatments

This chapter summarises other non-pharmacological treatments (including clinical and procedural treatments) provided at, or in conjunction with, recorded GP–patient encounters in each of the 10 years of the BEACH study, 2003–04 to 2012–13. Clinical and procedural treatments are defined in Appendix 4, Tables A4.4 and A4.5. The survey form allowed GPs to record up to two other treatments for each problem managed at the encounter, and (since 2005–06) indicate if each of these has been done by a practice nurse.

In 2004, four Medicare item numbers were introduced into the MBS that allowed GPs to claim for specified tasks done by a practice nurse under the direction of the GP.<sup>22</sup> Over the years, new PN item numbers were added to the MBS and some items were broadened, to cover work done by AHWs.

In January 2012, the Australian Government significantly altered the payment structure for practice nurse and AHW activities in general practice, such that the range of claimable MBS item numbers was reduced and the Practice Nurse Incentive Program (PNIP) introduced. The PNIP ‘provides incentive payments to practices...by consolidating funding arrangements under the Practice Incentive Program (PIP) Practice Nurse Incentive’. Six of the Medicare Benefits Schedule (MBS) PN/AHW items were removed and the funds redirected into a single payment to eligible general practices.<sup>57</sup>

In Sections 10.1 and 10.2, all ‘other treatments’ are reported, irrespective of whether they were done by the GP or by the practice nurse at the encounter. That is, the non-pharmacological management provided at general practice patient encounters is described, rather than management provided specifically by the GP. However, in the analysis of procedural treatments (Section 10.2), injections given in provision of vaccines have been removed, as this action is already counted and reported in medications.

In Section 10.3, treatments provided by the PN/AHW (including the injections given for vaccination) are reported separately, to provide a picture of the work they undertake in association with GP–patient encounters. Routine clinical measurements or observations, such as measurements of blood pressure and physical examinations, were not included between 2003–04 and 2004–05. With the inclusion of practice nurse activities in BEACH since 2005–06, clinical observations have been recorded, but only when done by the practice nurse.

In Section 10.4, changes over time in the share between the GP and the practice nurses/Aboriginal health workers, of clinical treatments and procedural work done in association with the encounter, are investigated. The procedures analysed in Section 10.4 also include the injections given for immunisations.

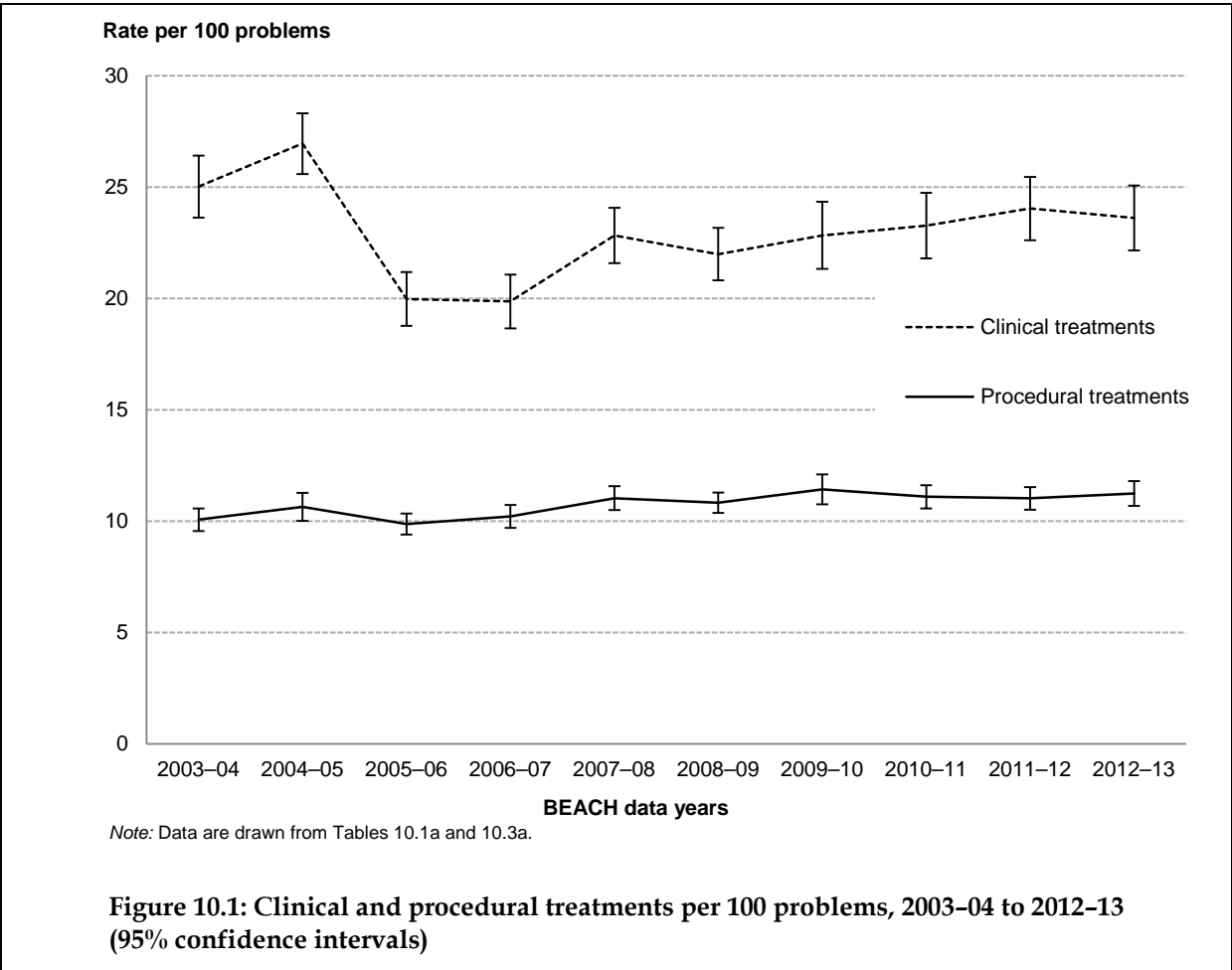
Other treatments data for the 10 years 2003–04 to 2012–13, are reported in two ways: as rates per 100 problems managed (e.g. Table 10.1a) and as rates per 100 encounters (e.g. Table 10.1b). In the text describing changes over time, the rates per 100 problems are reported as the primary measure, because there was a significant increase in the number of problems managed per encounter over the study period.

The direction and type of change from 2003–04 to 2012–13 is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) comparing 2012–13 with 2003–04; ↗/↘ indicates a marginally significant change comparing 2012–13 with 2003–04; – indicates there was no significant change across the decade; and § indicates no change comparing 2012–13 with 2003–04 but a noteworthy change within the decade.

Changes in the rate per 100 encounters are extrapolated to estimate the national increase or decrease in the other treatments provided between 2003–04 and 2012–13. Examples of extrapolated change are given. The method used to extrapolate to national change estimates is described in Section 2.9. Readers interested in the national impact of a specific measured change can apply this extrapolation method to any reported change.

More detailed analyses of other treatments recorded in BEACH in 2012–13 can be found in Chapter 10 of *General practice activity in Australia 2012–13*.<sup>1</sup>

Figure 10.1 demonstrates the non-linear change in the rate at which clinical treatments were provided per 100 problems from 2003–04 to 2012–13. Despite a significant decrease in clinical treatments in 2005–06, there was no significant difference in the rate of clinical treatments between 2003–04 and 2012–13. In contrast, the rate at which procedural treatments were performed at GP-patient encounters increased steadily, reaching a significantly higher level in 2012–13 than 10 years earlier. The changes are presented in more detail below.



## 10.1 Clinical treatments by GP, practice nurse, or Aboriginal health worker

While there was no statistically significant difference in the rate at which clinical treatments were provided in 2003–04 and 2012–13 (Table 10.1a and 10.1b), there were major changes within the decade.

The rate of clinical treatments provided at GP–patient encounters remained steady from 2003–04 to 2004–05. In November 2004, practice nurse Medicare item numbers were introduced and changes were made to the BEACH recording form to include practice nurse activity associated with the encounter in the 2005–06 BEACH year. In 2005–06, there was a sudden and significant decrease in the rate at which clinical treatments were provided by the GP or the practice nurse at GP–patient encounters (27.0 per 100 problems to 20.0 per 100). This was followed by a significant increase from 2006–07 and 2007–08 (19.9 per 100 problems to 22.8 per 100). Since then, rates slowly increased to reach 23.6 per 100 problems in 2012–13, returning to the level provided 10 years earlier (Table 10.1a).

This pattern of change was reflected in some specific types of clinical treatments.

- General advice and education was the most frequently recorded clinical treatment throughout the decade. Although there was no significant difference between the rate in 2003–04 and 2012–13, there was a significant decrease from 4.8 per 100 problems in 2004–05 to 3.3 per 100 in 2005–06. Since then, the rate at which general advice and education was provided has returned to a level nearing that of 2003–04.
- The rate at which other administrative procedure/ document and sick certificates were provided significantly increased from 2003–04 to 2012–13, however the changes were not linear. From 2003–04 to 2005–06, the rate of other administrative procedure/ document dropped from 1.2 to 0.7 per 100 problems. There was a gradual increase from 2005–06 onwards to reach 1.6 per 100 problems in 2012–13. For sickness certificates, there was a significant increase from 0.7 per 100 problems in 2003–04 to 1.2 per 100 problems in 2004–05. This remained steady until 2009–10 when there was a significant drop. Rates have since increased to a significantly higher rate in 2012–13 than ten years earlier.
- The rate at which counselling/ advice about nutrition/ weight was provided significantly decreased over the decade. The biggest decrease occurred in 2006–07, and rates have since remained steady at a significantly lower rate in 2012–13 than 10 years earlier. Considering the rise in the prevalence of overweight and obesity among Australian general practice patients (see Section 13.1) it is hoped that the decrease since 2005–06 reflects a shift of this role to practice nurses or other allied health professionals.
- Although there was no difference between 2003–04 and 2012–13, in 2005–06 there were significant decreases in the rates of: advice/ education; advice/ education about treatment; advice/ education about medication; reassurance/ support; counselling/ advice about exercise and counselling/ advice about smoking (Table 10.1a).

There were more encounters claimed through Medicare in 2012–13 than in 2003–04 due to the increased attendance rate over the study period and this affects the number of clinical treatments provided nationally (see Table 2.1). On the basis of the clinical treatment rates reported in Table 10.1b, we estimate that 11 million more clinical treatments were provided at GP–patient encounters nationally in 2012–13 than 10 years earlier.

There was no significant change in the rate at which one or more clinical treatments were provided in the management of selected problems between 2003–04 (32.4 per 100 encounters) and 2012–13 (32.6 per 100 encounters). However, there were significant changes in the clinical treatment rate for several specific problems over the decade (Table 10.2).

- In 2012–13, URTI was the problem that accounted for the most clinical treatments, provided at a rate of 2.0 per 100 encounters. This means that for every 100 encounters, one or more clinical treatments were provided in the management of URTI on two occasions.
- The rates at which hypertension, lipid disorders, and test results were managed with a clinical treatment remained fairly steady through the decade, with the exception of a significant increase from 2006–07 to 2007–08.
- There was a marginal increase in the clinical treatment rate for diabetes over the decade, from 0.9 per 100 encounters in 2003–04 to 1.2 per 100 encounters in 2012–13.

## 10.2 Procedures by GP, practice nurse, or Aboriginal health worker

There was a significant increase in the rate at which procedures were performed from 2003–04 (10.1 per 100 problems) to 2012–13 (11.2 per 100 problems) (Table 10.3a). The extrapolated effect of this change from 14.7 per 100 encounters in 2003–04 to 17.4 per 100 in 2012–13 (Table 10.3b) is that nationally in 2012–13 there were an estimated 7.9 million more procedures undertaken than a decade earlier. However, this was largely due to increased numbers of problems managed at encounters and increased attendance rates.

- The most frequently recorded group of procedures were excision/removal tissue/biopsy/destruction/debridement/cauterisation. These were provided at a similar rate throughout the decade, reaching 2.0 per 100 problems in 2012–13 (Table 10.3a).
- The provision of local injections/infiltration (excluding local injection performed for immunisations) significantly increased over the decade from 1.1 to 1.5 per 100 problems. When extrapolated, the increase equates to provision of 1.4 million more local injections/infiltrations nationally in 2012–13 than in 2003–04 (Table 10.3b).
- There were also significant increases in INR tests, other preventive procedures/high-risk medication and PN/AHW check-ups per 100 problems managed.
- There was a marginal decrease in the frequency of Pap smears from 0.7 per 100 problems in 2003–04 to 0.5 in 2012–13.

There was an overall increase in the likelihood of a procedure being undertaken in the management of an individual problem. For every 100 GP-patient encounters in 2003–04, on average, 13.7 problems were managed with one or more procedures. By 2012–13 this had increased to 16.3 problems per 100 encounters (Table 10.4). Extrapolation of this result suggested about 7.5 million more problems were managed with one or more procedures in 2012–13 than a decade earlier.

- Female genital check-up/Pap smear was the most common problem managed with a procedure in all years, accounting for 0.8 procedures per 100 total encounters in 2012–13.
- There was a significant rise in the rate at which a procedure was undertaken for management of laceration/cut from 0.5 per 100 encounters in 2003–04 to 0.8 per 100 encounters in 2012–13. When extrapolated, the increase equates to provision of 530,000 more procedures for laceration/cut nationally in 2012–13 than in 2003–04.

**Table 10.1a: The most frequent clinical treatments (rate per 100 problems), 2003–04 to 2012–13**

Treatment	Rate per 100 problems (95% CI)											<sup>(a)</sup>
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Advice/education NEC*	4.7 (4.2–5.2)	4.8 (4.3–5.2)	3.3 (2.8–3.7)	3.9 (3.4–4.4)	4.7 (4.2–5.3)	4.0 (3.5–4.4)	4.1 (3.5–4.6)	3.9 (3.4–4.4)	3.8 (3.4–4.3)	3.7 (3.2–4.3)	3.7 (3.2–4.3)	§
Counselling – problem*	3.2 (2.8–3.6)	2.9 (2.5–3.3)	3.3 (2.8–3.7)	2.9 (2.5–3.4)	2.9 (2.5–3.2)	2.5 (2.1–2.8)	2.8 (2.4–3.2)	3.5 (2.9–4.0)	3.0 (2.5–3.5)	3.2 (2.8–3.7)	3.2 (2.8–3.7)	–
Counselling/advice – nutrition/weight*	3.2 (2.9–3.5)	3.7 (3.3–4.0)	2.5 (2.2–2.7)	2.3 (2.0–2.5)	2.8 (2.5–3.0)	2.6 (2.4–2.9)	2.4 (2.2–2.7)	2.6 (2.3–2.9)	2.6 (2.3–2.9)	2.4 (2.2–2.7)	2.4 (2.2–2.7)	↓
Advice/education – treatment*	3.0 (2.6–3.3)	3.1 (2.8–3.5)	2.1 (1.8–2.4)	1.9 (1.7–2.1)	2.3 (2.0–2.5)	2.3 (2.0–2.6)	2.6 (2.2–3.0)	2.2 (1.9–2.5)	2.5 (2.3–2.8)	2.4 (2.2–2.7)	2.4 (2.2–2.7)	–
Advice/education – medication*	2.3 (2.1–2.5)	2.3 (2.1–2.5)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.3 (1.2–1.5)	1.5 (1.3–1.7)	1.6 (1.4–1.7)	1.8 (1.6–2.0)	2.1 (1.9–2.3)	2.1 (1.9–2.3)	2.1 (1.9–2.3)	–
Counselling – psychological*	2.0 (1.8–2.1)	2.2 (2.0–2.4)	2.1 (1.9–2.3)	1.9 (1.8–2.1)	2.1 (2.0–2.3)	2.1 (1.9–2.3)	2.2 (2.1–2.4)	2.1 (1.9–2.3)	2.2 (2.0–2.3)	2.0 (1.9–2.2)	2.0 (1.9–2.2)	–
Other administrative procedure/document (excl. sickness certificate)*	1.2 (1.1–1.3)	0.9 (0.8–1.0)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.2 (1.1–1.3)	1.3 (1.2–1.5)	1.2 (1.1–1.4)	1.4 (1.3–1.5)	1.6 (1.5–1.7)	1.6 (1.5–1.7)	§
Sickness certificate*	0.7 (0.6–0.8)	1.2 (1.0–1.3)	1.1 (0.9–1.3)	1.1 (0.9–1.2)	1.1 (0.9–1.3)	1.3 (1.1–1.5)	0.9 (0.8–1.0)	1.1 (0.9–1.2)	1.1 (1.0–1.3)	1.2 (1.0–1.4)	1.2 (1.0–1.4)	§
Reassurance, support*	1.0 (0.9–1.2)	1.1 (0.9–1.2)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.9 (0.8–1.1)	1.0 (0.8–1.1)	0.9 (0.7–1.1)	0.9 (0.7–1.0)	1.0 (0.9–1.1)	0.9 (0.7–1.0)	0.9 (0.7–1.0)	–
Counselling/advice – exercise*	1.0 (0.9–1.2)	1.3 (1.1–1.5)	0.7 (0.6–0.9)	0.8 (0.6–0.9)	0.9 (0.7–1.0)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.9 (0.7–1.0)	0.8 (0.7–0.9)	0.7 (0.6–0.9)	0.7 (0.6–0.9)	↓
Counselling/advice – lifestyle*	0.2 (0.1–0.2)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.1 (0.1–0.2)	0.4 (0.3–0.4)	0.3 (0.2–0.4)	0.5 (0.4–0.6)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	§
Counselling/advice – smoking*	0.4 (0.4–0.5)	0.6 (0.5–0.6)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.6 (0.5–0.6)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	–
Counselling/advice – health/body*	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.3 (0.2–0.4)	↑

(continued)



Table 10.1a (continued): The most frequent clinical treatments (rate per 100 problems), 2003–04 to 2012–13

Treatment	Rate per 100 problems (95% CI)											(a)
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)	↑ ↓	
Counselling/advice – prevention*	0.3 (0.2–0.3)	0.3 (0.2–0.4)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.3 (0.3–0.4)	0.2 (0.2–0.3)	0.4 (0.3–0.5)	0.3 (0.2–0.4)	0.4 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	–
Counselling/advice – alcohol*	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	–
Family planning*	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	–
Consultation with primary care provider*	0.0 <sup>f</sup> (0.0–0.1)	0.1 (0.1–0.1)	0.0 <sup>f</sup> (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	↑
Observe/wait*	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.4)	0.2 (0.1–0.3)	0.2 (0.1–0.2)	0.3 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	–
<b>Total clinical treatments</b>	<b>25.0 (23.6–26.4)</b>	<b>27.0 (25.6–28.3)</b>	<b>20.0 (18.8–21.2)</b>	<b>19.9 (18.7–21.1)</b>	<b>22.8 (21.6–24.1)</b>	<b>22.0 (20.8–23.2)</b>	<b>22.8 (21.3–24.3)</b>	<b>23.3 (21.8–24.8)</b>	<b>24.0 (22.6–25.5)</b>	<b>23.6 (22.2–25.1)</b>	<b>\$</b>	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑ ↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑ ↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and \$ indicates a noteworthy change during the decade.

\* Includes multiple ICP-2 or ICPC-2 PLUS codes (see Appendix 4, Table A4.4, <hdl.handle.net/2123/9366>)

Note: CI – confidence interval; NEC – not elsewhere classified; excl – excluding.

**Table 10.1b: The most frequent clinical treatments (rate per 100 encounters), 2003-04 to 2012-13**

Treatment	Rate per 100 encounters (95% CI)											<sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Advice/education NEC*	6.8 (6.1-7.6)	7.0 (6.3-7.7)	4.8 (4.1-5.4)	5.7 (5.0-6.5)	7.2 (6.3-8.1)	6.1 (5.4-6.9)	6.2 (5.3-7.1)	6.0 (5.1-6.8)	5.9 (5.2-6.6)	5.8 (4.9-6.6)	5	
Counselling – problem*	4.7 (4.1-5.3)	4.2 (3.6-4.7)	4.8 (4.1-5.4)	4.4 (3.7-5.0)	4.3 (3.8-4.9)	3.8 (3.3-4.4)	4.3 (3.7-5.0)	5.3 (4.4-6.2)	4.6 (3.8-5.4)	5.0 (4.3-5.7)	–	
Counselling/advice – nutrition/weight*	4.6 (4.2-5.1)	5.3 (4.8-5.8)	3.6 (3.2-4.0)	3.4 (3.0-3.7)	4.2 (3.8-4.6)	4.1 (3.6-4.5)	3.7 (3.4-4.1)	4.0 (3.5-4.4)	4.0 (3.6-4.4)	3.8 (3.3-4.2)	5	
Advice/education – treatment*	4.4 (3.8-4.9)	4.6 (4.1-5.0)	3.1 (2.6-3.5)	2.8 (2.5-3.1)	3.5 (3.1-3.8)	3.5 (3.1-4.0)	3.9 (3.3-4.5)	3.4 (2.9-3.8)	3.9 (3.5-4.3)	3.7 (3.3-4.1)	–	
Advice/education – medication*	3.4 (3.1-3.7)	3.4 (3.0-3.7)	1.6 (1.4-1.7)	1.8 (1.6-2.0)	2.0 (1.8-2.2)	2.3 (2.1-2.6)	2.4 (2.2-2.6)	2.7 (2.5-3.0)	3.2 (2.9-3.5)	3.2 (2.9-3.5)	–	
Counselling – psychological*	2.9 (2.6-3.1)	3.2 (2.9-3.5)	3.0 (2.8-3.3)	2.9 (2.6-3.1)	3.2 (2.9-3.4)	3.2 (3.0-3.5)	3.4 (3.2-3.7)	3.2 (3.0-3.5)	3.3 (3.0-3.6)	3.1 (2.9-3.4)	–	
Other administrative procedure/document (excl. sickness certificate)*	1.8 (1.6-2.0)	1.3 (1.2-1.5)	1.0 (0.9-1.1)	1.2 (1.1-1.4)	1.5 (1.4-1.7)	1.8 (1.7-2.0)	2.1 (1.9-2.3)	1.9 (1.7-2.1)	2.2 (2.0-2.4)	2.5 (2.2-2.7)	5	
Sickness certificate*	1.0 (0.9-1.2)	1.7 (1.5-1.9)	1.6 (1.4-1.9)	1.6 (1.3-1.8)	1.7 (1.4-2.0)	1.9 (1.6-2.2)	1.4 (1.2-1.6)	1.6 (1.4-1.8)	1.8 (1.5-2.0)	1.8 (1.5-2.1)	5	
Reassurance, support*	1.5 (1.3-1.7)	1.6 (1.4-1.8)	1.0 (0.8-1.2)	1.1 (0.9-1.3)	1.4 (1.2-1.6)	1.5 (1.3-1.8)	1.4 (1.1-1.7)	1.3 (1.1-1.5)	1.5 (1.3-1.8)	1.3 (1.1-1.5)	–	
Counselling/advice – exercise*	1.5 (1.3-1.7)	1.9 (1.6-2.1)	1.1 (0.9-1.2)	1.1 (1.0-1.3)	1.3 (1.1-1.5)	1.4 (1.2-1.6)	1.2 (1.0-1.4)	1.4 (1.1-1.6)	1.3 (1.1-1.5)	1.1 (0.9-1.3)	5	
Counselling/advice – lifestyle*	0.3 (0.2-0.4)	0.4 (0.3-0.5)	0.5 (0.3-0.6)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.2 (0.1-0.3)	0.5 (0.4-0.7)	0.5 (0.4-0.6)	0.8 (0.6-0.9)	0.7 (0.5-0.8)	–	
Counselling/advice – smoking*	0.6 (0.6-0.7)	0.8 (0.7-0.9)	0.5 (0.4-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.7)	0.7 (0.7-0.8)	0.7 (0.6-0.8)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.7 (0.6-0.7)	–	
Counselling/advice – health/body*	0.3 (0.2-0.3)	0.4 (0.3-0.4)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.3 (0.2-0.4)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.5 (0.3-0.6)	5	

(continued)

Table 10.1b (continued): The most frequent clinical treatments (rate per 100 encounters), 2003-04 to 2012-13

Treatment	Rate per 100 encounters (95% CI)											(a)
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)	↑ ↓	
Counselling/advice – prevention*	0.4 (0.3-0.5)	0.4 (0.4-0.5)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.5 (0.4-0.6)	0.4 (0.3-0.5)	0.6 (0.5-0.7)	0.4 (0.3-0.5)	0.6 (0.4-0.7)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	—
Counselling/advice – alcohol*	0.4 (0.3-0.4)	0.5 (0.4-0.5)	0.3 (0.3-0.3)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.5)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	—
Family planning*	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.2-0.3)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.2-0.3)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	—
Observe/wait*	0.3 (0.2-0.4)	0.4 (0.3-0.5)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	0.4 (0.3-0.6)	0.3 (0.2-0.4)	0.3 (0.2-0.3)	0.4 (0.3-0.5)	0.4 (0.2-0.3)	0.2 (0.2-0.3)	—
Counselling/advice – pregnancy*	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.4)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.3 (0.3-0.4)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	—
Counselling/advice – relaxation*	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.3 (0.2-0.4)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.1 (0.1-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.2)	0.2 (0.2-0.2)	—
Counselling/advice – other*	0.1 (0.1-0.1)	0.3 (0.2-0.4)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	↑
<b>Total clinical treatments</b>	<b>36.6 (34.5-38.7)</b>	<b>39.2 (37.1-41.4)</b>	<b>29.2 (27.3-31.1)</b>	<b>29.5 (27.6-31.4)</b>	<b>34.5 (32.5-36.5)</b>	<b>34.0 (32.1-35.9)</b>	<b>35.0 (32.6-37.4)</b>	<b>35.5 (33.2-37.8)</b>	<b>37.0 (34.6-39.3)</b>	<b>36.5 (34.2-38.9)</b>	<b>36.5 (34.2-38.9)</b>	<b>§</b>

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↑/↓ indicates a marginally significant change in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04; and § indicates a noteworthy change during the decade.

\* Includes multiple ICP-2 or ICP-2 PLUS codes (see Appendix 4, Table A4.4, <hdl.handle.net/2123/9366>)

Note: CI – confidence interval; NEC – not elsewhere classified; excl – excluding.

**Table 10.2: The most common problems managed with one or more clinical treatments, 2003–04 to 2012–13**

Problem managed	Rate at which a selected problem was managed with a clinical treatment, per 100 encounters <sup>(a)</sup> (95% CI)												<sup>(b)</sup>
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)	↑	↓	
Upper respiratory tract infection	1.6 (1.4–1.8)	1.8 (1.5–2.0)	1.6 (1.3–1.8)	1.4 (1.3–1.6)	1.8 (1.6–2.0)	1.7 (1.5–1.9)	1.9 (1.6–2.2)	1.7 (1.4–1.9)	1.7 (1.5–1.9)	2.0 (1.6–2.3)	—	—	
Depression*	1.7 (1.6–1.9)	1.8 (1.7–2.0)	1.6 (1.5–1.8)	1.5 (1.4–1.6)	1.8 (1.6–1.9)	1.8 (1.7–2.0)	1.9 (1.7–2.1)	1.8 (1.6–1.9)	1.8 (1.6–2.0)	1.7 (1.5–1.8)	—	—	
Diabetes – all*	0.9 (0.8–1.0)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	1.1 (0.9–1.2)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.1 (1.0–1.2)	1.2 (1.0–1.3)	↑	—	
Hypertension*	1.3 (1.1–1.4)	1.3 (1.2–1.5)	1.0 (0.9–1.2)	0.9 (0.8–1.0)	1.2 (1.1–1.4)	1.1 (1.0–1.2)	1.0 (0.8–1.1)	1.1 (0.9–1.3)	1.1 (1.0–1.3)	1.0 (0.9–1.2)	—	—	
Anxiety*	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	—	—	
Lipid disorder	0.8 (0.7–0.9)	1.0 (0.9–1.1)	0.8 (0.7–0.9)	0.8 (0.7–0.8)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	—	—	
Gastroenteritis*	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.7 (0.6–0.7)	0.7 (0.6–0.7)	0.8 (0.7–0.9)	0.7 (0.6–0.7)	0.6 (0.5–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.6 (0.5–0.7)	—	—	
Back complaint*	0.5 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	—	—	
Test results*	0.4 (0.3–0.5)	0.5 (0.4–0.6)	0.5 (0.3–0.6)	0.4 (0.3–0.4)	0.6 (0.5–0.7)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	↑	—	
Acute stress reaction	0.4 (0.3–0.5)	0.5 (0.4–0.5)	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	↑	—	
Administrative procedure – all*	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	↑	—	
Osteoarthritis*	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.3 (0.3–0.4)	0.3 (0.2–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	—	—	

(continued)

**Table 10.2 (continued): The most common problems managed with one or more clinical treatments, 2003–04 to 2012–13**

Problem managed	Rate at which a selected problem was managed with a clinical treatment, per 100 encounters <sup>(a)</sup> (95% CI)											<sup>(b)</sup>
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
General check-up*	0.3 (0.2–0.4)	0.4 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.5)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	↑
Asthma	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.5)	0.3 (0.3–0.4)	0.4 (0.4–0.5)	0.4 (0.4–0.5)	↓
Viral disease, other/NOS	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.4 (0.3–0.5)	0.4 (0.3–0.4)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	↓
<b>Total problems with one or more clinical treatments</b>	<b>32.4 (30.7–34.2)</b>	<b>34.4 (32.6–36.2)</b>	<b>26.7 (25.1–28.3)</b>	<b>26.8 (25.1–28.4)</b>	<b>31.2 (29.5–33.0)</b>	<b>30.9 (29.2–32.5)</b>	<b>31.5 (29.5–33.5)</b>	<b>31.8 (29.8–33.8)</b>	<b>32.9 (30.9–34.9)</b>	<b>32.6 (30.6–34.5)</b>	<b>32.6 (30.6–34.5)</b>	<b>§</b>

(a) Rate of provision of clinical treatment for selected problem per 100 total encounters.

(b) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

\* Includes multiple ICP-2 or ICP-2 PLUS codes (see Appendix 4, Table A4.1, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; NOS – not otherwise specified. This table includes individual problems that had clinical treatments given at a rate of more than or equal to 0.5 per 100 encounters in any year, and any other statistically significant differences of interest.

**Table 10.3a: The most frequent procedural treatments (rate per 100 problems), 2003-04 to 2012-13**

Treatment	Rate per 100 problems (95% CI)											<sup>(a)</sup> ↑ ↓
	2003-04 (n = 144,674)	2004-05 (n = 137,330)	2005-06 (n = 149,088)	2006-07 (n = 136,333)	2007-08 (n = 145,078)	2008-09 (n = 149,462)	2009-10 (n = 155,373)	2010-11 (n = 146,141)	2011-12 (n = 152,286)	2012-13 (n = 152,517)		
Excision/removal tissue/ biopsy/destruction/ debridement/cauterisation*	2.1 (1.8-2.4)	2.3 (2.0-2.5)	2.0 (1.9-2.2)	2.3 (2.0-2.5)	2.3 (2.0-2.5)	2.1 (1.9-2.2)	1.9 (1.8-2.1)	1.9 (1.7-2.0)	1.8 (1.7-2.0)	2.0 (1.8-2.1)	—	
Dressing/pressure/ compression/tamponade*	1.3 (1.2-1.4)	1.4 (1.2-1.5)	1.4 (1.3-1.5)	1.5 (1.4-1.6)	1.5 (1.4-1.6)	1.5 (1.4-1.6)	1.6 (1.4-1.7)	1.7 (1.5-1.8)	1.7 (1.5-1.8)	1.6 (1.4-1.7)	—	
Local injection/ infiltration* <sup>(b)</sup>	1.1 (1.0-1.2)	1.4 (1.2-1.5)	1.3 (1.2-1.5)	1.3 (1.2-1.4)	1.5 (1.4-1.6)	1.5 (1.4-1.6)	1.6 (1.5-1.8)	1.6 (1.4-1.8)	1.4 (1.3-1.5)	1.5 (1.4-1.7)	↑	
Physical medicine/ rehabilitation - all*	1.1 (1.0-1.3)	1.4 (1.2-1.6)	0.9 (0.8-1.1)	0.7 (0.6-0.9)	0.8 (0.7-1.0)	0.8 (0.7-0.9)	0.8 (0.7-1.0)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.9 (0.8-1.1)	§	
Incision/drainage/flushing/ aspiration/removal body fluid*	0.8 (0.7-0.9)	0.7 (0.7-0.8)	0.9 (0.8-1.0)	0.9 (0.8-0.9)	0.8 (0.7-0.9)	0.8 (0.8-0.9)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.7 (0.7-0.8)	0.7 (0.6-0.8)	—	
Other therapeutic procedures/minor surgery*	0.8 (0.6-0.9)	0.8 (0.6-1.1)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.6 (0.2-1.0)	0.5 (0.3-0.6)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	—	
Repair/fixation - suture/ cast/prosthetic device (apply/remove)*	0.6 (0.5-0.6)	0.6 (0.6-0.7)	0.7 (0.6-0.7)	0.7 (0.6-0.7)	0.6 (0.5-0.7)	0.5 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	—	
Pap smear*	0.7 (0.6-0.9)	0.7 (0.6-0.8)	0.7 (0.6-0.7)	0.6 (0.5-0.7)	0.7 (0.6-0.8)	0.8 (0.7-0.9)	0.7 (0.6-0.8)	0.6 (0.5-0.7)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	↓	
INR test*	N/A	N/A	N/A	0.1 (0.0-0.1)	0.2 (0.2-0.3)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	0.5 (0.4-0.6)	↑	
Other preventive procedures/ high-risk medication*	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.3 (0.2-0.3)	0.4 (0.3-0.5)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.5 (0.4-0.5)	↑	
Check-up - PN/AHW*	N/A	N/A	N/A	0.1 (0.1-0.2)	0.2 (0.2-0.3)	0.3 (0.2-0.4)	0.4 (0.2-0.7)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	↑	
Electrical tracings*	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.4-0.5)	0.4 (0.3-0.4)	↑	
Physical function test*	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.2-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	—	

(continued)

Table 10.3a (continued): The most frequent procedural treatments (rate per 100 problems), 2003–04 to 2012–13

Treatment	Rate per 100 problems (95% CI)											2012–13 ↑ <sup>(a)</sup> ↓
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Other diagnostic procedures*	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.1–0.4)	—
Urine test*	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	—
Glucose test*	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	—
Pregnancy test*	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	—
<b>Total procedural treatments</b>	<b>10.1 (9.6–10.6)</b>	<b>10.6 (10.0–11.3)</b>	<b>9.9 (9.4–10.3)</b>	<b>10.2 (9.7–10.7)</b>	<b>11.0 (10.5–11.6)</b>	<b>10.8 (10.4–11.3)</b>	<b>11.4 (10.8–12.1)</b>	<b>11.1 (10.6–11.6)</b>	<b>11.0 (10.5–11.5)</b>	<b>11.2 (10.7–11.8)</b>	<b>11.2 (10.7–11.8)</b>	<b>↑</b>

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

(b) Excludes all local injection/infiltrations performed for immunisations.

\* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 4, Tables A4.5 and A4.6, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; NEC – not elsewhere classified; N/A – not applicable; PN – practice nurse; AHW – Aboriginal health worker.

**Table 10.3b: The most frequent procedural treatments (rate per 100 encounters), 2003-04 to 2012-13**

Treatment	Rate per 100 encounters (95% CI)											2012-13 (n = 98,564) ↑ <sup>(a)</sup> ↓
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)	2012-13 (n = 98,564)	
Excision/removal tissue/ biopsy/destruction/ debridement/cauterisation*	3.1 (2.7-3.6)	3.3 (3.0-3.6)	3.0 (2.7-3.2)	3.3 (3.0-3.7)	3.4 (3.1-3.8)	3.2 (2.9-3.5)	3.0 (2.7-3.2)	2.9 (2.6-3.1)	2.8 (2.6-3.0)	3.0 (2.7-3.3)	—	
Dressing/pressure/ compression/tamponade*	1.8 (1.7-2.0)	2.0 (1.8-2.1)	2.1 (1.9-2.3)	2.3 (2.1-2.4)	2.2 (2.1-2.4)	2.3 (2.1-2.4)	2.4 (2.2-2.6)	2.5 (2.4-2.7)	2.5 (2.3-2.7)	2.4 (2.2-2.6)	↑	
Local injection/ infiltration* <sup>(b)</sup>	1.6 (1.4-1.8)	2.0 (1.7-2.2)	2.0 (1.8-2.2)	1.9 (1.7-2.1)	2.3 (2.1-2.5)	2.3 (2.1-2.4)	2.5 (2.3-2.7)	2.4 (2.2-2.7)	2.2 (2.0-2.4)	2.3 (2.1-2.6)	↑	
Physical medicine/ rehabilitation - all*	1.7 (1.5-1.9)	2.0 (1.7-2.3)	1.4 (1.1-1.6)	1.1 (0.9-1.3)	1.3 (1.1-1.5)	1.2 (1.1-1.3)	1.2 (1.0-1.5)	1.2 (1.1-1.4)	1.4 (1.2-1.6)	1.4 (1.2-1.7)	§	
Incision/drainage/flushing/ aspiration/removal body fluid*	1.2 (1.1-1.3)	1.0 (1.0-1.1)	1.3 (1.2-1.4)	1.3 (1.1-1.4)	1.2 (1.1-1.3)	1.3 (1.2-1.4)	1.4 (1.2-1.5)	1.2 (1.1-1.3)	1.2 (1.0-1.3)	1.1 (1.0-1.2)	—	
Other therapeutic procedures/minor surgery*	1.1 (0.9-1.3)	1.2 (0.9-1.5)	0.8 (0.7-0.9)	0.7 (0.6-0.9)	0.8 (0.6-0.9)	0.9 (0.7-1.1)	1.0 (0.4-1.6)	0.7 (0.5-0.9)	0.8 (0.6-1.0)	0.9 (0.7-1.1)	—	
Repair/fixation - suture/ cast/prosthetic device (apply/remove)*	0.8 (0.7-0.9)	0.9 (0.8-1.0)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	0.8 (0.8-0.9)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	—	
Pap smear*	1.1 (0.9-1.3)	1.0 (0.8-1.1)	1.0 (0.8-1.1)	0.9 (0.8-1.0)	1.1 (0.9-1.2)	1.2 (1.0-1.3)	1.0 (0.9-1.2)	1.0 (0.8-1.1)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	↓	
INR test*	N/A	N/A	N/A	0.1 (0.1-0.2)	0.4 (0.3-0.5)	0.5 (0.4-0.6)	0.6 (0.4-0.7)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.8 (0.6-0.9)	↑	
Other preventive procedures/ high-risk medication*	0.3 (0.2-0.4)	0.3 (0.3-0.4)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.4 (0.3-0.5)	0.6 (0.5-0.7)	0.5 (0.5-0.6)	0.6 (0.5-0.7)	0.5 (0.4-0.6)	0.7 (0.6-0.8)	↑	
Check-up - PN/AHW*	N/A	N/A	N/A	0.2 (0.1-0.3)	0.4 (0.3-0.4)	0.4 (0.2-0.5)	0.7 (0.3-1.0)	0.6 (0.4-0.8)	0.6 (0.4-0.7)	0.7 (0.5-0.8)	↑	
Electrical tracings*	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.5)	0.5 (0.4-0.5)	0.6 (0.5-0.6)	0.5 (0.4-0.5)	0.6 (0.5-0.7)	0.6 (0.5-0.6)	0.7 (0.6-0.7)	0.6 (0.5-0.6)	↑	
Physical function test*	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.6 (0.4-0.7)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.6 (0.4-0.7)	0.5 (0.4-0.6)	—	

(continued)



Table 10.3b (continued): The most frequent procedural treatments (rate per 100 encounters), 2003-04 to 2012-13

Treatment	Rate per 100 encounters (95% CI)											<sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)		
Other diagnostic procedures*	0.2 (0.1-0.3)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.3)	0.2 (0.1-0.3)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	0.4 (0.2-0.6)	—
Urine test*	0.3 (0.3-0.4)	0.3 (0.2-0.4)	0.3 (0.2-0.3)	0.3 (0.3-0.4)	0.4 (0.4-0.5)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	—
Hormone implant*	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	—
Glucose test*	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.3)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	↓
Pregnancy test*	0.2 (0.2-0.2)	0.2 (0.2-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.2)	0.2 (0.2-0.2)	0.1 (0.1-0.1)	↓
<b>Total procedural treatments</b>	<b>14.7 (14.0-15.5)</b>	<b>15.5 (14.6-16.4)</b>	<b>14.4 (13.7-15.1)</b>	<b>15.2 (14.4-16.0)</b>	<b>16.7 (15.9-17.5)</b>	<b>16.7 (16.0-17.5)</b>	<b>17.5 (16.5-18.6)</b>	<b>16.9 (16.1-17.8)</b>	<b>16.9 (16.1-17.8)</b>	<b>17.4 (16.5-18.3)</b>	<b>17.4 (16.5-18.3)</b>	↑

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↑/↓ indicates a marginally significant change in 2012-13 compared with 2003-04; — indicates there was no significant change in 2012-13 compared with 2003-04.

(b) Excludes all local injection/infiltrations performed for immunisations.

\* Includes multiple ICPC-2 or ICPC-2 PLUS codes (see Appendix 4, Tables A4.5 and A4.6, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; N/A – not applicable; NEC – not elsewhere classified; PN – practice nurse; AHW – Aboriginal health worker.

**Table 10.4: The most common problems managed with one or more procedural treatments, 2003-04 to 2012-13**

Problem managed	Rate at which a selected problem was managed with a procedure, per 100 encounters (95% CI)												<sup>(a)</sup>
	2003-04 (n = 98,877)	2004-05 (n = 94,386)	2005-06 (n = 101,993)	2006-07 (n = 91,805)	2007-08 (n = 95,898)	2008-09 (n = 96,688)	2009-10 (n = 101,349)	2010-11 (n = 95,839)	2011-12 (n = 99,030)	2012-13 (n = 98,564)			
Female genital check-up/ Pap smear*	0.8 (0.7-1.0)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.9 (0.8-1.0)	1.1 (0.9-1.2)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	—	
Laceration/cut	0.5 (0.4-0.6)	0.5 (0.5-0.6)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.8)	0.7 (0.6-0.7)	0.7 (0.7-0.8)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	↑	
Solar keratosis/sunburn	0.9 (0.8-1.1)	0.9 (0.7-1.1)	0.9 (0.8-1.0)	0.9 (0.8-1.0)	0.9 (0.8-1.1)	0.9 (0.8-1.0)	0.8 (0.7-0.9)	0.8 (0.7-0.9)	0.7 (0.6-0.8)	0.8 (0.6-0.9)	0.8 (0.6-0.9)	—	
Excessive ear wax	0.5 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.6-0.7)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	—	
Malignant neoplasm, skin	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.4 (0.3-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.6 (0.5-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	—	
Warts	0.5 (0.4-0.5)	0.5 (0.4-0.5)	0.5 (0.5-0.6)	0.6 (0.5-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.5)	0.4 (0.4-0.5)	0.5 (0.4-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	—	
General check-up*	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.3 (0.2-0.3)	0.4 (0.3-0.5)	0.3 (0.3-0.4)	0.5 (0.4-0.6)	0.4 (0.3-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	↑	
Chronic ulcer skin (including varicose ulcer)	0.4 (0.3-0.5)	0.4 (0.3-0.4)	0.4 (0.4-0.5)	0.5 (0.4-0.5)	0.4 (0.3-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.4 (0.4-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.4 (0.4-0.5)	—	
Atrial fibrillation/flutter	0.0 <sup>†</sup> (0.0-0.0)	0.0 <sup>†</sup> (0.0-0.0)	0.1 (0.0-0.1)	0.1 (0.1-0.1)	0.2 (0.2-0.3)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	0.4 (0.3-0.5)	↑	
Vitamin/nutritional deficiency	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.4)	0.3 (0.2-0.3)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	↑	
Back complaint*	0.4 (0.3-0.5)	0.5 (0.4-0.6)	0.3 (0.2-0.4)	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.4)	0.3 (0.2-0.5)	0.2 (0.2-0.3)	0.3 (0.3-0.4)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	—	
Skin symptom/complaint, other	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.3 (0.2-0.3)	0.3 (0.2-0.4)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.2 (0.2-0.3)	0.3 (0.2-0.3)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	↑	
Sprain/strain*	0.4 (0.3-0.4)	0.5 (0.4-0.6)	0.4 (0.3-0.4)	0.3 (0.2-0.3)	0.4 (0.3-0.5)	0.3 (0.2-0.3)	0.3 (0.2-0.5)	0.3 (0.3-0.4)	0.3 (0.2-0.4)	0.3 (0.2-0.4)	0.3 (0.2-0.3)	↓	

(continued)

**Table 10.4 (continued): The most common problems managed with one or more procedural treatments, 2003–04 to 2012–13**

Problem managed	Rate at which a selected problem was managed with a procedure, per 100 encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)	↑/↓	
Depression*	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	↑
Skin disease, other	0.2 (0.2–0.3)	0.3 (0.2–0.4)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	—
Osteoarthritis*	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.3 (0.1–0.6)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	—
Skin infection, other	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	—
<b>Total problems with one or more procedures</b>	<b>13.7 (13.1–14.4)</b>	<b>14.3 (13.5–15.0)</b>	<b>13.6 (12.9–14.2)</b>	<b>14.3 (13.6–15.0)</b>	<b>15.6 (14.9–16.4)</b>	<b>15.6 (15.0–16.3)</b>	<b>16.4 (15.4–17.3)</b>	<b>15.9 (15.1–16.6)</b>	<b>15.8 (15.1–16.5)</b>	<b>16.3 (15.5–17.0)</b>	<b>16.3 (15.5–17.0)</b>	<b>↑</b>

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

\* Includes multiple ICP-2 or ICP-2 PLUS codes (see Appendix 4, Table A4.1, <http://handle.net/2123/9366>)

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: CI – confidence interval. This table includes individual problems that had procedural treatments done at a rate of  $\geq 0.5$  per 100 encounters in any year, and any other statistically significant differences of interest.

## 10.3 Practice nurse/Aboriginal health worker activity

This section describes changes over the decade in the activities of practice nurses (PNs) and Aboriginal health workers (AHWs) that were recorded in association with the GP-patient encounters detailed by the GP BEACH participants.

In 2004, four Medicare item numbers were introduced into the MBS that allowed GPs to claim for specified tasks done by a PN under the direction of the GP.<sup>22</sup> In 2005-06, the BEACH recording form was amended to capture this information.

GPs were allowed to record up to three Medicare item numbers where appropriate, rather than be limited to one item number as had been the case prior to 2005-06.

- In the 'other treatments' section for each problem managed, GPs were asked to tick the 'practice nurse' box if the treatment recorded was provided by the PN rather than by the GP. If the box was not ticked it was assumed the GP gave the treatment.
- The survey form allows GPs to record up to two other treatments for each problem managed at the encounter (i.e. up to eight per encounter). Other treatments include all clinical and procedural treatments provided at the encounters. These groups are defined in Appendix 4, Tables A4.4 and A4.5.

Over the years, new PN item numbers were added and some items were broadened, to cover work done by AHWs. In January 2012, the Australian Government significantly altered the payment structure for practice nurse and AHW activities in general practice, such that the range of claimable MBS item numbers was reduced and the Practice Nurse Incentive Program (PNIP) introduced. Most of the MBS PN/AHW items were removed and the funds redirected into a single payment to eligible general practices.<sup>57</sup> The PNIP supports practice nurses to continue to deliver services such as immunisations, pap smears and wound management, previously funded under the Medicare Benefits Schedule (MBS), as well as a broad range of additional activities that were not supported under the MBS.

To be eligible for the PNIP, the general practice must be accredited against the Royal Australian College of General Practitioners Standards for general practice. The maximum incentive payment amount a practice can receive under PNIP is \$125,000 a year, and a rural loading of up to 50% applies for eligible practices. As at May 2013 there were 3,978 practices participating in the PNIP.

The following section investigates: the proportion of encounters involving the PN/AHW; the proportion of encounters claimable with a Medicare item number; the distribution of the PN/AHW items recorded; treatments provided by PNs/AHWs in association with the GP-encounters; the problems for which these treatments were provided.

These results do not include PN/AHW activities undertaken during the GP's BEACH recording period that were not associated with the recorded encounter. Such activities could include Medicare-claimable activities (for example, chronic disease management) provided under instruction from the GP but not at the time of the encounter recorded in BEACH, or provision of other services not claimable from Medicare (for example, dietary advice on a one-to-one basis, or in a group situation).

### Overview of practice nurse/Aboriginal health worker activity

Encounters involving a PN/AHW as a proportion of all encounters almost doubled from 4.2% in 2005-06 to peak at 9.0% in 2009-10, then significantly decreased to 7.4% in 2011-12, and remained steady in 2012-13 (Table 10.5).

The proportion of problems managed with PN/AHW at GP-patient encounters also increased significantly from 2.8% in 2005-06 to peak at 6.1% in 2009-10, with no statistically significant change by 2012-13 (5.0%).

In 2005-06, GPs recorded one or more PN/AHW MBS item numbers at 39.2% of encounters with recorded PN/AHW activity. By 2009-10 this proportion had risen to 45.5%. In 2011-12, a data year that included 3 months of the new 2012 PNIP, GPs recorded a PN/AHW item at 27.4% of encounters involving a PN/AHW. In 2013, only 5.0% of encounters in which a PN/AHW was involved were claimable from Medicare (Table 10.5).

### **Distribution of PN/AHW item numbers claimed at encounters**

The number of PN/AHW items claimed per 100 GP-patient encounters significantly increased from 1.7 items in 2005-06 to peak at 4.2 in 2009-10; significantly decreased to 3.2 in 2010-11, further to 2.0 per 100 in 2011-12; and again to 0.3% in 2012-13 under the new funding arrangements (Table 10.6).

The removal of many PN/AHW item numbers in early 2012, meant that in the 2012-13 BEACH year, the distribution of claimed item numbers changed dramatically. Claims for PN/AHW services to a person with chronic disease leapt from 3.6% of all recorded PN/AHW items to 91.8% and provision of a health assessment for a patient who is receiving, or has received, their 4-years-old immunisation by a PN or AHW, rose from 0.2% of all recorded PN/AHW items recorded, to 4.7% in 2012-13.

### **Treatments provided by practice nurses and Aboriginal health workers**

The rate at which procedures (including tests) were undertaken by PNs/AHWs in association with the recorded GP-patient encounters, more than doubled from 4.0 per 100 encounters in 2005-06 to 9.2 per 100 in 2009-10, though it decreased in 2011-12 to 7.2 per 100 encounters, and remained steady in 2012-13. PNs/AHWs also took over an increasing proportion of the procedural work associated with the GP-patient encounters from 22.7% in 2005-06 to 38.0% in 2010-11, with no statistical change thereafter.

While their provision of clinical treatments (such as advice and health education) remained infrequent at GP-patient encounters, there was a steady increase over the study period, from 0.2 clinical treatments per 100 encounters in 2005-06 to 1.1 per 100 in 2012-13. Further, nurses did an increasing (but small) proportion of the clinical treatments recorded at encounters, rising from 0.7% in 2005-06 to 3.1% in 2012-13. Overall in 2012-13, PNs/AHWs provided 14.4% of all 'other treatments' recorded at the encounters, a significantly greater proportion than in 2005-06 (9.0%) (Table 10.7).

## Individual treatments

Through all years, where the PN/AHW provided a treatment associated with a GP-patient encounter, only one action was usually recorded. However, there was a small (statistically significant) increase in the number of treatments provided from 107.4 per 100 PN/AHW involved encounters in 2005-06 to 113.2 per 100 in 2012-13 (Table 10.8).

**Procedures:** Though the MBS item number for PN/AHW provision of injections was removed in early 2012, in the 2012-13 BEACH year, the rate at which PNs/AHWs provided local injections/infiltration at GP encounters (33.0 per 100 PN/AHW involved encounters) remained close to the 2011-12 rate (35.5 per 100). However, both the 2011-12 and 2012-13 rates were significantly lower than the peak in 2009-10 (50.3 per 100).

Check-ups by PNs/AHWs continued to increase. In 2012-13, check-ups were conducted at a rate of 9.2 per 100 GP-patient encounters in which the PN/AHW actions were recorded. International normalised ratio (INR) blood testing frequency more than tripled, from 1.8 per 100 practice nurse encounters in 2006-07 to 7.4 per 100 in 2012-13, but the results for each of the last three years did not differ, suggesting a levelling out of the frequency of INR testing by PNs/AHW associated with GP-patient encounters.

**Clinical treatments:** PN/AHW carried out administrative procedures (excluding sickness certificates) at an ever increasing rate, rising from 0.7 per 100 PN/AHW involved encounter in 2005-06, to 5.8 per 100 in 2012-13, an increase of 61% on the 2011-12 result, of 3.6 per 100 PN/AHW involved encounters. Increases also occurred in their provision of advice/education about medication and consulting with primary care providers (Table 10.8).

## Problems managed with practice nurse or Aboriginal health worker involvement at GP-patient encounters

Changes in the problems for which PNs/AHWs were involved in management are shown in Table 10.9 and largely reflect the changes in the activities undertaken. There were significant increases in the rate at which they were involved in management of check-ups, diabetes, atrial fibrillation/flutter and preventive procedures with high-risk patients (reflecting the increasing rate of INRs, particularly in the last four years). Some of these increases may well have been stimulated by the introduction of MBS item 10997 for services provided to a person with a chronic disease in 2007-08. The involvement with problems labelled as 'administrative procedure' increased, particularly in 2011-12 and 2012-13. Their involvement in the management of chronic skin ulcers (including varicose ulcer) took up a smaller proportion of their workload associated with GP-patient encounters.

**Table 10.5: Summary of PN and AHW involvement at encounter, and claims made, 2005–06 to 2012–13**

Variable	Number										(a)
	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	↕	↕	
Total encounters	101,993	91,805	95,898	96,688	101,349	95,839	99,030	98,564	..	..	↕
Encounters involving PN or AHW	4,295	4,769	5,791	6,183	9,154	7,625	7,293	7,318	..	..	↕
Encounters at which PN activity described	4,013	4,710	5,712	6,052	8,999	7,432	7,210	7,234	..	..	↕
Encounters with PN item number but activity not described	282	59	79	131	155	195	82	84	..	..	↕
Encounters at which one or more MBS PN item numbers were recorded as claimable	1,683	1,823	2,060	2,416	4,161	3,068	1,997	287	..	..	↕
Total problems managed	149,088	136,333	145,078	149,462	155,373	146,141	152,286	152,517	..	..	↕
Problems managed with PN involvement	4,111	4,922	5,909	6,281	9,542	7,826	7,554	7,607	..	..	↕
						<b>Per cent (95% CI)</b>					
Encounters involving the PN/AHW as a proportion of total encounters	4.2 (3.7–4.7)	5.2 (4.6–5.8)	6.0 (5.5–6.6)	6.4 (5.8–7.0)	9.0 (8.2–9.9)	8.0 (7.3–8.7)	7.4 (7.6–8.0)	7.4 (6.8–8.0)	↕	↕	↕
Problems involving the PN/AHW as a proportion of total problems	2.8 (2.4–3.1)	3.6 (3.2–4.1)	4.1 (3.7–4.5)	4.2 (3.8–4.6)	6.1 (5.6–6.7)	5.4 (4.9–5.8)	5.0 (4.5–5.4)	5.0 (4.6–5.4)	–	–	–
PN/AHW claimable encounters as a proportion of total encounters	1.7 (1.4–1.9)	2.0 (1.7–2.3)	2.1 (1.9–2.4)	2.5 (2.2–2.8)	4.1 (3.6–4.1)	3.2 (2.8–3.6)	2.0 (1.7–2.3)	0.3 (0.1–0.5)	↕	↕	↕
Proportion of PN/AHW involved encounters for which one or more MBS PN item numbers were recorded	39.2 (34.7–43.6)	38.2 (34.0–42.4)	35.6 (32.4–38.8)	39.1 (35.9–42.3)	45.5 (42.1–48.8)	40.2 (36.9–43.6)	27.4 (24.3–30.4)	3.9 (1.7–6.1)	↕	↕	↕

(a) The direction and type of change from 2005–06 to 2012–13 is indicated for each result: ↕ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2005–06. Note: PN/AHW – practice nurse or Aboriginal health worker; CI – confidence interval. Some of these results may differ from those previously published, because these data were re-analysed for all years to include in the count of total practice nurse/Aboriginal health worker activity those encounters at which an item number was recorded but no practice nurse activity was described.

Table 10.6: Distribution of PN/AHW item numbers recorded at encounter, 2005–06 to 2012–13

Medicare item number	Short descriptor	Per cent of total (95% CI)										(a)
		2005–06 (n = 1,696)	2006–07 (n = 1,835)	2007–08 (n = 2,073)	2008–09 (n = 2,438)	2009–10 (n = 4,215)	2010–11 (n = 3,018)	2011–12 (n = 2,028)	2012–13 (n = 287)			
10997	Service to a person with a chronic disease by a PN or registered AHW	N/A	N/A	0.7 (0.2–1.2)	1.9 (0.9–2.9)	3.0 (1.7–4.2)	3.6 (2.5–4.6)	3.6 (2.5–4.6)	91.8 (85.8–97.7)	↑		
00711/10986	Health assessment of four-years-old who has had/is having four-year-old immunisation, by PN/AHW	N/A	N/A	N/A	0.1 (0.0–0.2)	0.3 (0.1–0.5)	0.2 (0.0–0.4)	0.2 (0.0–0.4)	4.7 (0.1–9.4)	↑		
10987	Follow up by PN or AHW of Indigenous person who had health assessment	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.5 (0.3–6.6)	—		
10988	Immunisation provided by AHW	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1 (0.9–0.2)	—		
10993	Immunisation by PN	69.5 (63.8–75.3)	66.8 (61.5–72.2)	64.1 (59.6–68.6)	63.5 (59.0–68.1)	74.9 (72.0–77.7)	67.0 (63.1–70.9)	55.1 (50.2–59.9)	N/A	—		
10994 <sup>(c)</sup>	Cervical smear and preventive checks	N/A	0.2 (0.0–0.5)	0.2 (0.0–0.4)	0.7 (0.1–1.2)	0.4 (0.0–0.7)	0.6 (0.1–1.1)	0.3 (0.0–0.7)	N/A	—		
10995	Cervical smear and preventive checks – women 20–69 years, no smear in previous 4 years	N/A	0.1 (0.0–0.2)	0.1 (0.0–0.2)	0.4 (0.0–0.9)	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.0)	0	N/A	—		
10998	Cervical smear	0	0.1 (0.0–0.3)	0.3 (0.2–0.5)	0.1 (0.0–0.2)	0.1 (0.0–0.1)	0.4 (0.0–0.8)	0.1 (0.0–0.3)	N/A	—		
10999	Cervical smear – women 20–69 years, no smear in previous 4 years	0.5 (0.0–0.9)	0.2 (0.0–0.4)	0.3 (0.0–0.8)	0	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.0)	0.2 (0.0–0.5)	N/A	—		
10996	Wound treatment (other than normal aftercare)	30.0 (24.3–35.7)	32.6 (27.2–40.0)	34.4 (30.0–38.8)	33.3 (29.1–37.5)	21.3 (18.8–23.8)	28.1 (24.6–31.7)	33.3 (29.1–37.5)	N/A	—		
<b>Total PN/AHW item numbers – rate per 100 encounters</b>		<b>1.7 (1.4–2.0)</b>	<b>2.0 (1.7–2.3)</b>	<b>2.2 (1.9–2.4)</b>	<b>2.5 (2.2–2.9)</b>	<b>4.2 (3.7–4.7)</b>	<b>3.2 (2.8–3.6)</b>	<b>2.0 (1.8–2.3)</b>	<b>0.3 (0.1–0.5)</b>	<b>§</b>		

(a) The direction and type of change from 2005–06 to 2012–13 is indicated for each result: ↑↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2005–06; — indicates there was no significant change in 2012–13 compared with 2005–06.

(b) Results are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

Note: PN/AHW – practice nurse or Aboriginal health worker; N/A – Not applicable; there were no occurrences of other available item numbers (not listed) in any years reported in this table.



Table 10.7: Summary of treatments provided by PNs or AHWs, 2005–06 to 2012–13

Treatment	Rate per 100 encounters (95% CI)								2012–13 (n = 98,563)	↑ <sup>(a)</sup> ↓
	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,563)		
Procedural treatments <sup>(b)</sup>	4.0 (3.5–4.5)	5.2 (4.6–5.8)	6.1 (5.5–6.7)	6.4 (5.8–7.1)	9.2 (8.3–10.2)	8.0 (7.3–8.8)	7.2 (6.6–7.9)	7.2 (6.5–7.8)	↑	
Clinical treatments	0.2 (0.1–0.3)	0.5 (0.3–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.7 (0.5–0.9)	0.7 (0.6–0.9)	0.9 (0.7–1.1)	1.1 (1.0–1.3)	↑	
<b>All other treatments</b>	<b>4.2 (3.7–4.8)</b>	<b>5.7 (4.9–6.4)</b>	<b>6.5 (5.9–7.2)</b>	<b>6.9 (6.2–7.6)</b>	<b>9.9 (8.9–10.9)</b>	<b>8.7 (7.9–9.6)</b>	<b>8.1 (7.4–8.9)</b>	<b>8.3 (7.6–9.0)</b>	↑	
<b>Per cent of each activity that was performed/assisted by PN or AHW (95% CI)</b>										
Procedural treatments <sup>(b)</sup>	22.7 (20.2–25.2)	28.1 (25.5–30.8)	29.7 (27.5–32.0)	30.4 (28.0–32.9)	39.6 (36.5–42.6)	38.0 (35.4–40.5)	35.4 (32.9–37.8)	34.0 (31.6–36.4)	↑	
Clinical treatments	0.7 (0.5–0.9)	1.5 (0.9–2.2)	1.3 (1.0–1.6)	1.4 (1.1–1.6)	2.0 (1.4–2.5)	2.0 (1.6–2.5)	2.4 (1.8–3.0)	3.1 (2.6–3.7)	↑	
<b>All other treatments</b>	<b>9.0 (7.9–10.1)</b>	<b>11.8 (10.4–13.2)</b>	<b>11.9 (10.8–13.0)</b>	<b>12.5 (11.3–13.7)</b>	<b>17.0 (15.4–18.7)</b>	<b>15.4 (14.0–16.9)</b>	<b>14.1 (12.9–15.4)</b>	<b>14.4 (13.2–15.6)</b>	↑	

(a) The direction and type of change from 2005–06 to 2012–13 is indicated for each result: ↑↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2005–06.

(b) PN/AHW – practice nurse or Aboriginal health worker; procedural treatments here include all injections for immunisations/vaccinations. These are not included in the summary of the content of encounter in Table 5.1, summary of management in Table 8.1 or in the analyses of other treatments in Chapter 10, because the immunisation/vaccination is already counted as a prescription or GP-supplied medication.

Note: CI – confidence interval; PN/AHW – practice nurse or Aboriginal health worker.

Table 10.8: Most frequent treatments done by PNs or AHWs, 2005-06 to 2012-13

Treatment	Rate per 100 encounters where PN/AHW activity described (95% CI)										↑ <sup>(a)</sup> ↓
	2005-06 (n = 4,013)	2006-07 (n = 4,710)	2007-08 (n = 5,712)	2008-09 (n = 6,052)	2009-10 (n = 8,999)	2010-11 (n = 7,625)	2011-12 (n = 7,210)	2012-13 (n = 7,234)			
<b>Procedural treatments (including tests)</b>	<b>102.2</b> (100.1-104.3)	<b>101.3</b> (99.2-103.5)	<b>102.3</b> (100.7-104.0)	<b>102.5</b> (100.5-104.8)	<b>104.1</b> (102.4-105.9)	<b>103.5</b> (101.6-105.4)	<b>99.3</b> (96.5-102.0)	<b>95.6</b> (95.7-99.5)	↓		
Local injection/infiltration*	41.0 (36.6-45.4)	37.3 (33.0-41.6)	37.7 (34.7-40.7)	38.2 (34.9-41.6)	50.3 (47.0-53.6)	41.1 (37.7-44.5)	35.5 (32.4-38.6)	33.0 (30.2-35.7)	§		
Dressing/pressure/compression/ tamponade*	23.7 (21.3-26.2)	22.4 (19.8-24.9)	20.7 (18.7-22.8)	21.2 (19.2-23.3)	15.8 (14.2-17.5)	19.5 (17.8-21.2)	20.0 (18.2-21.8)	18.3 (16.4-20.2)	§		
Check-up – PN/AHW*	NAV	4.0 (2.3-5.6)	6.1 (4.8-7.4)	6.3 (4.0-8.6)	7.6 (4.0-11.1)	7.3 (5.2-9.5)	8.0 (6.1-9.8)	9.2 (7.6-10.3)	↑		
INR test*	NAV	1.8 (1.0-2.6)	4.9 (3.6-6.2)	6.4 (4.9-7.9)	4.5 (3.5-5.5)	6.8 (5.5-8.1)	6.6 (5.4-7.8)	7.4 (5.9-8.5)	↑		
Incision/drainage/flushing/aspiration/ removal body fluid*	8.1 (6.2-10.0)	8.8 (6.7-11.0)	6.8 (5.6-7.9)	7.4 (6.0-8.8)	6.8 (5.4-8.1)	5.7 (4.7-6.7)	5.5 (4.2-6.7)	6.0 (4.5-7.2)	—		
Repair/fixation – suture/cast/prosthetic device (apply/remove)*	6.4 (5.0-7.8)	6.0 (5.0-7.0)	5.0 (4.2-5.7)	4.3 (3.6-5.0)	4.0 (3.3-4.6)	4.4 (3.6-5.1)	4.0 (3.3-4.6)	5.0 (4.2-5.6)	—		
Electrical tracings*	5.4 (4.1-6.7)	4.5 (3.7-5.2)	5.2 (4.3-6.1)	4.4 (3.6-5.2)	3.6 (3.1-4.2)	4.3 (3.7-5.0)	5.2 (4.5-6.0)	4.7 (3.9-5.2)	—		
Excision/removal tissue/biopsy/ destruction/debridement/cauterisation*	7.4 (5.6-9.2)	5.7 (4.2-7.2)	4.9 (3.8-5.9)	4.3 (3.4-5.2)	2.9 (2.2-3.6)	3.2 (2.5-3.9)	3.7 (2.8-4.5)	3.6 (2.8-4.3)	↓		
Physical function test*	3.9 (2.6-5.3)	4.3 (2.8-5.7)	3.5 (2.3-4.7)	2.7 (2.0-3.4)	2.9 (2.1-3.6)	2.6 (2.0-3.3)	2.8 (2.1-3.5)	2.6 (2.0-3.1)	—		
Urine test*	1.4 (0.8-2.0)	1.4 (0.8-2.0)	2.1 (1.3-3.0)	1.7 (1.0-2.4)	1.3 (0.8-1.8)	2.3 (1.6-3.0)	2.1 (1.5-2.8)	2.4 (1.6-3.0)	—		
Glucose test*	0.7 (0.3-1.1)	1.0 (0.4-1.5)	1.0 (0.7-1.3)	1.0 (0.6-1.3)	0.6 (0.4-0.8)	1.5 (0.7-2.3)	1.2 (1.5-2.8)	0.9 (0.4-1.3)	—		
Other diagnostic procedures*	0	0.1 (0.0-0.2)	0.1 (0.0-0.2)	0.5 (0.2-0.8)	0.7 (0.4-1.0)	1.3 (0.2-2.3)	0.8 (0.4-1.2)	0.6 (0.2-0.7)	↑		

(continued)

Table 10.8 (continued): Most frequent treatments done by PNs or AHWs, 2005–06 to 2012–13

Treatment	Rate per 100 encounters where PN/AHW activity described (95% CI)										2012–13 (n = 7,234)	↑ ↕ ↓ <sup>(a)</sup>
	2005–06 (n = 4,013)	2006–07 (n = 4,710)	2007–08 (n = 5,712)	2008–09 (n = 6,052)	2009–10 (n = 8,999)	2010–11 (n = 7,625)	2011–12 (n = 7,210)	2012–13 (n = 7,234)	2012–13 (n = 7,234)	2012–13 (n = 7,234)		
Pap smear*	0.3 (0.0–0.6)	0.6 (0.2–0.9)	0.5 (0.3–0.8)	0.7 (0.1–1.3)	0.7 (0.4–0.9)	0.9 (0.5–1.3)	0.6 (0.3–0.9)	0.5 (0.2–0.7)	0.6 (0.3–0.9)	0.6 (0.2–1.0)	0.5 (0.2–0.7)	—
Physical medicine/rehabilitation – all*	0.9 (0.4–1.5)	0.6 (0.2–0.9)	0.6 (0.2–1.1)	0.4 (0.2–0.6)	0.9 (0.5–1.2)	0.9 (0.5–1.2)	0.3 (0.1–0.4)	0.6 (0.2–1.0)	0.3 (0.1–0.4)	0.6 (0.2–1.0)	0.6 (0.2–1.0)	—
Pregnancy test*	0.3 (0.1–0.6)	0.3 (0.1–0.5)	0.5 (0.3–0.8)	0.5 (0.3–0.7)	0.2 (0.1–0.4)	0.4 (0.2–0.7)	0.7 (0.4–0.9)	0.4 (0.2–0.6)	0.7 (0.4–0.9)	0.4 (0.2–0.6)	0.4 (0.2–0.6)	—
Other preventive procedures/high-risk medication*	0.1 (0.0–0.2)	0.2 (0.1–0.4)	0.1 (0.0–0.2)	0.5 (0.3–0.8)	0.5 (0.3–0.7)	0.4 (0.2–0.7)	0.3 (0.1–0.5)	0.2 (0.1–0.3)	0.3 (0.1–0.5)	0.2 (0.1–0.3)	0.2 (0.1–0.3)	—
<b>Clinical treatments</b>	<b>5.2 (3.7–6.7)</b>	<b>8.9 (5.6–12.1)</b>	<b>7.7 (6.9–9.2)</b>	<b>7.4 (6.0–8.8)</b>	<b>7.9 (5.9–9.9)</b>	<b>9.3 (7.6–11.1)</b>	<b>12.2 (9.6–14.8)</b>	<b>15.6 (13.3–17.9)</b>	<b>12.2 (9.6–14.8)</b>	<b>15.6 (13.3–17.9)</b>	<b>15.6 (13.3–17.9)</b>	↑
Other administrative procedure/document (excl. sickness certificate)*	0.7 (0.4–1.0)	1.1 (0.7–1.6)	2.0 (1.4–2.6)	2.3 (1.6–3.0)	2.3 (1.6–3.0)	2.2 (1.6–2.8)	3.6 (2.8–4.4)	5.8 (4.6–7.0)	3.6 (2.8–4.4)	5.8 (4.6–7.0)	5.8 (4.6–7.0)	↑
Counselling/advice – nutrition/weight*	0.6 (0.2–0.9)	1.2 (0.2–2.1)	0.5 (0.1–0.9)	0.7 (0.4–1.1)	0.6 (0.3–0.8)	0.7 (0.4–1.0)	0.4 (0.1–0.7)	1.4 (0.8–2.0)	0.4 (0.1–0.7)	1.4 (0.8–2.0)	1.4 (0.8–2.0)	—
Advice/education – medication*	0.2 (0.0–0.3)	0.2 (0.0–0.3)	0.4 (0.2–0.7)	0.2 (0.0–0.4)	0.4 (0.2–0.6)	0.5 (0.3–0.8)	0.7 (0.4–1.1)	1.3 (0.9–1.7)	0.7 (0.4–1.1)	1.3 (0.9–1.7)	1.3 (0.9–1.7)	↑
Advice – treatment*	0.2 (0.1–0.4)	0.9 (0.5–1.3)	0.6 (0.4–0.8)	0.9 (0.5–1.3)	0.4 (0.2–0.6)	0.5 (0.3–0.6)	0.9 (0.6–1.2)	1.2 (0.7–1.7)	0.9 (0.6–1.2)	1.2 (0.7–1.7)	1.2 (0.7–1.7)	—
Advice/education NEC*	0.9 (0.4–1.3)	1.5 (0.6–2.4)	1.4 (0.8–2.1)	0.8 (0.5–1.1)	1.2 (0.6–1.9)	1.0 (0.5–1.4)	1.1 (0.7–1.5)	1.2 (0.7–1.6)	1.1 (0.7–1.5)	1.2 (0.7–1.6)	1.2 (0.7–1.6)	—
Counselling – problem*	0.9 (0.2–1.5)	0.8 (0.3–1.3)	0.6 (0.3–0.8)	0.5 (0.2–0.7)	0.6 (0.3–0.9)	1.2 (0.6–1.8)	1.8 (1.1–3.4)	1.1 (0.7–1.5)	1.8 (1.1–3.4)	1.1 (0.7–1.5)	1.1 (0.7–1.5)	—
Consultation with primary care provider*	0	0.2 (0.0–0.3)	0.4 (0.2–0.7)	0.1 (0.0–0.2)	0.4 (0.2–0.6)	0.7 (0.4–1.0)	0.7 (0.1–1.2)	1.0 (0.7–1.4)	0.7 (0.1–1.2)	1.0 (0.7–1.4)	1.0 (0.7–1.4)	↑
Counselling – lifestyle*	N/A	0.2 (0.0–0.4)	0.1 (0.0–0.3)	0.1 (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.0–0.2)	0.4 (0.1–0.7)	0.5 (0.2–0.7)	0.4 (0.1–0.7)	0.5 (0.2–0.7)	0.5 (0.2–0.7)	—
<b>Total PN/AHW activities at GP–patient encounters involving a PN/AHW</b>	<b>107.4 (105.0–108.9)</b>	<b>110.2 (107.7–112.8)</b>	<b>110.0 (108.4–111.6)</b>	<b>109.9 (108.1–111.6)</b>	<b>112.0 (110.3–113.7)</b>	<b>112.8 (110.9–114.7)</b>	<b>110.5 (110.1–112.9)</b>	<b>113.2 (111.7–114.7)</b>	<b>110.5 (110.1–112.9)</b>	<b>113.2 (111.7–114.7)</b>	<b>113.2 (111.7–114.7)</b>	↑

**Table 10.9: The most common problems managed with involvement of PN or AHW, 2005–06 to 2012–13**

Problem managed	Rate per 100 encounters where PN/AHW activity described (95% CI)										<sup>(a)</sup> ↕
	2005–06 (n = 4,013)	2006–07 (n = 4,710)	2007–08 (n = 5,712)	2008–09 (n = 6,052)	2009–10 (n = 8,999)	2010–11 (n = 7,625)	2011–12 (n = 7,210)	2012–13 (n = 7,234)			
Immunisation/vaccination – all*	30.9 (26.9–34.9)	30.8 (26.5–35.0)	29.5 (26.7–32.2)	29.5 (26.2–32.7)	40.6 (37.3–43.9)	30.7 (27.3–34.0)	25.5 (22.7–28.3)	23.1 (20.4–25.8)	§		
Check-up – all*	3.8 (2.8–4.8)	4.4 (3.4–5.4)	5.2 (4.0–6.4)	5.1 (3.9–6.2)	5.5 (4.6–6.3)	5.0 (4.1–5.9)	5.8 (4.9–6.8)	6.9 (5.9–7.8)	↑		
Laceration/cut	6.4 (5.0–7.8)	6.2 (5.2–7.2)	6.0 (5.0–7.0)	6.4 (5.5–7.3)	4.5 (3.8–5.1)	6.0 (5.1–6.8)	5.9 (5.1–6.7)	6.3 (5.4–7.2)	–		
Diabetes – all*	1.5 (0.8–2.1)	2.0 (1.4–2.6)	2.9 (2.2–3.5)	3.1 (2.4–2.7)	2.0 (1.5–2.4)	3.5 (2.6–4.3)	3.9 (3.2–4.7)	4.6 (3.8–5.4)	↑		
Chronic ulcer skin (including varicose ulcer)	7.1 (5.9–8.3)	6.5 (5.3–7.7)	4.8 (3.9–5.7)	5.9 (4.9–6.9)	4.0 (3.3–4.8)	4.4 (3.7–5.1)	4.9 (4.1–5.6)	4.2 (3.5–4.9)	↔		
Atrial fibrillation/flutter	1.2 (0.6–1.7)	1.4 (0.8–2.0)	2.8 (2.0–3.6)	3.4 (2.6–4.3)	2.5 (1.8–3.2)	3.6 (2.8–4.4)	3.6 (2.5–4.6)	4.2 (3.2–5.1)	↑		
Excessive ear wax	2.2 (1.6–2.9)	3.0 (2.4–3.6)	2.8 (2.2–3.4)	2.5 (2.0–3.0)	2.0 (1.5–2.4)	2.3 (1.9–2.7)	2.3 (1.8–2.7)	2.6 (2.1–3.1)	–		
Malignant neoplasm, skin	3.2 (2.3–4.2)	2.9 (2.1–3.8)	2.6 (1.8–3.3)	2.6 (1.9–3.3)	2.1 (1.7–2.6)	1.8 (1.4–2.2)	2.2 (1.7–2.8)	2.3 (2.8–2.8)	–		
Blood test – all*	0.6 (0.2–0.9)	1.1 (0.4–1.8)	1.3 (0.9–1.7)	1.4 (0.7–2.1)	1.5 (0.8–2.2)	1.6 (1.1–2.1)	1.9 (1.3–2.4)	2.0 (1.0–3.0)	↑		
Administrative procedure – all*	0 (0.0–0.4)	0.2 (0.0–0.4)	0.5 (0.2–0.8)	0.5 (0.3–0.7)	0.8 (0.4–0.2)	0.7 (0.4–1.1)	1.3 (0.7–1.8)	1.7 (1.1–2.2)	↑		
Vitamin/nutritional deficiency	0.9 (0.5–1.3)	0.5 (0.3–0.8)	1.0 (0.6–1.4)	1.6 (1.2–2.1)	1.1 (0.1–2.1)	1.2 (0.9–1.6)	1.6 (1.2–2.0)	1.5 (1.2–1.9)	–		
Repair/fixation – suture/cast/prosthetic device (apply/remove)*	1.3 (0.7–1.9)	1.4 (1.0–1.9)	1.4 (1.0–1.7)	1.1 (0.8–1.5)	1.0 (0.7–1.2)	1.2 (0.9–1.6)	0.9 (0.7–1.2)	1.5 (1.2–1.8)	–		
Hypertension*	1.1 (0.6–1.5)	1.6 (1.0–2.2)	1.8 (1.2–2.3)	1.8 (1.2–2.4)	1.8 (1.2–2.4)	1.5 (1.0–1.9)	2.3 (1.4–3.1)	1.4 (1.0–1.8)	–		
Asthma	1.5 (1.0–2.0)	2.3 (1.6–3.0)	1.2 (0.9–1.6)	1.1 (0.7–1.5)	0.9 (0.6–1.1)	1.2 (0.8–1.5)	1.1 (0.8–1.5)	1.3 (1.0–1.7)	–		

(continued)

**Table 10.9 (continued): The most common problems managed with involvement of PN or AHW, 2005–06 to 2012–13**

Problem managed	Rate per 100 encounters where PN/AHW activity described (95% CI)										<sup>(a)</sup> ↕ ↗
	2005–06 (n = 4,013)	2006–07 (n = 4,710)	2007–08 (n = 5,712)	2008–09 (n = 6,052)	2009–10 (n = 8,999)	2010–11 (n = 7,625)	2011–12 (n = 7,210)	2012–13 (n = 7,234)			
Skin symptom/complaint, other	1.2 (0.7–1.7)	1.2 (0.8–1.7)	1.0 (0.7–1.3)	0.9 (0.6–1.2)	0.9 (0.7–1.2)	0.8 (0.5–1.1)	0.8 (0.6–1.1)	1.1 (0.8–1.5)	—		
Pregnancy*	0.6 (0.1–1.1)	0.8 (0.3–1.2)	0.6 (0.2–0.9)	0.8 (0.4–1.2)	1.0 (0.8–1.3)	0.9 (0.6–1.3)	0.8 (0.4–1.1)	1.0 (0.5–1.5)	—		
Skin infection, other	0.4 (0.2–0.6)	1.7 (1.2–2.2)	1.6 (1.0–2.1)	1.9 (1.5–1.3)	1.8 (1.3–2.2)	1.6 (1.2–2.0)	1.7 (1.3–2.1)	1.1 (0.8–1.3)	§		
Other preventive procedures/high-risk medication*	0.2 (0.0–0.3)	0.4 (0.1–0.6)	0.8 (0.4–1.2)	0.4 (0.2–0.7)	0.8 (0.5–1.1)	1.0 (0.6–1.4)	1.0 (0.6–1.3)	0.8 (0.4–1.1)	↗		
Contraception, other	1.1 (0.6–1.6)	0.5 (0.3–0.8)	0.9 (0.6–1.2)	0.9 (0.6–1.2)	0.8 (0.5–0.9)	0.7 (0.5–1.1)	0.9 (0.7–1.2)	0.8 (0.6–1.1)	—		
Urinary tract infection*	0.3 (0.1–0.6)	0.5 (0.2–0.8)	0.7 (0.4–0.9)	0.5 (0.3–0.8)	0.5 (0.3–0.7)	1.1 (0.8–1.5)	0.9 (0.5–1.3)	0.8 (0.5–1.0)	—		
Boil/carbuncle	0.6 (0.3–0.8)	0.8 (0.5–1.1)	0.9 (0.5–1.2)	1.1 (0.7–1.4)	0.5 (0.3–0.7)	1.0 (0.7–1.3)	0.8 (0.5–1.1)	0.7 (0.4–0.1)	—		
Burns/scalds	0.9 (0.5–1.3)	1.2 (0.8–1.7)	1.1 (0.8–1.4)	0.9 (0.6–1.2)	0.6 (0.4–0.8)	0.9 (0.6–1.3)	0.8 (0.5–1.1)	0.8 (0.5–1.1)	—		
Abrasion/scratch/blister	1.2 (0.7–1.6)	0.7 (0.4–1.0)	1.2 (0.6–1.7)	0.8 (0.5–1.0)	0.6 (0.4–0.8)	0.8 (0.5–1.0)	0.7 (0.5–1.0)	0.7 (0.4–1.0)	—		
Anaemia*	0.3 (0.1–0.5)	0.5 (0.3–0.8)	0.6 (0.3–0.8)	0.5 (0.3–0.6)	0.6 (0.4–0.8)	0.6 (0.4–0.8)	0.6 (0.4–0.8)	0.7 (0.5–1.0)	—		
Arthritis – all*	0.6 (0.3–0.9)	0.4 (0.1–0.7)	0.6 (0.3–0.8)	0.7 (0.4–0.9)	0.6 (0.4–0.8)	0.6 (0.4–0.9)	0.6 (0.4–0.8)	0.6 (0.4–0.8)	—		
Observation/health education/advice/diet – all*	0.4 (0.0–0.8)	0.6 (0.3–0.8)	0.6 (0.3–0.9)	0.5 (0.3–0.8)	1.1 (0.1–2.1)	0.9 (0.6–1.2)	0.8 (0.4–1.1)	0.5 (0.3–0.6)	—		
Dressing/pressure/compression/ tamponade*	1.0 (0.5–1.6)	0.3 (0.1–0.5)	0.6 (0.3–0.9)	0.7 (0.3–1.1)	0.3 (0.2–0.5)	0.6 (0.3–0.9)	0.6 (0.3–0.9)	0.5 (0.3–0.7)	—		

(continued)

**Table 10.9 (continued): The most common problems managed with involvement of PN or AHW, 2005–06 to 2012–13**

Problem managed	Rate per 100 encounters where PN/AHW activity described (95% CI)										<sup>(a)</sup> ↑ ↓
	2005–06 (n = 4,013)	2006–07 (n = 4,710)	2007–08 (n = 5,712)	2008–09 (n = 6,052)	2009–10 (n = 8,999)	2010–11 (n = 7,625)	2011–12 (n = 7,210)	2012–13 (n = 7,234)			
Complication of medical treatment	0.6 (0.3–1.0)	0.7 (0.4–1.0)	0.6 (0.3–0.8)	0.4 (0.3–0.6)	0.5 (0.3–0.7)	0.5 (0.3–0.7)	0.6 (0.4–0.9)	0.4 (0.3–0.6)	—		
Chest pain NOS	0.8 (0.4–1.1)	0.5 (0.3–0.7)	1.0 (0.7–1.2)	0.6 (0.4–0.8)	0.7 (0.5–0.9)	0.6 (0.4–0.9)	0.6 (0.4–0.8)	0.5 (0.3–0.7)	—		
Fracture*	1.1 (0.7–1.5)	1.0 (0.6–1.5)	0.8 (0.5–1.0)	0.5 (0.3–0.7)	0.3 (0.2–0.4)	0.5 (0.4–0.7)	0.5 (0.2–0.7)	0.6 (0.3–0.8)	↓		
Injury skin NEC	1.0 (0.6–1.4)	0.6 (0.3–0.9)	0.4 (0.2–0.6)	0.4 (0.2–0.6)	0.3 (0.2–0.5)	0.5 (0.2–0.7)	0.4 (0.2–0.7)	0.5 (0.2–0.7)	—		
<b>Total problems</b>	<b>102.4</b> <b>(101.7–103.2)</b>	<b>104.5</b> <b>(103.3–105.8)</b>	<b>103.4</b> <b>(102.7–104.2)</b>	<b>103.8</b> <b>(103.1–104.5)</b>	<b>106.0</b> <b>(104.8–107.3)</b>	<b>105.3</b> <b>(104.3–106.3)</b>	<b>104.8</b> <b>(103.9–105.7)</b>	<b>105.0</b> <b>(104.4–105.9)</b>	<b>↑</b>		

(a) The direction and type of change from 2005–06 to 2012–13 is indicated for each result. ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2005–06; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2005–06; — indicates there was no significant change in 2012–13 compared with 2005–06; and § indicates a noteworthy change over the period.

\* Includes multiple ICP-2 or ICPC-2 PLUS codes (see Appendix 4, Table A4.1, <doi:handle.net/2123/9366>).

Note: PN/AHW – practice nurse or Aboriginal health worker; includes only those problems managed by practice nurses or Aboriginal health workers at a rate of 1% or higher in any of the years reported. CI – confidence interval; NOS – not otherwise specified; NEC – not elsewhere classified; PN – practice nurse; AHW – Aboriginal health worker; INR – International normalised ratio.

## 10.4 Changes in work distribution between GPs and PNs/AHWs, ‘other treatment’ provision

The introduction of MBS item numbers for some PN and AHW activities in 2004 clearly influenced some of the GP activity at GP-patient encounters.

### Clinical treatments

In 2005-06, the number of clinical treatments (counselling, advice, education and so forth) recorded at BEACH encounters (counting both the GP-provided clinical activities and those provided by a PN/AHW in association with the encounter) decreased significantly (from 39.2 to 29.2 per 100 GP-patient encounters) and the rate stayed at this level in 2006-07. Suddenly it increased significantly in 2007-09 to 34.5 per 100 encounters, a level retained to date, with some minimal growth.

The PN/AHW contribution to clinical treatments associated with GP-patient encounters was very small throughout the 10 years (Table 10.10).

**Table 10.10: GPs and PNs/AHWs clinical treatments at GP-patient encounters, 2003-04 to 2012-13**

	Rate per 100 encounters (95% CI)									
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Total	36.6	39.2	29.2	29.5	34.5	34.0	35.0	35.5	37.0	36.5
GP	36.6	39.2	29.0	29.0	34.1	33.5	34.3	34.8	36.1	34.3
PN/AHW	0.0	0.0	0.2	0.5	0.5	0.5	0.7	0.7	0.9	1.1

*Note:* There was no facility to record practice nurse or Aboriginal health worker activities at the encounter prior to 2005-06. PN – practice nurse; AHW – Aboriginal health worker.

Figure 10.2 provides a picture of the changes in shared workload at encounter by GPs and PN/AHWs, since PN item numbers were first introduced.

When the drop occurred in 2005-06, we assumed that the PNs/AHWs were taking over the responsibility for some of these clinical treatments ‘lost’ from the GP-patient encounters in patient contacts that were independent of the encounter. However, if that was the case we would have expected that this role would grow – that we would see a further decrease in clinical treatments recorded at the encounters in the following years. In reality, the overall rate at which clinical treatments were recorded at GP-patient encounters bottomed out in 2005-06 and in 2006-07, then gradually crept up to reach the same level as that recorded in 2003-04. Table 10.10 demonstrates that this pattern was particularly apparent in advice/education (including about treatment and medication) and the provision of reassurance and support. In contrast, significant decreases in recorded rates of advice/education about exercise and nutrition/weight failed to return to their earlier levels. We hypothesised that in 2005-06, when the PN/AHW Medicare items were introduced, the GPs felt that some of the advice and education would be picked up outside the consultation, by a PN/AHW. Perhaps over time, they realised that this was not always the case, so returned to their earlier behaviour in providing such advice themselves. Of concern however, is the lack of such reversion in rates of provision of advice about exercise and about nutrition/weight. Hopefully these two areas are being covered by PNs and AHWs independently of the GP-patient encounters, but we have no data about their non-GP-patient encounter activities to determine if this is true.

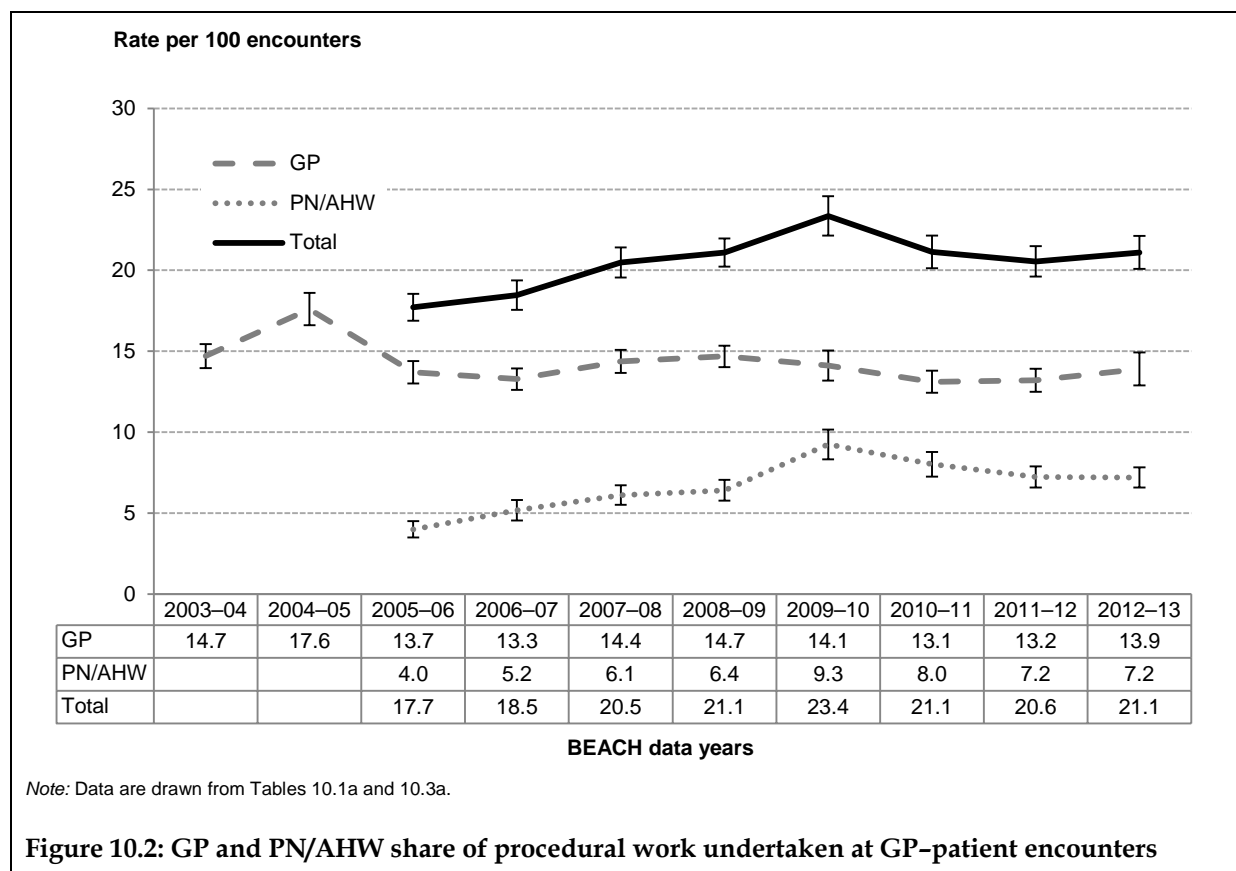
## Procedural treatments

After the introduction of PN/AHW item numbers in 2004-05, there was a significant decrease in the rate at which GPs undertook procedures (including injections for immunisations) at GP-patient encounters, from 17.6 (95% CI: 16.6-18.6) per 100 encounters, to 13.9 (95% CI: 13.2-14.6) per 100. This rate then stayed relatively steady through to 2012-13.

However, both the PN/AHWs procedural work at GP-patient encounters, and the overall procedural rate increased, PN/AHWs having taken some of the clinical load from the GP.

As shown in Figure 10.2, in 2005-06, the PN/AHWs undertook about 1 in 5 of the procedures associated with the encounter and the GP procedural load decreased accordingly. By 2012-13, the PN/AHWs were doing almost 2 in 5 of the procedures conducted in association with the encounters.

We hypothesised that the removal of many of the PN Medicare item numbers in January 2012, may lead to even greater independence of the procedural work of PNs, so that they would be less often involved in care provided in association with the GP-patient encounters. However, the data proved this hypothesis wrong – in 2012-13 they were involved just as often as they were in 2010-11 and 2011-12. Whether or not the PN/AHWs are undertaking increasing patient care provision independently of the GP-patient encounter cannot be measured from GP-patient encounter data such as BEACH. The lack of quality data available about the growing non GP-patient encounter activity of PN/AHWs is limiting our understanding of the total services provided to patients by general practices, and this limitation will grow with increasing independence on PN/AHW clinical activity.





# 11 Referrals and admissions

A referral is defined as the process by which the responsibility for part, or all, of the care of a patient is temporarily transferred to another health-care provider. GPs were instructed only to record new referrals arising at the encounter (that is, not to record continuations). For each encounter, GPs could record up to two referrals, and each referral was linked by the GP to the problem(s) for which the patient was referred. Referrals included those to medical specialists, allied health services, hospitals for admission, emergency departments, and to other services (including outpatient clinics and other GPs).

Referral data for the 10 years 2003–04 to 2012–13, are reported in two ways: as rates per 100 problems managed (Table 11.1a) and as rates per 100 encounters (Table 11.1b). In the text describing changes over time, the rates per 100 problems are reported as the primary measure, because there was a significant increase in the number of problems managed per encounter over the study period reported here.

The direction and type of change from 2003–04 to 2012–13, is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade. Significant changes in the rate per 100 encounters can be extrapolated to estimate the national increase or decrease in the measured event between 2003–04 and 2012–13. Examples of extrapolated change are given. The method used to extrapolate is described in Section 2.9.

The number of GP–patient encounters claimed through the Medicare Benefits Schedule nationally increased by 31.7% between 2003–04 (96.3 million encounters) and 2012–13 (126.8 million encounters).<sup>5,7</sup> As a result, a decreased rate of a particular ‘measured event’ per 100 encounters may occasionally yield a national increase in the estimated number of events.

More specific analyses of referrals recorded by participating GPs in the 2012–13 BEACH year can be found in the companion report *General practice activity in Australia 2012–13*.<sup>1</sup>

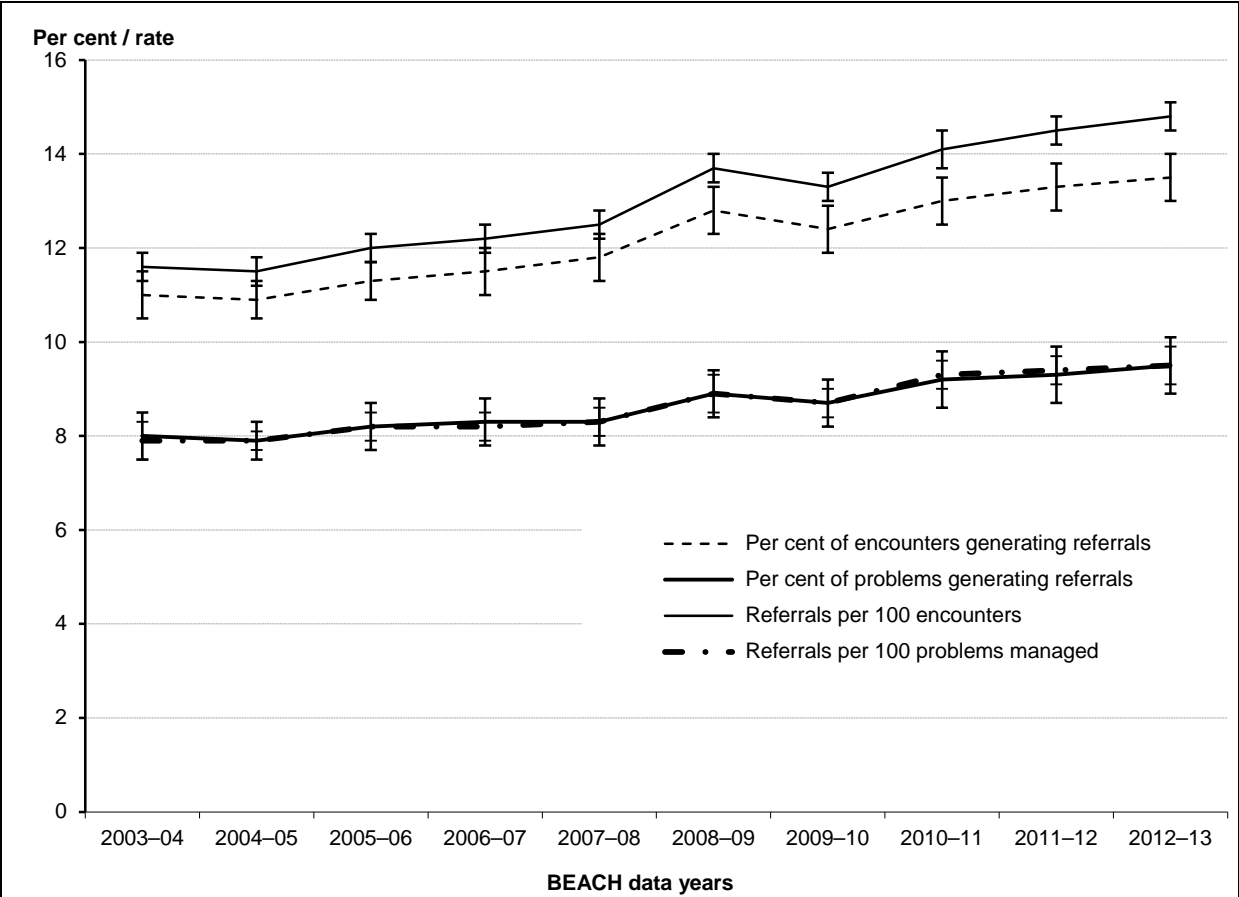
## 11.1 Results

Figure 11.1 illustrates the proportion of encounters and problems managed where referrals were made, and referral rates per 100 encounters and per 100 problems, over the decade 2003–04 to 2012–13. As described in detail below, there were significant increases in likelihoods that GP–patient encounters would involve one or more referrals and that a problem being managed at encounter would be referred. There were also significant increases in the overall rates of referrals per 100 encounters and per 100 problems managed.

The likelihood that a problem being managed at encounter would be referred increased significantly over the study period, with 8.0% of problems being referred in 2003–04 and 9.5% in 2012–13. There was a significant increase in the overall rate of referrals, from 7.9 per 100 problems managed in 2003–04 to 9.5 per 100 in 2012–13 (Table 11.1a). This increase was largely due to an increasing referral rate to allied health professionals, rather than an increase to medical specialists, which remained stable. However, there were marginally significant increases in the rate of referrals per 100 problems to orthopaedic surgeons, cardiologists and gastroenterologists; and marginal decreases in referrals to surgeons and ophthalmologists.

The rate of referral to allied health services per 100 problems managed increased from 1.8 in 2003–04 to 3.0 per 100 in 2012–13. There were significant increases in the rates of referral to psychologists and podiatrists/chiropracists per 100 problems managed, and a marginal increase in referral rates to dietitians/nutritionists. There was a marginal decrease in the rate of referral/admission to hospitals over the decade (Table 11.1a).

Table 11.1b also shows that over time there was an increased likelihood that GP–patient encounters would involve one or more referrals (11.0% involving a referral in 2003–04 and 13.5% in 2012–13). Overall, referrals increased significantly, from 11.6 per 100 encounters in 2003–04 to 14.8 per 100 in 2012–13. Extrapolation of this change suggests there were about 7.6 million more GP referrals nationally in 2012–13 than in 2003–04. These included about 3.7 million more referrals to medical specialists and about 3.5 million more to allied health services. Of these 3.5 million additional allied health referrals, 1.1 million were to psychologists, probably largely as a result of the government’s introduction of the Better Outcomes<sup>58</sup> and later the Better Access<sup>59</sup> mental health programs. There were also about 560,000 more referrals to physiotherapists, which may also be due to government policy, such as the introduction of MBS item numbers for a limited number of physiotherapy services for selected patients referred by a GP.<sup>54</sup>



Note: Data are drawn from Tables 11.1a and 11.1b.

**Figure 11.1: Proportion of encounters and problems managed where referrals were made, and referral rates per 100 encounters and per 100 problems, 2003–04 to 2012–13 (95% confidence intervals)**

Table 11.1a: The most frequent referrals (rate per 100 problems), 2003-04 to 2012-13

Referral	Rate per 100 problems (95% CI)											↑ <sup>(a)</sup> ↓
	2003-04 (n = 144,674)	2004-05 (n = 137,330)	2005-06 (n = 149,088)	2006-07 (n = 136,333)	2007-08 (n = 145,078)	2008-09 (n = 149,462)	2009-10 (n = 155,373)	2010-11 (n = 146,141)	2011-12 (n = 152,286)	2012-13 (n = 152,517)		
At least one referral	8.0 (7.6-8.3)	7.9 (7.7-8.2)	8.2 (7.9-8.5)	8.3 (8.0-8.6)	8.3 (8.0-8.6)	8.9 (8.5-9.2)	8.7 (8.4-9.0)	9.2 (8.9-9.5)	9.3 (9.0-9.7)	9.5 (9.1-9.8)	↑	
Medical specialist	5.4 (5.1-5.6)	5.3 (5.1-5.5)	5.6 (5.4-5.8)	5.4 (5.2-5.7)	5.3 (5.1-5.5)	5.8 (5.6-6.0)	5.5 (5.3-5.7)	5.6 (5.4-5.9)	5.6 (5.3-5.8)	5.7 (5.5-6.0)	—	
Orthopaedic surgeon	0.5 (0.4-0.5)	0.5 (0.4-0.5)	0.5 (0.4-0.5)	0.5 (0.5-0.6)	0.5 (0.4-0.5)	0.5 (0.5-0.6)	0.5 (0.5-0.6)	0.5 (0.4-0.5)	0.5 (0.4-0.5)	0.5 (0.5-0.6)	↑	
Surgeon	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	0.5 (0.4-0.5)	↓	
Dermatologist	0.4 (0.4-0.5)	0.5 (0.4-0.5)	0.5 (0.4-0.5)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	0.5 (0.4-0.5)	0.4 (0.4-0.5)	0.5 (0.4-0.5)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	—	
Ophthalmologist	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	0.5 (0.5-0.6)	0.4 (0.4-0.5)	0.5 (0.5-0.6)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	↓	
Cardiologist	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.4-0.5)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.4-0.4)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	↑	
Gastroenterologist	0.3 (0.2-0.3)	0.3 (0.2-0.3)	0.4 (0.3-0.4)	0.3 (0.3-0.3)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	↑	
Ear, nose and throat	0.4 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.3)	0.3 (0.3-0.4)	—	
Gynaecologist	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.3)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.4)	0.3 (0.3-0.3)	0.3 (0.3-0.3)	—	
Urologist	0.2 (0.2-0.2)	0.2 (0.2-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.3)	0.2 (0.2-0.2)	0.2 (0.2-0.2)	—	
Psychiatrist	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	—	
Neurologist	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.2-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	—	

(continued)

**Table 11.1a (continued): The most frequent referrals (rate per 100 problems), 2003–04 to 2012–13**

Referral	Rate per 100 problems (95% CI)											2012–13 (n = 152,517) ↑ <sup>(a)</sup> ↓
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Paediatrician	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	—
Clinic/centre	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	—
Endocrinologist	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	—
Allied health services	1.8 (1.7–1.9)	1.9 (1.7–2.0)	2.0 (1.8–2.1)	2.1 (1.9–2.2)	2.3 (2.1–2.4)	2.5 (2.3–2.7)	2.6 (2.4–2.7)	2.8 (2.6–2.9)	3.0 (2.8–3.2)	3.0 (2.8–3.2)	3.0 (2.8–3.2)	↑
Physiotherapy	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.8 (0.7–0.8)	0.7 (0.7–0.8)	0.7 (0.7–0.8)	0.9 (0.8–0.9)	0.9 (0.8–0.9)	0.8 (0.7–0.9)	—
Psychologist	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.3 (0.2–0.3)	0.4 (0.4–0.5)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.6)	0.7 (0.6–0.7)	↑
Podiatrist/chiropracist	0.1 (0.1–0.1)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.3–0.3)	0.3 (0.3–0.3)	0.4 (0.3–0.4)	↑
Dietitian/nutritionist	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	↑
Dentist	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.1–0.2)	—
Hospital	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	↓
Emergency department	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	—
Other referrals	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.4)	↑
<b>Total referrals</b>	<b>7.9 (7.6–8.3)</b>	<b>7.9 (7.6–8.2)</b>	<b>8.2 (7.9–8.5)</b>	<b>8.2 (7.9–8.5)</b>	<b>8.3 (8.0–8.6)</b>	<b>8.9 (8.6–9.2)</b>	<b>8.7 (8.4–9.0)</b>	<b>9.3 (8.9–9.6)</b>	<b>9.4 (9.1–9.8)</b>	<b>9.4 (9.1–9.8)</b>	<b>9.5 (9.2–9.9)</b>	<b>↑</b>

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

**Table 11.1b: The most frequent referrals (rate per 100 encounters), 2003–04 to 2012–13**

Referral	Rate per 100 encounters (95% CI)											↑ <sup>(a)</sup> ↓
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
At least one referral	11.0 (10.5–11.5)	10.9 (10.5–11.3)	11.3 (10.9–11.8)	11.5 (11.0–11.9)	11.8 (11.3–12.2)	12.8 (12.3–13.2)	12.4 (11.9–12.9)	13.0 (12.5–13.5)	13.3 (12.8–13.8)	13.5 (13.0–14.1)	↑	
Medical specialist	7.9 (7.5–8.2)	7.7 (7.4–8.1)	8.2 (7.8–8.5)	8.1 (7.7–8.4)	8.0 (7.6–8.3)	9.0 (8.7–9.3)	8.4 (8.1–8.8)	8.6 (8.2–9.0)	8.6 (8.2–8.9)	8.9 (8.5–9.3)	↑	
Orthopaedic surgeon	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.7 (0.6–0.7)	0.8 (0.7–0.9)	0.8 (0.7–0.8)	0.7 (0.6–0.8)	0.8 (0.7–0.8)	0.8 (0.7–0.9)	–	
Surgeon	0.8 (0.8–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.8)	0.8 (0.8–0.9)	0.8 (0.8–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.8 (0.8–0.9)	0.8 (0.8–0.9)	0.8 (0.7–0.9)	–	
Dermatologist	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.6 (0.5–0.7)	0.7 (0.6–0.7)	0.7 (0.7–0.8)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	–	
Ophthalmologist	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.7 (0.6–0.7)	0.8 (0.7–0.9)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	–	
Cardiologist	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	0.5 (0.5–0.6)	0.6 (0.6–0.7)	0.7 (0.6–0.8)	0.6 (0.6–0.7)	↑	
Gastroenterologist	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.5 (0.5–0.6)	0.4 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.7)	↑	
Ear, nose and throat	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.6)	0.5 (0.5–0.6)	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.5–0.6)	–	
Gynaecologist	0.6 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.5 (0.5–0.6)	0.4 (0.4–0.5)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.6)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	↓	
Urologist	0.3 (0.3–0.4)	0.3 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.3)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	–	
Psychiatrist	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	–	
Neurologist	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	–	
Paediatrician	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	–	

(continued)

**Table 11.1b (continued): The most frequent referrals (rate per 100 encounters), 2003–04 to 2012–13**

Referral	Rate per 100 encounters (95% CI)												(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)			
Allied health services	2.6 (2.4–2.8)	2.7 (2.5–2.9)	2.9 (2.7–3.1)	3.1 (2.9–3.3)	3.4 (3.2–3.7)	3.9 (3.6–4.1)	3.9 (3.7–4.2)	4.2 (3.9–4.5)	4.7 (4.4–5.0)	4.7 (4.4–5.0)	4.7 (4.4–5.0)	↑	
Physiotherapy	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.1 (1.0–1.3)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.2 (1.1–1.3)	1.1 (1.0–1.3)	1.1 (1.0–1.2)	1.3 (1.2–1.4)	1.3 (1.2–1.4)	1.2 (1.1–1.3)	↑	
Psychologist	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.4 (0.4–0.5)	0.7 (0.6–0.7)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.1)	↑	
Podiatrist/chiropracist	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.4–0.5)	0.5 (0.4–0.5)	0.5 (0.4–0.5)	0.6 (0.5–0.6)	↑	
Dietitian/nutritionist	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	↑	
Dentist	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.2–0.3)	↑	
Hospital	0.6 (0.5–0.6)	0.5 (0.4–0.5)	0.4 (0.3–0.4)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	0.4 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.4 (0.3–0.4)	↓	
Emergency department	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.2)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.3–0.4)	0.3 (0.2–0.3)	↑	
Other referrals	0.4 (0.4–0.5)	0.4 (0.4–0.5)	0.4 (0.3–0.4)	0.5 (0.5–0.6)	0.5 (0.4–0.6)	0.3 (0.2–0.4)	0.4 (0.3–0.5)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	0.6 (0.5–0.7)	↑	
<b>Total referrals</b>	<b>11.6 (11.1–12.2)</b>	<b>11.5 (11.1–12.0)</b>	<b>12.0 (11.5–12.5)</b>	<b>12.2 (11.7–12.7)</b>	<b>12.5 (12.0–13.0)</b>	<b>13.7 (13.2–14.2)</b>	<b>13.3 (12.8–13.8)</b>	<b>14.1 (13.5–14.7)</b>	<b>14.5 (13.9–15.1)</b>	<b>14.8 (14.2–15.4)</b>	<b>14.8 (14.2–15.4)</b>	<b>↑</b>	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

Note: CI – confidence interval.

## 12 Investigations

Investigations ordered by GPs for each of the 10 years 2003–04 to 2012–13, are reported in two ways: as rates per 100 problems managed (for example, Table 12.1a) and as rates per 100 encounters (for example, Table 12.1b). In the text describing changes over time, the rates per 100 problems are reported as the primary measure, because there was a significant increase in the number of problems managed per encounter.

The direction and type of change from 2003–04 to 2012–13 is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

Significant linear changes in the rate per 100 encounters can be extrapolated to estimate the national increase or decrease in the investigations ordered between 2003–04 and 2012–13. Examples of extrapolated change are given. The method used to extrapolate to national change estimates is described in Section 2.9.

The GPs participating in BEACH were asked to record (in free text) any pathology, imaging or other tests ordered or done at the encounter, and to nominate the patient problem(s) associated with each test order. This allows the linkage of a test order to a single problem or multiple problems. Up to five orders for pathology and two for imaging and other tests could be recorded at each encounter. A single test may have been ordered for the management of multiple problems, and multiple tests may have been used in the management of a single problem.

A pathology test order may be for a single test (for example, Pap smear, HbA1c) or for a battery of tests (for example, lipids, full blood count). Where a battery of tests was ordered, the battery name was recorded rather than each individual test. GPs also recorded the body site for any imaging ordered (for example, x-ray chest, computerised tomography head).

More detailed analyses of investigations ordered by GPs in 2012–13 can be found in Chapter 12 of *General practice activity in Australia 2012–13*.<sup>1</sup>

Comprehensive investigation of GPs' pathology and imaging ordering was published in several reports. Interested readers may wish to consult:

- a comprehensive report on pathology ordering by GPs in Australia in 1998, written by the then General Practice Statistics and Classification Unit using BEACH data, published on the internet by the then Department of Health and Aged Care<sup>60</sup>
- a report on imaging orders by GPs in Australia in 1999–2000 using BEACH data, published as an AIHW–University of Sydney book in the GP series in 2001<sup>61</sup>
- a report on changes in pathology ordering by GPs from 1998 to 2001 using BEACH data, published as an AIHW–University of Sydney book in the GP series in 2003<sup>62</sup>
- a review of GP pathology ordering in the National Health Priority Areas and other selected problems between 2000 and 2008, reported in the AIHW–University of Sydney publication *General practice in Australia, health priorities and policies 1998 to 2008*<sup>63</sup>
- a report *Evidence-practice gap in GP pathology test ordering: a comparison of BEACH pathology data and recommended testing*, prepared for the Australian Government Quality Use of Pathology Program in June 2009.<sup>64</sup>

## 12.1 Number of problems or encounters where pathology or imaging was ordered

Table 12.1a shows there was a significant increase in the proportion of problems for which pathology or imaging was ordered.

- The likelihood of ordering at least one pathology test increased from 11.9% of all problems managed in 2003–04 to 13.5% in 2012–13.
- The proportion of problems generating imaging orders increased from 5.1% in 2003–04 to 5.9% in 2012–13.

Between 2003–04 and 2012–13, the number of problems managed per 100 encounters rose from 146.3 to 154.7 (Table 5.1). Both the rise in the proportion of problems generating test orders and the rise in the number of problems managed per encounter contributed to an overall increase in the proportion of encounters involving a pathology or imaging test (Table 12.1b).

- The likelihood of ordering at least one pathology test per encounter increased from 15.5% of encounters in 2003–04 to 18.1% in 2012–13, equating to approximately 8 million more encounters at which pathology was ordered in 2012–13 than 10 years earlier.
- The proportion of encounters generating imaging orders increased from 7.2% in 2003–04 to 8.8% in 2012–13, resulting in an estimated 4.2 million more encounters nationally at which imaging was ordered in 2012–13 than in 2003–04.

## 12.2 Pathology test orders by MBS groups

Tables 12.2a and 12.2b show the changes in the total number of pathology test orders, and in the distribution of these by MBS pathology groups.<sup>65</sup>

The number of pathology tests ordered increased from 24.1 tests/batteries of tests per 100 problems managed in 2003–04 to 30.4 per 100 problems in 2012–13 (Table 12.2a).

The largest increase was in orders for chemical pathology, which increased from 13.0 per 100 problems in 2003–04 to 17.9 per 100 in 2012–13. Haematology increased at a slower rate, from 4.6 per 100 problems in 2003–04 to 5.4 in 2012–13. There was a far smaller increase in order rates for immunology, and a marginal increase in orders for simple tests. There was a marginal decrease in the order rate of cytopathology tests, and no changes in the other individual test groups.

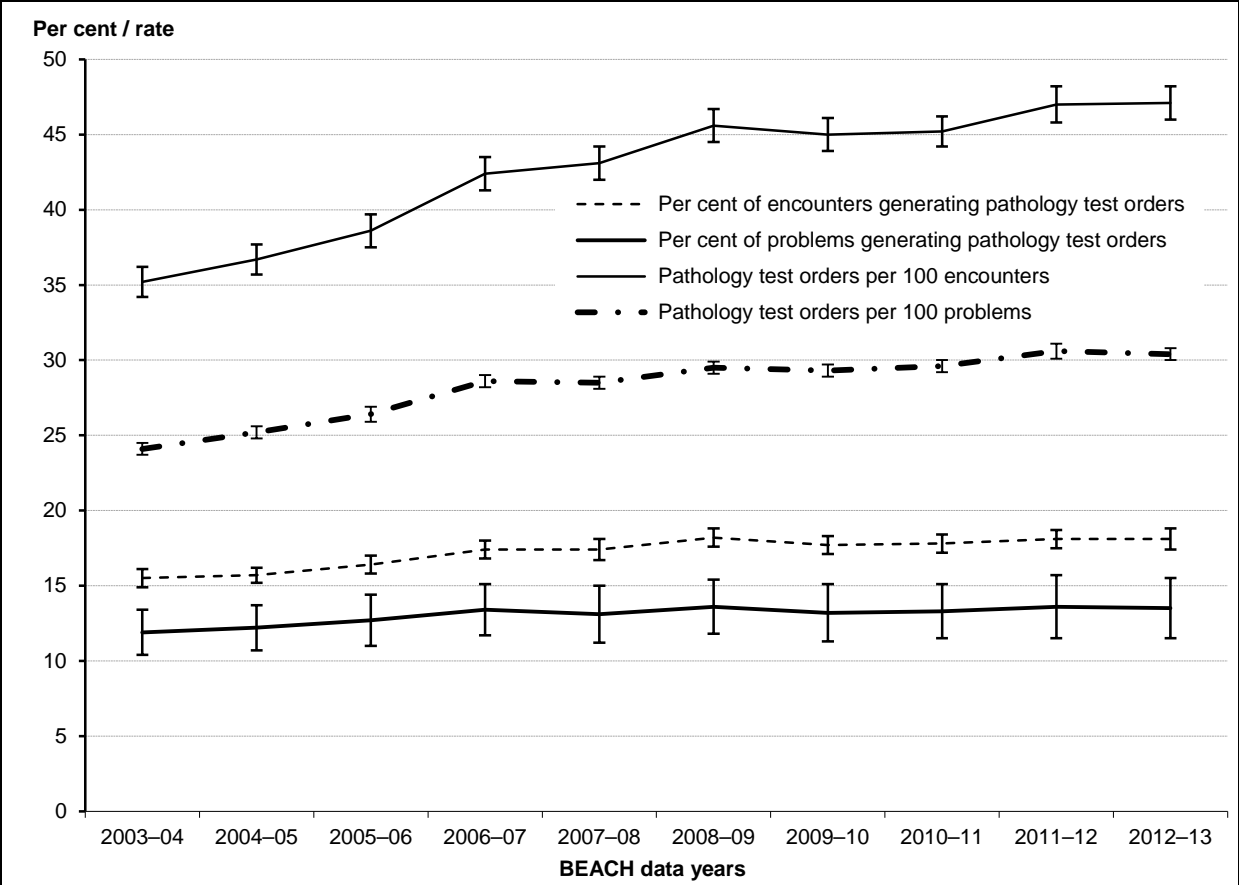
The number of pathology tests ordered per 100 encounters increased from 35.2 tests (or batteries of tests) per 100 encounters in 2003–04 to 47.1 in 2012–13 (Table 12.2b), which, when combined with the increase in attendance rate, extrapolates to approximately 25.8 million more tests/batteries of tests ordered in 2012–13 than in 2003–04 nationally.

The largest increase was in orders for chemical pathology, which increased by 45% from 19.1 per 100 encounters in 2003–04 to 27.7 in 2012–13. This extrapolates to an estimated 16.7 million more chemistry test orders nationally in 2012–13 than 10 years earlier.

Haematology tests increased at a slower rate, rising from 6.8 tests per 100 encounters in 2003–04 to 8.4 in 2012–13, a national increase of approximately 4.1 million tests. Microbiology test orders increased from 5.3 per 100 encounters in 2003–04 to 6.3 in 2012–13, extrapolating to an increase of about 2.9 million additional test orders nationally in 2012–13. There was a far smaller increase in order rates for immunology, a marginal increase in simple tests, and no increases in the other test groups.



Figure 12.1 shows the statistically significant increases in the likelihood of ordering pathology and the total number of pathology tests ordered per 100 problems or per 100 encounters over the 10 years to 2012-13. Most of each increase occurred between 2003-04 and 2008-09 and these measures then remained stable (Figure 12.1). The growth in the number of tests/batteries ordered was larger than the growth in likelihood of ordering because, once a decision to order was made, the number of tests ordered significantly increased from an average 2.0 tests/batteries per tested problem in 2003-04<sup>48</sup> to 2.4 per tested problem in 2012-13.<sup>1</sup>



Note: Data are drawn from Tables 12.1a, 12.1b, 12.2a, and 12.2b.

Figure 12.1: Proportion of encounters and problems where pathology was ordered, and pathology test order rates per 100 encounters and per 100 problems, 2003-04 to 2012-13 (95% confidence intervals)

### 12.3 Imaging test orders by MBS group

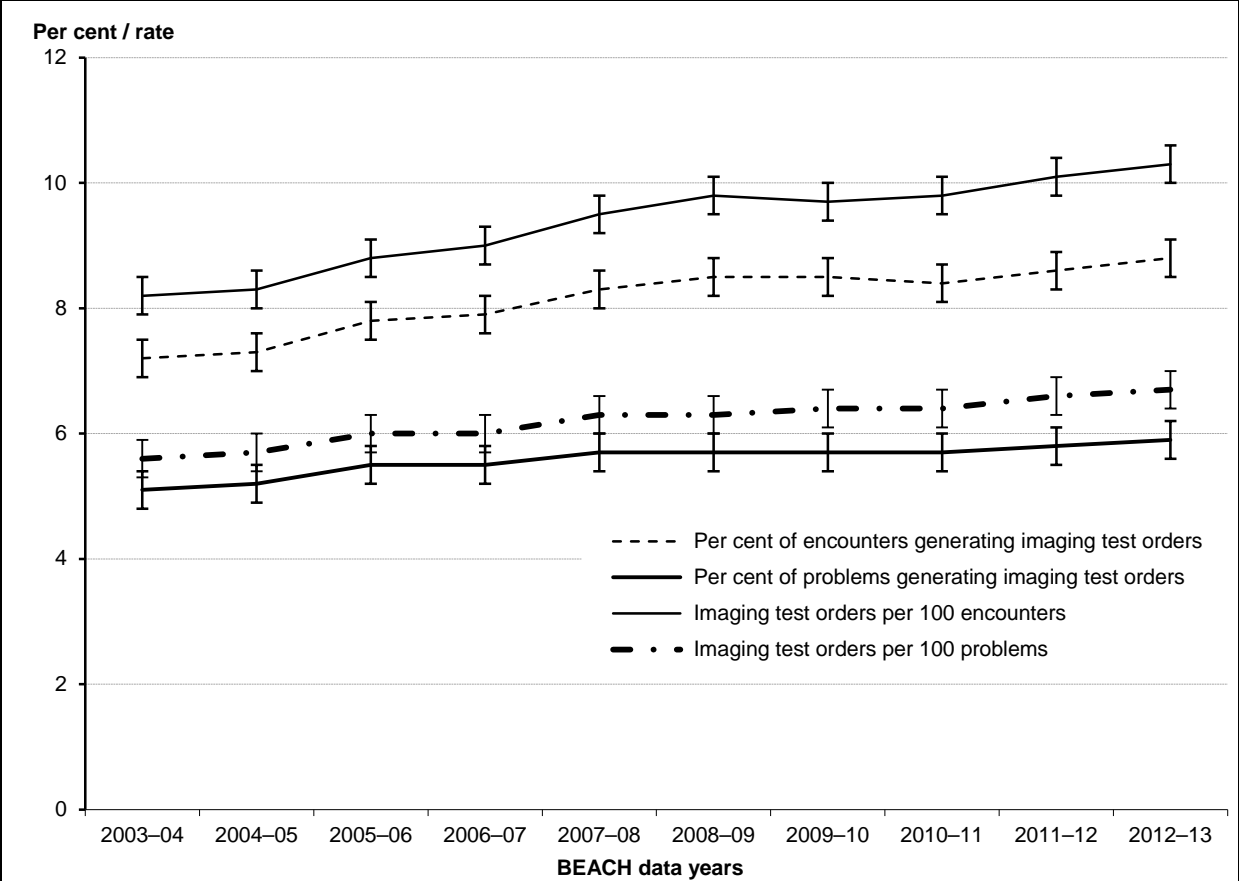
Tables 12.3a and 12.3b show the changes in imaging orders by MBS imaging group from 2003-04 to 2012-13.

Total imaging test orders increased significantly from 5.6 per 100 problems managed in 2003-04 to 6.7 per 100 in 2012-13 (Table 12.3a). Ultrasound imaging increased from 1.8 tests per 100 problems in 2003-04 to 2.7 per 100 in 2012-13. Computerised tomography increased from 0.6 to 0.8 per 100 problems. Magnetic resonance imaging increased from less than 0.05 per 100 problems in 2003-04 to 0.2 in 2012-13.

Diagnostic radiology orders decreased marginally from 3.1 per 100 problems in 2003–04 to 2.9 in 2012–13. Nuclear medicine order rates did not change during this period.

Total imaging test orders per 100 encounters also increased significantly from 8.2 in 2003–04 to 10.3 in 2012–13 (Table 12.3b), suggesting there were 5.2 million more imaging orders nationally in 2012–13 than 10 years earlier. Ultrasound imaging orders increased from 2.7 tests per 100 encounters in 2003–04 to 4.2 per 100 in 2012–13, a national increase of about 2.7 million ultrasound orders over the study period. Computerised tomography increased from 0.8 per 100 encounters in 2003–04 to 1.3 in 2012–13, equating to an additional 880,000 orders for computerised tomography in 2012–13 than a decade earlier. Magnetic resonance imaging orders increased from less than 0.05 per 100 encounters in 2003–04 to 0.2 in 2012–13. Order rates of diagnostic radiology and nuclear medicine did not change over this period.

Figure 12.2 shows the statistically significant increases in the likelihood of ordering imaging and the total number of imaging tests ordered per 100 problems and per 100 encounters over the 10 years to 2012–13. Most of the increase in the rate of imaging (per 100 problems and per 100 encounters) occurred between 2003–04 and 2008–09 and each measure has remained stable since that time (Figure 12.2).



Note: Data are drawn from Tables 12.1a, 12.1b, 12.3a, and 12.3b.

Figure 12.2: Proportion of encounters and problems where imaging was ordered, and imaging test order rates per 100 encounters and per 100 problems, 2003–04 to 2012–13 (95% confidence intervals)

**Table 12.1a: Problems for which pathology or imaging was ordered (per cent of problems), 2003–04 to 2012–13**

Test ordered	Per cent of problems (95% CI)											(a)
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
At least one pathology test ordered	11.9 (11.5–12.4)	12.2 (11.8–12.6)	12.7 (12.2–13.2)	13.4 (13.0–13.9)	13.1 (12.7–13.6)	13.6 (13.2–14.0)	13.2 (12.8–13.7)	13.3 (12.9–13.7)	13.6 (13.1–14.1)	13.5 (13.1–14.0)	↕	
At least one imaging test ordered	5.1 (4.8–5.3)	5.2 (5.0–5.4)	5.5 (5.3–5.7)	5.5 (5.3–5.7)	5.7 (5.4–5.9)	5.7 (5.4–5.9)	5.7 (5.5–6.0)	5.7 (5.5–5.9)	5.8 (5.6–6.1)	5.9 (5.7–6.2)	↕	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↕ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04.

Note: CI – confidence interval.

**Table 12.1b: Encounters at which pathology or imaging was ordered (per cent of encounters), 2003–04 to 2012–13**

Test ordered	Per cent of encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,804)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
At least one pathology test ordered	15.5 (14.9–16.1)	15.7 (15.2–16.3)	16.4 (15.8–16.9)	17.4 (16.8–18.0)	17.4 (16.7–18.0)	18.2 (17.6–18.8)	17.7 (17.1–18.3)	17.8 (17.2–18.4)	18.1 (17.4–18.7)	18.1 (17.4–18.7)	↕	
At least one imaging test ordered	7.2 (6.9–7.5)	7.3 (7.0–7.6)	7.8 (7.4–8.1)	7.9 (7.6–8.2)	8.3 (8.0–8.6)	8.5 (8.1–8.8)	8.5 (8.2–8.9)	8.4 (8.0–8.7)	8.6 (8.3–9.0)	8.8 (8.4–9.2)	↕	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↕ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04.

Note: CI – confidence interval.

**Table 12.2a: Pathology orders by MBS pathology groups (rate per 100 problems), 2003-04 to 2012-13**

Pathology test ordered	Rate per 100 problems (95% CI)											2012-13 (n = 152,517)	↑ <sup>(a)</sup> ↓
	2003-04 (n = 144,674)	2004-05 (n = 137,330)	2005-06 (n = 149,088)	2006-07 (n = 136,333)	2007-08 (n = 145,078)	2008-09 (n = 149,462)	2009-10 (n = 155,373)	2010-11 (n = 146,141)	2011-12 (n = 152,286)	2012-13			
Chemistry*	13.0 (12.4-13.7)	14.0 (13.4-14.6)	14.9 (14.1-15.6)	16.5 (15.8-17.2)	16.5 (15.7-17.2)	17.4 (16.7-18.1)	16.9 (16.1-17.6)	17.2 (16.5-17.9)	18.0 (17.1-18.8)	17.9 (17.2-18.6)	17.9 (17.2-18.6)	↑	
Haematology*	4.6 (4.4-4.9)	4.8 (4.5-5.0)	5.0 (4.7-5.3)	5.3 (5.0-5.6)	5.2 (5.0-5.5)	5.3 (5.0-5.5)	5.4 (5.1-5.7)	5.3 (5.0-5.5)	5.5 (5.2-5.8)	5.4 (5.2-5.7)	5.4 (5.2-5.7)	↑	
Microbiology*	3.6 (3.4-3.9)	3.6 (3.3-3.8)	3.8 (3.6-4.1)	3.9 (3.7-4.2)	3.7 (3.5-4.0)	3.7 (3.5-3.9)	4.1 (3.9-4.3)	4.3 (3.9-4.6)	4.0 (3.8-4.3)	4.1 (3.8-4.3)	4.1 (3.8-4.3)	—	
Cytopathology*	1.2 (1.1-1.3)	1.1 (1.0-1.3)	1.2 (1.1-1.3)	1.1 (1.0-1.3)	1.2 (1.1-1.4)	1.3 (1.1-1.4)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.1 (1.0-1.2)	1.0 (0.9-1.1)	1.0 (0.9-1.1)	↓	
Immunology*	0.3 (0.3-0.4)	0.4 (0.3-0.4)	0.4 (0.4-0.5)	0.4 (0.4-0.5)	0.5 (0.4-0.5)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.5 (0.5-0.6)	0.5 (0.5-0.6)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	↑	
Other NEC*	0.6 (0.5-0.6)	0.6 (0.5-0.7)	0.5 (0.4-0.6)	0.5 (0.4-0.7)	0.7 (0.5-0.8)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	0.6 (0.5-0.7)	—	
Tissue pathology*	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.4 (0.3-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.4 (0.3-0.5)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	0.5 (0.4-0.6)	—	
Infertility/pregnancy*	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.1 (0.1-0.2)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	—	
Simple tests*	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.1 (0.1-0.1)	0.1 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	0.2 (0.1-0.2)	↑	
<b>Total pathology tests</b>	<b>24.1 (23.1-25.0)</b>	<b>25.2 (24.3-26.2)</b>	<b>26.4 (25.3-27.5)</b>	<b>28.6 (27.5-29.6)</b>	<b>28.5 (27.4-29.6)</b>	<b>29.5 (28.4-30.5)</b>	<b>29.3 (28.2-30.4)</b>	<b>29.6 (28.6-30.7)</b>	<b>30.6 (29.3-31.8)</b>	<b>30.4 (29.3-31.5)</b>	<b>30.4 (29.3-31.5)</b>	<b>↑</b>	

(a) The direction and type of change from 2003-04 to 2012-13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012-13 compared with 2003-04; ↑/↓ indicates a marginally significant change in 2012-13 compared with 2003-04; and — indicates there was no significant change in 2012-13 compared with 2003-04.

\* Includes multiple ICP-2 and ICP-2 PLUS codes (see Appendix 4, Table A4.8, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; NEC – not elsewhere classified.

Table 12.2b: Pathology orders by MBS pathology groups (rate per 100 encounters), 2003–04 to 2012–13

Pathology test ordered	Rate per 100 encounters (95% CI)											<sup>(a)</sup>
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,804)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Chemistry*	19.1 (18.1–20.1)	20.4 (19.4–21.4)	21.7 (20.5–22.9)	24.5 (23.3–25.7)	24.9 (23.6–26.2)	27.0 (25.7–28.2)	25.9 (24.6–27.2)	26.2 (25.0–27.4)	27.6 (26.1–29.1)	27.7 (26.4–29.0)	↑	
Haematology*	6.8 (6.4–7.2)	7.0 (6.6–7.3)	7.3 (6.9–7.7)	7.9 (7.5–8.3)	7.9 (7.5–8.3)	8.2 (7.8–8.6)	8.3 (7.8–8.7)	8.1 (7.6–8.5)	8.5 (8.0–8.9)	8.4 (8.0–8.8)	↑	
Microbiology*	5.3 (4.9–5.6)	5.2 (4.8–5.6)	5.6 (5.2–5.9)	5.8 (5.4–6.2)	5.7 (5.3–6.0)	5.7 (5.3–6.1)	6.3 (5.9–6.6)	6.5 (6.0–7.0)	6.2 (5.9–6.6)	6.3 (5.9–6.7)	↑	
Cytology*	1.8 (1.5–2.0)	1.6 (1.5–1.8)	1.7 (1.6–1.9)	1.7 (1.5–1.9)	1.9 (1.7–2.1)	2.0 (1.7–2.2)	1.7 (1.5–1.9)	1.7 (1.5–1.8)	1.7 (1.5–1.9)	1.5 (1.4–1.7)	—	
Immunology*	0.5 (0.4–0.6)	0.6 (0.5–0.6)	0.6 (0.5–0.7)	0.7 (0.6–0.7)	0.7 (0.6–0.8)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	0.9 (0.8–1.0)	↑	
Other NEC*	0.8 (0.7–0.9)	0.8 (0.7–1.0)	0.7 (0.6–0.8)	0.8 (0.7–1.0)	1.0 (0.8–1.2)	0.8 (0.7–1.0)	0.7 (0.6–0.9)	0.9 (0.7–1.0)	0.9 (0.7–1.1)	0.9 (0.7–1.0)	—	
Tissue pathology*	0.7 (0.5–0.8)	0.8 (0.6–0.9)	0.6 (0.5–0.7)	0.7 (0.6–0.8)	0.8 (0.6–0.9)	0.7 (0.6–0.9)	0.8 (0.7–0.9)	0.6 (0.5–0.7)	0.8 (0.7–0.9)	0.8 (0.7–0.9)	—	
Infertility/pregnancy*	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	—	
Simple tests*	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.2)	0.2 (0.2–0.3)	0.3 (0.2–0.3)	0.2 (0.2–0.3)	↑	
<b>Total pathology tests</b>	<b>35.2 (33.7–36.8)</b>	<b>36.7 (35.2–38.2)</b>	<b>38.6 (36.9–40.3)</b>	<b>42.4 (40.7–44.2)</b>	<b>43.1 (41.3–45.0)</b>	<b>45.6 (43.8–47.4)</b>	<b>45.0 (43.1–46.9)</b>	<b>45.2 (43.4–47.0)</b>	<b>47.0 (44.9–49.1)</b>	<b>47.1 (45.1–49.0)</b>	<b>↑</b>	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

\* Includes multiple ICP-2 and ICP-2 PLUS codes (see Appendix 4, Table A4.8, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval; NEC – not elsewhere classified.

Table 12.3a: Imaging orders by MBS imaging groups (rate per 100 problems), 2003–04 to 2012–13

Imaging test ordered	Rate per 100 problems (95% CI)											(a)
	2003–04 (n = 144,674)	2004–05 (n = 137,330)	2005–06 (n = 149,088)	2006–07 (n = 136,333)	2007–08 (n = 145,078)	2008–09 (n = 149,462)	2009–10 (n = 155,373)	2010–11 (n = 146,141)	2011–12 (n = 152,286)	2012–13 (n = 152,517)		
Diagnostic radiology*	3.1 (3.0–3.3)	3.1 (2.9–3.2)	3.3 (3.1–3.4)	3.1 (2.9–3.2)	3.2 (3.0–3.3)	3.1 (2.9–3.2)	3.0 (2.8–3.1)	3.0 (2.9–3.2)	3.0 (2.8–3.2)	3.0 (2.7–3.0)	2.9 (2.7–3.0)	↓
Ultrasound*	1.8 (1.7–1.9)	1.8 (1.7–1.9)	2.0 (1.9–2.1)	2.1 (2.0–2.2)	2.2 (2.1–2.3)	2.3 (2.2–2.4)	2.4 (2.3–2.5)	2.5 (2.4–2.6)	2.6 (2.5–2.7)	2.7 (2.6–2.9)	2.7 (2.6–2.9)	↑
Computerised tomography*	0.6 (0.5–0.6)	0.7 (0.6–0.8)	0.7 (0.6–0.8)	0.7 (0.7–0.8)	0.8 (0.7–0.9)	0.8 (0.8–0.9)	0.8 (0.7–0.9)	0.7 (0.7–0.8)	0.8 (0.7–0.8)	0.8 (0.8–0.9)	0.8 (0.8–0.9)	↑
Magnetic resonance imaging*	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.2 (0.1–0.2)	0.2 (0.1–0.2)	↑
Nuclear medicine*	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	—
<b>Total imaging tests</b>	<b>5.6 (5.4–5.9)</b>	<b>5.7 (5.5–5.9)</b>	<b>6.0 (5.8–6.3)</b>	<b>6.0 (5.8–6.3)</b>	<b>6.3 (6.1–6.5)</b>	<b>6.3 (6.1–6.6)</b>	<b>6.4 (6.1–6.6)</b>	<b>6.4 (6.1–6.7)</b>	<b>6.6 (6.3–6.8)</b>	<b>6.7 (6.4–6.9)</b>	<b>6.7 (6.4–6.9)</b>	↑

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

† Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 problems.

\* Includes multiple ICP-2 and ICP-2 PLUS codes (see Appendix 4, Table A4.9, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval.

Table 12.3b: Imaging orders by MBS imaging groups (rate per 100 encounters), 2003–04 to 2012–13

Imaging test ordered	Rate per 100 encounters (95% CI)											(a)
	2003–04 (n = 98,877)	2004–05 (n = 94,386)	2005–06 (n = 101,993)	2006–07 (n = 91,805)	2007–08 (n = 95,898)	2008–09 (n = 96,688)	2009–10 (n = 101,349)	2010–11 (n = 95,839)	2011–12 (n = 99,030)	2012–13 (n = 98,564)		
Diagnostic radiology*	4.6 (4.3–4.8)	4.5 (4.3–4.7)	4.8 (4.5–5.0)	4.6 (4.4–4.8)	4.8 (4.6–5.0)	4.7 (4.5–5.0)	4.6 (4.3–4.8)	4.6 (4.4–4.9)	4.6 (4.3–4.9)	4.5 (4.2–4.7)	—	
Ultrasound*	2.7 (2.5–2.8)	2.7 (2.5–2.8)	2.9 (2.7–3.1)	3.2 (3.0–3.3)	3.4 (3.2–3.5)	3.6 (3.4–3.8)	3.7 (3.5–3.8)	3.8 (3.6–4.0)	4.0 (3.8–4.2)	4.2 (4.0–4.4)	↑	
Computerised tomography*	0.8 (0.7–0.9)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	1.3 (1.1–1.4)	1.1 (1.0–1.2)	1.2 (1.1–1.3)	1.3 (1.2–1.4)	↑	
Magnetic resonance imaging*	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.0)	0.0 <sup>†</sup> (0.0–0.1)	0.0 <sup>†</sup> (0.0–0.1)	0.1 (0.0–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.2)	0.2 (0.2–0.3)	0.2 (0.2–0.3)	↑	
Nuclear medicine*	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.2)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	0.1 (0.1–0.1)	—	
<b>Total imaging tests</b>	<b>8.2 (7.8–8.6)</b>	<b>8.3 (8.0–8.6)</b>	<b>8.8 (8.4–9.2)</b>	<b>9.0 (8.6–9.3)</b>	<b>9.5 (9.2–9.9)</b>	<b>9.8 (9.4–10.2)</b>	<b>9.7 (9.3–10.1)</b>	<b>9.8 (9.4–10.2)</b>	<b>10.1 (9.6–10.5)</b>	<b>10.3 (9.9–10.8)</b>	↑	

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

<sup>†</sup> Rates are reported to one decimal place. This indicates that the rate is less than 0.05 per 100 encounters.

\* Includes multiple ICP-2 and ICP-2 PLUS codes (see Appendix 4, Table A4.9, <hdl.handle.net/2123/9366>).

Note: CI – confidence interval.

# 13 Patient risk factors

General practice is a useful intervention point for health promotion because the majority of the population visit a GP at least once per year – in 2012–13, 85% of Australians visited a GP at least once (personal communication DoHA, June 2013). GPs have substantial knowledge of population health and screening programs. They are in an ideal position to advise patients about the benefits of health screening, and to individually counsel patients about their lifestyle choices.

Since the beginning of the BEACH program (1998), a section on the bottom of each encounter form has been used to investigate aspects of patient health or healthcare delivery not covered by general practice encounter-based information. These additional substudies are referred to as Supplementary Analysis of Nominated Data (SAND). The SAND methods are described in Chapter 2, Section 2.6.

In brief, measured patient risk factors include self-reported height and weight (to calculate body mass index or BMI), alcohol consumption and smoking status. Each GP completes risk factor questions for patients at a subsample of 40 encounters. An example of the encounter form with the patient risk factor SAND questions is provided in Appendix 1. The methods used to investigate each risk factor are summarised in this chapter. Further detail is provided in Chapter 13 of the companion report *General practice activity in Australia 2012–13*.<sup>1</sup>

This chapter includes data about the risk behaviours of general practice patients from each of the most recent 10 years of the BEACH study from 2003–04 to 2012–13. The direction and type of change from 2003–04 to 2012–13 is indicated for each result in the far right column of the tables: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04; and § indicates a noteworthy change during the decade.

## 13.1 Body mass index

Patient BMI was investigated for a subsample of 40 patients per GP. Each GP was instructed to ask the patient (or their carer in the case of children):

- What is your height in centimetres (without shoes)?
- What is your weight in kilograms (unclothed)?

Metric conversion tables (feet and inches; stones and pounds) were provided to the GP.

The BMI for an individual was calculated by dividing weight (kilograms) by height (metres) squared. The WHO recommendations<sup>66</sup> for BMI groups were used, which specify that an adult (18 years and over) with a BMI:

- less than 18.5 is underweight
- greater than or equal to 18.5 and less than 25 is normal
- greater than or equal to 25 and less than 30 is overweight
- of 30 or more is obese.

The BEACH data on BMI are presented separately for adults (aged 18 years and over) and children (aged 2–17 years). The standard BMI cut-offs described above were applied for the adult sample, and the method described by Cole et al. (2000 & 2007) was used for children (aged 2–17 years).<sup>67,68</sup>



## Adults

Overall prevalence of overweight and obesity in adults sampled at general practice encounters increased significantly from 56.5% in 2003–04 (95% CI: 55.6–57.4) to 61.2% in 2012–13 (95% CI: 60.3–62.1) (results not tabulated).

- There was a significant increase in the prevalence of obesity from 22.1% in 2003–04 to 26.6% in 2012–13 (Table 13.1). The significant increase in adult obesity was apparent among both male and female patients (Tables 13.2 and 13.3). The increase in obesity was evident between 2003–04 and 2010–11 (from 22.1% to 26.7%), and it has been static at about 26.6% for the 3 years 2010–11 to 2012–13.
- The proportion of adults who were in the normal weight range decreased significantly from 40.7% in 2003–04 to 36.2% in 2012–13 (Table 13.1). This significant decrease was apparent among both male and female patients (Tables 13.2 and 13.3). The decrease in normal weight was evident between 2003–04 and 2010–11 (from 40.7% to 35.8%), and it has been static at about 36% for the 3 years 2010–11 to 2012–13.

In summary, for both male and female patients between 2003–04 and 2012–13, there was a significant increase in the prevalence of obesity and a corresponding decrease in normal weight. Effectively a significant proportion of patients moved from the normal weight range into the overweight range, and a similar proportion of those who were overweight moved into the obese weight range. If this upward movement from normal weight, to overweight, and overweight to obesity continues, it will have huge implications for public health.

## Children

The prevalence of obesity among sampled children aged 2–17 years decreased significantly from 11.8% (95% CI: 10.5–13.2) in 2003–04 to 9.0% (95% CI: 7.9–10.2) in 2012–13 (Table 13.1), but this decrease was noted only for male children (from 13.7% to 10.1%) (Table 13.2).

There was a corresponding increase in the prevalence of normal weight from 57.9% (95% CI: 56.0–59.7) in 2003–04 to 62.5% (95% CI: 60.6–64.5) in 2012–13 (Table 13.1). This significant increase in prevalence of normal weight children was noted among both male and female children (56.0% to 61.8%; and 59.4% to 63.2% respectively) (Table 13.2 and Table 13.3).

## 13.2 Smoking

GPs were instructed to ask adult patients (18 years and over):

- What best describes your smoking status?
  - Smoke daily
  - Smoke occasionally
  - Previous smoker
  - Never smoked

## Results

There was a significant decrease in the prevalence of current daily smoking and occasional smoking among sampled adults aged 18 years and over attending general practice, from 17.6% and 4.3% respectively in 2003–04 to 14.4% and 2.6% in 2012–13 (Table 13.1). These decreases were apparent among both male and female patients (Tables 13.2 and 13.3).

Prevalence of daily smoking were significantly higher among male patients than female patients in all years. In 2012–13 prevalence was 17.6% of males and 12.4% of females.

## 13.3 Alcohol consumption

To measure alcohol consumption, BEACH uses AUDIT-C<sup>69</sup> which is the first three items from the WHO Alcohol Use Disorders Identification Test (AUDIT),<sup>70</sup> with scoring for an Australian setting.<sup>71</sup> The AUDIT-C has demonstrated validity and internal consistency and performs as well as the full AUDIT tool.<sup>72</sup> The three–AUDIT-C tool is practical and valid in a primary care setting to assess ‘at-risk’ alcohol consumption (heavy drinking and/or active alcohol dependence).<sup>69</sup> The scores for each question range from zero to four. A total (sum of all three questions) score of five or more for males, or four or more for females, suggests that the person’s drinking level is placing him or her at-risk.<sup>71</sup>

GPs were instructed to ask adult patients (18 years and over):

- How often do you have a drink containing alcohol?  
Never  
Monthly or less  
Once a week/fortnight  
2–3 times a week  
4 times a week or more
- How many standard drinks do you have on a typical day when you are drinking?  
\_\_\_\_\_
- How often do you have six or more standard drinks on one occasion?  
Never  
Less than monthly  
Monthly  
Weekly  
Daily or almost daily

A standard drinks chart was provided to each GP to help the patient identify the number of standard drinks consumed.

## Results

Prevalence of at-risk levels of alcohol consumption among sampled adults declined from about 27% in 2003–04 to 24% in 2012–13. A corresponding increase in non-drinkers from about 28% in 2003–04 to 32% in 2012–13 was evident (Table 13.1).

The prevalence of at-risk drinking among male patients significantly decreased over the decade from 33.1% to 29.3%, while among female patients a marginal decrease was noted from 22.6% to 20.8%. A corresponding increase in prevalence of non-drinkers over the decade was noted from 19.6% to 23.1% among males, and 33.9% to 37.2% for females (Tables 13.2 and 13.3).

## **13.4 Risk factor profile of adult patients**

All patient risk factor questions (BMI, smoking and alcohol consumption) were asked of the same subsample of adult patients. This allows us to build a risk profile for this sample for the three risk elements: overweight or obese weight status; daily smoking; and at-risk drinking. Each adult can have between zero and three of these risk factors.

### **Results**

There was a significant increase in the proportion of adults with one risk factor from 49.0% in 2003–04, to 52.0% in 2012–13 (Table 13.1). The increase was noted for both male and female patients (Tables 13.2 and 13.3). About one in five adults had two risk factors in all reported years. There was a marginally significant decrease in the proportion of patients with three risk factors from 4.0% to 3.4%.

Table 13.1: Patient risk factors, 2003-04 to 2012-13

Risk factor	Per cent (95% CI)											↑ ↓ <sup>(e)</sup>
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13		
<b>Adults (aged 18 years and over)</b>												
<b>Body mass index class<sup>(b)</sup> (n)</b>	<b>31,890</b>	<b>30,476</b>	<b>33,101</b>	<b>32,334</b>	<b>31,062</b>	<b>33,526</b>	<b>31,932</b>	<b>31,315</b>	<b>32,372</b>	<b>31,452</b>		
Obese	22.1 (21.4-22.7)	22.4 (21.7-23.2)	22.2 (21.5-22.9)	23.5 (22.7-24.2)	23.9 (23.1-24.6)	25.4 (24.7-26.1)	25.9 (25.2-26.6)	26.7 (26.0-27.5)	26.6 (25.8-27.3)	26.6 (25.8-27.4)	↑	
Overweight	34.5 (33.8-35.1)	34.6 (33.9-35.2)	34.6 (33.9-35.2)	35.0 (34.3-35.6)	35.4 (34.7-36.0)	36.1 (35.5-36.7)	34.4 (33.7-35.0)	35.1 (34.4-35.7)	35.0 (34.4-35.6)	34.6 (34.0-35.2)	—	
Normal	40.7 (39.9-41.6)	40.3 (39.5-41.2)	40.5 (39.7-41.4)	39.0 (38.1-39.8)	38.3 (37.4-39.2)	36.1 (35.3-36.8)	37.3 (36.5-38.2)	35.8 (35.0-36.7)	36.2 (35.3-37.0)	36.2 (35.4-37.0)	↓	
Underweight	2.8 (2.6-3.0)	2.7 (2.5-2.9)	2.8 (2.5-3.0)	2.6 (2.4-2.8)	2.5 (2.3-2.7)	2.5 (2.3-2.7)	2.4 (2.2-2.6)	2.4 (2.2-2.6)	2.3 (2.1-2.4)	2.6 (2.4-2.8)	—	
<b>Smoking status (n)</b>	<b>32,718</b>	<b>31,295</b>	<b>33,558</b>	<b>31,176</b>	<b>31,652</b>	<b>34,194</b>	<b>32,744</b>	<b>32,160</b>	<b>33,086</b>	<b>32,499</b>		
Daily	17.6 (16.8-18.3)	18.0 (17.2-18.7)	17.1 (16.3-17.8)	16.1 (15.4-16.9)	16.5 (15.8-17.3)	15.3 (14.6-15.9)	15.1 (14.4-15.8)	14.8 (14.2-15.5)	14.7 (14.0-15.3)	14.4 (13.7-15.1)	↓	
Occasional	4.3 (4.0-4.7)	3.7 (3.4-4.0)	3.6 (3.4-3.9)	3.2 (2.9-3.4)	2.9 (2.7-3.2)	2.6 (2.4-2.9)	2.7 (2.5-2.9)	2.7 (2.4-2.9)	2.5 (2.3-2.7)	2.6 (2.3-2.8)	↓	
Previous	28.0 (27.3-28.8)	28.0 (27.2-28.8)	27.1 (26.3-27.8)	28.8 (28.0-29.6)	27.9 (27.1-28.6)	28.8 (28.1-29.6)	28.2 (27.4-29.0)	28.3 (27.5-29.1)	27.9 (27.2-28.7)	27.7 (27.0-28.5)	—	
Never	50.1 (49.1-51.0)	50.3 (49.4-51.3)	52.3 (51.3-53.2)	51.9 (50.9-52.9)	52.7 (51.7-53.6)	53.3 (52.4-54.2)	54.0 (53.1-55.0)	54.2 (53.3-55.2)	54.9 (53.9-55.8)	55.3 (54.4-56.3)	↑	
<b>Alcohol consumption (n)</b>	<b>31,721</b>	<b>30,414</b>	<b>32,753</b>	<b>30,347</b>	<b>30,796</b>	<b>33,347</b>	<b>31,771</b>	<b>31,190</b>	<b>33,257</b>	<b>31,640</b>		
At-risk alcohol level	26.7 (25.8-27.6)	26.4 (25.5-27.3)	25.9 (25.0-26.8)	27.0 (26.1-28.0)	26.2 (25.3-27.1)	25.2 (24.3-26.0)	26.5 (25.7-27.4)	24.8 (23.9-25.7)	24.5 (23.7-25.4)	24.1 (23.3-24.9)	↓	
Responsible drinker	44.9 (44.1-45.8)	44.9 (44.0-45.7)	44.8 (44.0-45.7)	44.6 (43.7-45.5)	44.6 (43.7-45.5)	45.2 (44.3-46.1)	44.4 (43.5-45.3)	44.0 (43.0-44.9)	43.7 (42.9-44.6)	44.2 (43.3-45.1)	—	
Non-drinker	28.4 (27.3-29.4)	28.7 (27.7-29.8)	29.3 (28.2-30.4)	28.3 (27.3-29.4)	29.3 (28.2-30.3)	29.6 (28.6-30.7)	29.1 (28.0-30.1)	31.3 (30.2-32.4)	31.7 (30.6-32.8)	31.7 (30.6-32.8)	↑	

(continued)

Table 13.1 (continued): Patient risk factors, 2003–04 to 2012–13

Risk factor	Per cent (95% CI)											↑ ↓ <sup>(a)</sup>
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13		
<b>Adults (aged 18 years and over)</b>												
<b>Number of risk factors<sup>(b)</sup> (n)</b>	<b>30,713</b>	<b>29,418</b>	<b>32,076</b>	<b>29,386</b>	<b>30,002</b>	<b>32,432</b>	<b>30,795</b>	<b>30,177</b>	<b>31,401</b>	<b>30,345</b>	..	..
Zero	27.2 (26.4–28.1)	27.0 (26.1–27.8)	27.5 (26.7–28.3)	26.0 (25.2–26.8)	26.1 (25.3–26.9)	25.0 (24.2–25.7)	25.8 (25.0–26.5)	25.0 (24.3–25.7)	25.4 (24.6–26.2)	25.8 (25.0–26.6)	—	—
One	49.0 (48.4–49.7)	48.8 (48.1–49.6)	49.2 (48.5–49.9)	49.8 (49.1–50.6)	50.1 (49.4–50.8)	51.8 (51.1–52.5)	50.3 (49.6–51.0)	52.2 (51.5–52.9)	52.1 (51.4–52.8)	52.0 (51.3–52.7)	↑	↑
Two	19.8 (19.2–20.4)	20.3 (19.6–20.9)	19.4 (18.8–20.0)	20.4 (19.8–21.1)	19.8 (19.1–20.4)	19.5 (18.9–20.0)	20.1 (19.5–20.7)	19.1 (18.5–19.8)	18.9 (18.3–19.5)	18.8 (18.1–19.4)	—	—
Three	4.0 (3.7–4.3)	4.0 (3.7–4.2)	3.9 (3.6–4.1)	3.7 (3.5–4.0)	4.1 (3.8–4.4)	3.8 (3.5–4.1)	3.8 (3.6–4.1)	3.7 (3.4–4.0)	3.6 (3.3–3.9)	3.4 (3.1–3.7)	↓	↓
<b>Children (aged 2–17 years)<sup>(c)</sup> (n)</b>	<b>3,189</b>	<b>3,018</b>	<b>3,338</b>	<b>3,087</b>	<b>3,046</b>	<b>2,970</b>	<b>3,183</b>	<b>3,008</b>	<b>3,093</b>	<b>3,069</b>	..	..
Obese	11.8 (10.5–13.2)	10.8 (9.5–12.2)	10.9 (9.7–12.1)	10.6 (9.3–11.9)	11.2 (10.0–12.5)	10.5 (9.3–11.7)	9.6 (8.4–10.8)	10.6 (9.3–12.0)	11.1 (9.8–12.5)	9.0 (7.9–10.2)	↓	↓
Overweight	19.2 (17.7–20.7)	17.7 (16.3–19.1)	17.9 (16.5–19.2)	18.6 (17.2–20.0)	17.1 (15.7–18.5)	16.7 (15.3–18.2)	18.0 (16.7–19.4)	17.7 (16.2–19.1)	17.6 (16.2–19.0)	17.3 (15.9–18.7)	—	—
Normal	57.9 (56.0–59.7)	60.6 (58.7–62.5)	60.7 (58.9–62.5)	61.2 (59.3–63.0)	61.7 (59.7–63.6)	62.9 (61.0–64.8)	62.3 (60.4–64.1)	61.8 (59.9–63.8)	60.3 (58.4–62.3)	62.5 (60.6–64.5)	↑	↑
Underweight	11.1 (9.9–12.4)	10.9 (9.7–12.1)	10.5 (9.3–11.7)	9.7 (8.6–10.8)	10.1 (8.9–11.2)	9.9 (8.8–11.1)	10.1 (9.0–11.3)	9.9 (8.7–11.0)	11.0 (9.7–12.2)	11.1 (9.9–12.4)	—	—

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

(b) Adult patients aged 18 years and over with a recorded height outside the Australian Bureau of Statistics height range based on age and sex were excluded.

(c) Being overweight or obese, a daily smoker or an at-risk drinker are the risk factors an adult may have.

(d) Children (aged 2–17 years) with height outside the Australian Bureau of Statistics or Centres for Disease Control height range based on age and sex were excluded. Child BMI was re-calculated for 2003–04 to 2005–06, and will differ from data previously published to incorporate this exclusion and to apply a more precise method for calculating child BMI.

Note: CI – confidence interval.

Table 13.2: Patient risk factors among adult males, 2003-04 to 2012-13

Risk factor	Per cent (95% CI)											↑ ↓
	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13		
<b>Body mass index class<sup>(b)</sup> (n)</b>	<b>12,434</b>	<b>12,288</b>	<b>12,882</b>	<b>12,715</b>	<b>12,126</b>	<b>13,595</b>	<b>11,945</b>	<b>12,322</b>	<b>12,531</b>	<b>12,171</b>		
Obese	20.7 (19.8-21.5)	21.3 (20.4-22.3)	21.6 (20.7-22.5)	22.4 (21.6-23.3)	23.1 (22.1-24.1)	25.0 (24.1-26.0)	25.5 (24.6-26.5)	26.1 (25.2-27.1)	26.4 (25.4-27.4)	26.7 (25.7-27.7)	↑	
Overweight	42.3 (41.3-43.2)	42.0 (41.0-43.0)	42.6 (41.6-43.6)	42.3 (41.4-43.3)	43.0 (42.0-44.0)	43.6 (42.7-44.6)	42.1 (41.1-43.0)	42.2 (41.2-43.2)	42.5 (41.5-43.5)	42.5 (41.5-43.4)	—	
Normal	35.6 (34.5-36.7)	35.3 (34.2-36.5)	34.3 (33.3-35.4)	34.0 (32.9-35.1)	32.7 (31.6-33.8)	30.3 (29.3-31.4)	31.6 (30.2-32.3)	30.6 (29.5-31.6)	29.9 (28.8-30.9)	29.8 (28.7-30.8)	↓	
Underweight	1.5 (1.3-1.7)	1.4 (1.1-1.6)	1.5 (1.3-1.7)	1.2 (1.0-1.4)	1.2 (1.0-1.4)	1.0 (0.8-1.2)	1.2 (1.0-1.4)	1.1 (0.9-1.3)	1.3 (1.1-1.5)	1.1 (0.9-1.3)	↓	
<b>Smoking status (n)</b>	<b>12,692</b>	<b>12,613</b>	<b>13,016</b>	<b>12,257</b>	<b>12,335</b>	<b>13,841</b>	<b>12,260</b>	<b>12,600</b>	<b>12,777</b>	<b>12,518</b>	..	
Daily	21.0 (20.0-22.0)	21.2 (20.2-22.3)	20.7 (19.7-21.8)	19.4 (18.3-20.5)	19.8 (18.8-20.8)	18.1 (17.2-19.0)	18.1 (17.1-19.1)	17.8 (16.9-18.7)	18.0 (17.1-19.0)	17.6 (16.6-18.6)	↓	
Occasional	4.5 (4.0-4.9)	4.3 (3.9-4.7)	4.1 (3.7-4.6)	3.8 (3.4-4.2)	3.3 (2.9-3.7)	3.0 (2.6-3.4)	3.1 (2.8-3.5)	3.1 (2.7-3.5)	2.9 (2.6-3.3)	3.2 (2.8-3.6)	↓	
Previous	37.3 (36.2-38.5)	36.5 (35.3-37.6)	35.7 (34.5-36.9)	37.1 (35.8-38.4)	36.5 (35.3-37.7)	37.9 (36.8-39.1)	36.9 (35.8-38.1)	36.8 (35.6-38.0)	36.3 (35.1-37.4)	36.6 (35.4-37.8)	—	
Never	37.2 (36.0-38.4)	38.0 (36.8-39.2)	39.5 (38.2-40.7)	39.7 (38.5-41.0)	40.4 (39.2-41.6)	41.0 (39.8-42.2)	41.8 (40.6-43.0)	42.3 (41.1-43.5)	42.8 (41.6-44.0)	42.6 (41.4-43.8)	↑	
<b>Alcohol consumption (n)</b>	<b>12,334</b>	<b>12,294</b>	<b>12,792</b>	<b>12,005</b>	<b>12,071</b>	<b>13,583</b>	<b>11,974</b>	<b>12,321</b>	<b>12,572</b>	<b>12,274</b>	..	
At-risk alcohol level	33.1 (31.9-34.3)	32.6 (31.3-33.8)	31.6 (30.3-32.8)	32.5 (31.2-33.8)	31.7 (30.5-32.9)	30.1 (28.9-31.2)	31.6 (30.4-32.8)	30.0 (28.8-31.2)	29.3 (28.1-30.5)	29.3 (28.2-30.5)	↓	
Responsible drinker	47.3 (46.1-48.5)	47.7 (46.4-48.9)	47.9 (46.7-49.1)	48.0 (46.7-49.2)	47.6 (46.4-48.8)	48.9 (47.8-50.1)	47.6 (46.4-48.8)	47.7 (46.5-48.9)	46.7 (45.5-48.0)	47.6 (46.4-48.8)	—	
Non-drinker	19.6 (18.5-20.7)	19.8 (18.7-20.9)	20.5 (19.4-21.6)	19.5 (18.5-20.6)	20.7 (19.6-21.8)	21.0 (20.0-22.0)	20.8 (19.7-21.9)	22.3 (21.2-23.5)	24.0 (22.8-25.2)	23.1 (22.0-24.2)	↑	

(continued)

Table 13.2 (continued): Patient risk factors among adult males, 2003–04 to 2012–13

Risk factor	Per cent (95% CI)											↑ ↓ <sup>(a)</sup>
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13		
<b>Adult males (aged 18 years and over)</b>												
<b>Number of risk factors<sup>(b)</sup> (n)</b>	<b>11,999</b>	<b>11,900</b>	<b>12,572</b>	<b>11,662</b>	<b>11,784</b>	<b>13,228</b>	<b>11,613</b>	<b>11,955</b>	<b>12,252</b>	<b>11,827</b>		..
Zero	21.1 (20.2–22.1)	20.7 (19.8–21.6)	21.1 (20.1–22.0)	20.3 (19.4–21.2)	20.2 (19.2–21.1)	19.0 (18.1–19.8)	19.6 (18.7–20.5)	19.2 (18.3–20.0)	18.9 (18.0–19.8)	18.9 (18.0–19.8)		↓
One	46.9 (45.9–47.9)	47.0 (46.0–48.1)	47.3 (46.3–48.3)	48.0 (47.0–49.1)	48.0 (47.0–49.0)	50.5 (49.6–51.5)	49.0 (48.0–50.0)	50.9 (49.8–51.9)	51.5 (50.4–52.5)	51.3 (50.2–52.3)		↑
Two	25.9 (24.9–26.8)	26.7 (25.7–27.6)	25.7 (24.8–26.7)	26.2 (25.2–27.2)	25.9 (24.9–26.9)	25.0 (24.1–25.9)	25.8 (24.9–26.8)	24.7 (23.7–25.6)	24.3 (23.3–25.2)	24.5 (23.5–25.4)		–
Three	6.1 (5.6–6.6)	5.6 (5.1–6.1)	5.9 (5.5–6.4)	5.5 (5.0–6.0)	5.9 (5.4–6.4)	5.5 (5.0–5.9)	5.6 (5.1–6.1)	5.3 (4.9–5.8)	5.4 (4.9–5.8)	5.3 (4.9–5.8)		–
<b>Male children (aged 2–17 years)<sup>(b)</sup> (n)</b>	<b>1,485</b>	<b>1,451</b>	<b>1,640</b>	<b>1,509</b>	<b>1,484</b>	<b>1,415</b>	<b>1,499</b>	<b>1,450</b>	<b>1,487</b>	<b>1,451</b>		..
Obese	13.7 (11.8–15.6)	10.8 (9.1–12.6)	11.6 (9.9–13.3)	11.6 (9.8–13.4)	11.9 (10.1–13.7)	10.3 (8.6–11.9)	10.5 (8.9–12.2)	11.2 (9.4–12.9)	11.8 (10.0–13.7)	10.1 (8.4–11.7)		↓
Overweight	20.3 (18.2–22.4)	17.4 (15.3–19.4)	17.1 (15.3–19.0)	19.7 (17.7–21.7)	17.3 (15.4–19.3)	18.2 (16.1–20.4)	17.4 (15.3–19.5)	17.4 (15.4–19.5)	17.8 (15.7–19.8)	17.4 (15.4–19.4)		–
Normal	56.0 (53.4–58.6)	60.4 (57.7–63.1)	60.3 (57.8–62.8)	58.8 (56.2–61.4)	61.1 (58.5–63.5)	62.0 (59.3–64.7)	62.2 (59.6–64.9)	62.4 (59.7–65.2)	60.1 (57.4–62.9)	61.8 (59.2–64.4)		↑
Underweight	9.9 (8.3–11.5)	11.4 (9.7–13.2)	11.0 (9.3–12.6)	9.9 (8.4–11.5)	9.6 (8.0–11.3)	9.5 (8.0–11.1)	9.8 (8.2–11.4)	9.0 (7.4–10.6)	10.3 (8.6–12.0)	10.7 (8.9–12.4)		–

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; – indicates there was no significant change in 2012–13 compared with 2003–04.

(b) Adult patients aged 18 years and over with a recorded height outside the Australian Bureau of Statistics height range based on age and sex were excluded.

(c) The risk factors for an adult included being: overweight or obese, a daily smoker or an at-risk drinker.

(d) Children (aged 2–17 years) with height outside the Australian Bureau of Statistics or Centres for Disease Control, height range based on age and sex were excluded. Child BMI was re-calculated for 2003–04 to 2005–06, and will differ from data previously published to incorporate this exclusion and to apply a more precise method for calculating child BMI.

Note: CI – confidence interval; (n) – number.

Table 13.3: Patient risk factors among adult females, 2003–04 to 2012–13

Risk factor	Per cent (95% CI)												↑ <sup>(a)</sup> ↓
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13			
<b>Body mass index class<sup>(b)</sup> (n)</b>	<b>19,214</b>	<b>17,976</b>	<b>19,976</b>	<b>19,410</b>	<b>18,703</b>	<b>19,671</b>	<b>19,735</b>	<b>18,741</b>	<b>19,605</b>	<b>19,064</b>	..	..	..
Obese	23.0 (22.1–23.8)	23.2 (22.4–24.1)	22.6 (21.7–23.4)	24.2 (23.3–25.1)	24.3 (23.5–25.2)	25.6 (24.8–26.4)	26.2 (25.3–27.0)	27.2 (26.3–28.1)	26.7 (25.8–27.5)	26.6 (25.7–27.5)	26.6 (25.7–27.5)	↑	↑
Overweight	29.4 (28.6–30.1)	29.3 (28.6–30.1)	29.3 (28.6–30.0)	30.1 (29.4–30.9)	30.4 (29.7–31.2)	30.9 (30.2–31.6)	29.6 (28.9–30.3)	30.3 (29.6–31.0)	30.2 (29.5–30.9)	29.5 (28.8–30.2)	29.5 (28.8–30.2)	–	–
Normal	44.1 (43.1–45.1)	43.8 (42.7–44.8)	44.6 (43.6–45.6)	42.2 (41.2–43.2)	41.9 (40.9–43.0)	40.0 (39.1–41.0)	41.1 (40.1–42.0)	39.3 (38.3–40.3)	40.2 (39.3–41.2)	40.4 (39.4–41.4)	40.4 (39.4–41.4)	↓	↓
Underweight	3.6 (3.3–3.9)	3.6 (3.3–4.0)	3.5 (3.2–3.8)	3.5 (3.2–3.8)	3.3 (3.0–3.6)	3.4 (3.2–3.7)	3.2 (2.9–3.5)	3.2 (2.9–3.5)	2.9 (2.6–3.1)	3.5 (3.2–3.8)	3.5 (3.2–3.8)	–	–
<b>Smoking status (n)</b>	<b>19,780</b>	<b>18,468</b>	<b>20,288</b>	<b>18,718</b>	<b>19,081</b>	<b>20,079</b>	<b>20,224</b>	<b>19,301</b>	<b>20,060</b>	<b>19,758</b>	..	..	..
Daily	15.4 (14.6–16.1)	15.7 (15.0–16.5)	14.7 (14.0–15.4)	14.0 (13.3–14.8)	14.4 (13.7–15.2)	13.3 (12.6–14.0)	13.3 (12.6–14.0)	12.9 (12.2–13.6)	12.6 (11.8–13.3)	12.4 (11.7–13.0)	12.4 (11.7–13.0)	↓	↓
Occasional	4.2 (3.9–4.6)	3.3 (3.0–3.7)	3.3 (3.0–3.6)	2.7 (2.5–3.0)	2.6 (2.4–2.9)	2.4 (2.2–2.7)	2.4 (2.2–2.7)	2.4 (2.2–2.7)	2.2 (2.0–2.4)	2.1 (1.9–2.4)	2.1 (1.9–2.4)	↓	↓
Previous	22.0 (21.2–22.8)	22.2 (21.3–23.0)	21.5 (20.7–22.3)	23.3 (22.5–24.2)	22.3 (21.4–23.1)	22.5 (21.7–23.3)	22.8 (22.0–23.7)	22.7 (21.8–23.5)	22.6 (21.8–23.5)	22.1 (21.3–22.9)	22.1 (21.3–22.9)	–	–
Never	58.4 (57.3–59.5)	58.8 (57.7–59.9)	60.5 (59.5–61.6)	59.9 (58.8–61.0)	60.7 (59.6–61.7)	61.7 (60.7–62.7)	61.5 (60.4–62.5)	62.1 (61.0–63.1)	62.6 (61.6–63.7)	63.4 (62.4–64.5)	63.4 (62.4–64.5)	↑	↑
<b>Alcohol consumption (n)</b>	<b>19,387</b>	<b>18,120</b>	<b>19,961</b>	<b>18,342</b>	<b>18,715</b>	<b>19,764</b>	<b>19,979</b>	<b>18,869</b>	<b>19,685</b>	<b>19,366</b>	..	..	..
At-risk alcohol level	22.6 (21.7–23.6)	22.2 (21.3–23.2)	22.2 (21.3–23.2)	23.5 (22.5–24.5)	22.6 (21.6–23.6)	21.8 (20.8–22.7)	23.4 (22.5–24.4)	21.4 (20.5–22.3)	21.5 (20.6–22.5)	20.8 (19.9–21.7)	20.8 (19.9–21.7)	↓	↓
Responsible drinker	43.5 (42.4–44.5)	43.0 (41.9–44.0)	42.8 (41.8–43.9)	42.4 (41.3–43.5)	42.6 (41.6–43.7)	42.6 (41.6–43.7)	42.5 (41.5–43.6)	41.5 (40.4–42.6)	41.8 (40.8–42.8)	42.1 (41.0–43.1)	42.1 (41.0–43.1)	–	–
Non-drinker	33.9 (32.7–35.2)	34.8 (33.4–36.2)	35.0 (33.6–36.3)	34.1 (32.8–35.4)	34.8 (33.5–36.1)	35.6 (34.3–36.9)	34.0 (32.8–35.3)	37.1 (35.7–38.5)	36.7 (35.3–38.0)	37.2 (35.9–38.5)	37.2 (35.9–38.5)	↑	↑

(continued)



**Table 13.3 (continued): Patient risk factors among adult females, 2003–04 to 2012–13**

Risk factor	Per cent (95% CI)											↑ ↓ <sup>(a)</sup>
	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13		
<b>Adult females (aged 18 years and over)</b>												
<b>Number of risk factors<sup>(b)</sup> (n)</b>	<b>18,714</b>	<b>17,518</b>	<b>19,504</b>	<b>17,724</b>	<b>18,218</b>	<b>19,204</b>	<b>19,182</b>	<b>18,222</b>	<b>19,149</b>	<b>18,518</b>		..
Zero	31.2 (30.2–32.2)	31.2 (30.2–32.2)	31.7 (30.7–32.7)	29.8 (28.8–30.7)	29.9 (28.9–30.8)	29.1 (28.1–30.0)	29.5 (28.6–30.4)	28.8 (27.9–29.7)	29.5 (28.6–30.5)	30.2 (29.3–31.2)		—
One	50.4 (49.5–51.2)	50.1 (49.2–50.9)	50.4 (49.5–51.2)	51.0 (50.1–51.9)	51.4 (50.6–52.3)	52.7 (51.8–53.5)	51.2 (50.3–52.0)	53.1 (52.2–53.9)	52.5 (51.7–53.4)	52.5 (51.6–53.3)		↑
Two	15.9 (15.2–16.5)	15.9 (15.3–16.6)	15.4 (14.7–16.0)	16.6 (15.9–17.3)	15.8 (15.2–16.5)	15.6 (15.0–16.3)	16.6 (15.9–17.2)	15.5 (14.8–16.2)	15.5 (14.8–16.1)	15.1 (14.5–15.8)		—
Three	2.6 (2.3–2.9)	2.8 (2.6–3.1)	2.6 (2.3–2.8)	2.6 (2.3–2.9)	2.9 (2.6–3.2)	2.6 (2.4–2.9)	2.8 (2.5–3.0)	2.6 (2.3–2.9)	2.5 (2.2–2.8)	2.2 (1.9–2.4)		—
<b>Female children (aged 2–17 years)<sup>(b)</sup> (n)</b>	<b>1,704</b>	<b>1,567</b>	<b>1,698</b>	<b>1,578</b>	<b>1,562</b>	<b>1,555</b>	<b>1,684</b>	<b>1,558</b>	<b>1,606</b>	<b>1,618</b>		..
Obese	10.2 (8.6–11.8)	10.8 (9.1–12.6)	10.3 (8.7–11.8)	9.6 (8.1–11.2)	10.6 (8.9–12.2)	10.7 (9.1–12.3)	8.7 (7.3–10.2)	10.1 (8.4–11.8)	10.5 (8.8–12.1)	8.1 (6.7–9.5)		—
Overweight	18.2 (16.4–20.0)	17.9 (16.1–19.8)	18.6 (16.7–20.5)	17.5 (15.6–19.4)	16.8 (14.9–18.8)	15.4 (13.5–17.2)	18.6 (16.6–20.5)	17.8 (15.9–19.7)	17.4 (15.6–19.3)	17.2 (15.3–19.2)		—
Normal	59.4 (57.0–61.9)	60.8 (58.3–63.3)	61.1 (58.8–63.5)	63.4 (60.9–66.0)	62.2 (59.6–64.7)	63.7 (61.1–66.2)	62.3 (59.8–64.8)	61.3 (58.8–63.8)	60.5 (58.0–63.1)	63.2 (60.6–65.7)		↑
Underweight	12.2 (10.6–13.9)	10.4 (8.9–11.9)	10.0 (8.5–11.6)	9.4 (7.9–11.0)	10.4 (8.8–12.1)	10.3 (8.7–11.9)	10.4 (8.7–12.0)	10.7 (9.1–12.3)	11.6 (9.9–13.3)	11.5 (9.9–13.1)		—

(a) The direction and type of change from 2003–04 to 2012–13 is indicated for each result: ↑/↓ indicates a statistically significant change (increase or decrease) in 2012–13 compared with 2003–04; ↑/↓ indicates a marginally significant change in 2012–13 compared with 2003–04; — indicates there was no significant change in 2012–13 compared with 2003–04.

(b) Adult patients aged 18 years and over with a recorded height outside the Australian Bureau of Statistics height range based on age and sex were excluded.

(c) The risk factors for an adult included being: overweight or obese, a daily smoker or an at-risk drinker.

(d) Children (aged 2–17 years) with height outside the Australian Bureau of Statistics or Centres for Disease Control, height range based on age and sex were excluded. Child BMI was re-calculated for 2003–04 to 2005–06, and will differ from data previously published to incorporate this exclusion and to apply a more precise method for calculating child BMI.

Note: CI – confidence interval; (n) – number.

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# Abbreviations

ACRRM	Australian College of Rural and Remote Medicine
AHW	Aboriginal health worker
AIHW	Australian Institute of Health and Welfare
ASGC	Australian Standard Geographical Classification
ATC	Anatomical Therapeutic Chemical (classification)
BEACH	Bettering the Evaluation and Care of Health
BMI	body mass index
CAPS	Coding Atlas for Pharmaceutical Substances
CI	confidence interval (in this report 95% CI is used)
CT	computerised tomography
DoHA	Australian Government Department of Health and Ageing
DVA	Australian Government Department of Veterans' Affairs
FACRRM	Fellow of the Australian College of Rural and Remote Medicine
FMRC	Family Medicine Research Centre
FRACGP	Fellow of the Royal Australian College of General Practitioners
FTE	full-time equivalent
GP	general practitioner
HbA1c	haemoglobin, type A1c
ICPC-2	International Classification of Primary Care – Version 2
ICPC-2 PLUS	a terminology classified according to ICPC-2
INR	international normalised ratio
LCL	lower confidence limit
MBS	Medicare Benefits Schedule
OTC	over-the-counter (medications advised for over-the-counter purchase)
PBS	Pharmaceutical Benefits Scheme
PN	Practice nurse
RACGP	Royal Australian College of General Practitioners
RFE	reason for encounter
RRMA	Rural, Remote and Metropolitan Area classification
SAND	Supplementary Analysis of Nominated Data
SAS	Statistical Analysis System
UCL	upper confidence limit

URTI	upper respiratory tract infection
WHO	World Health Organization
Wonca	World Organization of Family Doctors

## Symbols

..	intentionally left blank
<	less than
>	more than
<i>n</i>	number
N/A	not applicable
NAv	not available
NEC	not elsewhere classified
NOS	not otherwise specified
↑	indicates a statistically significant increase in 2012–03 when compared with the first year of data reported
↓	indicates a statistically significant decrease in 2012–03 when compared with the first year of data reported
↑	indicates a marginally significant increase in 2012–03 when compared with the first year of data reported
↓	indicates a marginally significant decrease in 2012–03 when compared with the first year of data reported
§	indicates a noteworthy change during the decade
—	indicates no significant change in 2012–03 when compared with the first year of data reported



# Glossary

*A1 Medicare items:* see *MBS/DVA items: A1 Medicare items.*

*Aboriginal:* The patient identifies himself or herself as an Aboriginal person.

*Activity level:* The number of general practice A1 Medicare items claimed during the previous 3 months by a participating GP.

*Allied health services:* Clinical and other specialised health services provided in the management of patients by allied and other health professionals including physiotherapists, occupational therapists, dietitians, dentists and pharmacists.

*Chapters (ICPC-2):* The main divisions within ICPC-2. There are 17 chapters primarily representing the body systems.

*Chronic problem:* see *Diagnosis/problem: Chronic problem.*

*Commonwealth concession card:* An entitlement card provided by the Australian Government, which entitles the holder to reduced-cost medicines under the Pharmaceutical Benefits Scheme and some other concessions from state and local government authorities.

*Complaint:* A symptom or disorder expressed by the patient when seeking care.

*Component (ICPC-2):* In ICPC-2 there are seven components that act as a second axis across all chapters.

*Consultation:* See *Encounter.*

*Diagnosis/problem:* A statement of the provider's understanding of a health problem presented by a patient, family or community. GPs are instructed to record at the most specific level possible from the information available at the time. It may be limited to the level of symptoms.

- *New problem:* The first presentation of a problem, including the first presentation of a recurrence of a previously resolved problem, but excluding the presentation of a problem first assessed by another provider.
- *Old problem:* A previously assessed problem that requires ongoing care, including follow-up for a problem or an initial presentation of a problem previously assessed by another provider.
- *Chronic problem:* A medical condition characterised by a combination of the following characteristics: duration that has lasted, or is expected to last, 6 months or more, a pattern of recurrence or deterioration, a poor prognosis, and consequences or sequelae that impact on an individual's quality of life. (Source: O'Halloran J, Miller GC, Britt H 2004. *Defining chronic conditions for primary care with ICPC-2.* Fam Pract 21(4):381-6).
- *Work-related problem:* Irrespective of the source of payment for the encounter, it is likely in the GP's view that the problem has resulted from work-related activity or workplace exposure, or that a pre-existing condition has been significantly exacerbated by work activity or workplace exposure.

*Encounter (enc)*: Any professional interchange between a patient and a GP.

- *Indirect*: Encounter where there is no face-to-face meeting between the patient and the GP but a service is provided (for example, prescription, referral).
- *Direct*: Encounter where there is a face-to-face meeting of the patient and the GP.

Direct encounters can be further divided into:

- *MBS/DVA-claimable*: Encounters for which GPs have recorded at least one MBS item number as claimable, where the conditions of use of the item require that the patient be present at the encounter.
- *Workers compensation*: Encounters paid by workers compensation insurance.
- *Other paid*: Encounters paid from another source (for example, state).

*General practitioner (GP)*: A medical practitioner who provides primary comprehensive and continuing care to patients and their families within the community (Royal Australian College of General Practitioners).

*Generic medication*: see *Medication: Generic*

*GP consultation service items*: Includes GP services provided under the MBS professional services category including MBS items classed as A1, A2, A5, A6, A7, A14, A17, A18, A19, A20, A22 and selected items provided by GPs classified in A11, A15 and A27.

*GP consultation service items*: see *MBS/DVA items: GP consultation service items*.

*MBS/DVA items*: MBS item numbers recorded as claimable for activities undertaken by GPs and staff under the supervision of GPs. In BEACH an MBS item number may be funded by Medicare or by the Department of Veterans' Affairs (DVA).

- *A1 Medicare items*: Medicare item numbers 1, 2, 3, 4, 13, 19, 20, 23, 24, 25, 33, 35, 36, 37, 38, 40, 43, 44, 47, 48, 50, 51, 601, 602.
- *GP consultation service items*: Includes GP services provided under the MBS professional services category including MBS items classed as A1, A2, A5, A6, A7, A14, A17, A18, A19, A20, A22 and selected items provided by GPs classified in A11, A15 and A27.
- *MBS/DVA item categories*: (Note: item numbers recorded in BEACH in earlier years which are no longer valid are mapped to the current MBS groups)
  - *Surgery consultations*: Identified by any of the following item numbers: short 3, 52, 5000, 5200; standard 23, 53, 5020, 5203; long 36, 54, 2143, 5040; prolonged 44, 57, 2195, 5060, 5208.
  - *Residential aged care facility*: Identified by any of the following item numbers: 20, 35, 43, 51, 92, 93, 95, 96, 5010, 5028, 5049, 5067, 5260, 5263, 5265, 5267.
  - *Home or institution visits (excluding residential aged care facilities)*: Identified by any of the following item numbers: 4, 19, 24, 33, 37, 40, 47, 50, 58, 59, 60, 65, 87, 89, 90, 91, 503, 507, 5003, 5023, 5043, 5063, 5220, 5223, 5227, 5228.
  - *GP mental health care*: Identified by any of the following item numbers: 2700, 2701, 2702, 2704, 2705, 2710, 2712, 2713, 2715, 2717, 2721, 2723, 2725.
  - *Chronic disease management items*: Identified by any of the following item numbers: 720, 721, 722, 723, 724, 725, 726, 727, 729, 730, 731, 732.
  - *Health assessments*: Identified by any of the following item numbers: 700, 702, 703, 704, 705, 706, 707, 708, 709, 710, 712, 713, 714, 715, 717, 718, 719.
  - *Case conferences*: Identified by any of the following item numbers: 139, 734, 735, 736, 738, 739, 740, 742, 743, 744, 747, 750, 762, 765, 771, 773, 775, 778.

- *Attendances associated with Practice Incentives Program payments:* Identified by any of the following item numbers: 2497, 2501, 2503, 2504, 2506, 2507, 2509, 2517, 2518, 2521, 2522, 2525, 2526, 2546, 2547, 2552, 2553, 2558, 2559, 2574, 2575, 2577, 2598, 2600, 2603, 2606, 2610, 2613, 2616, 2620, 2622, 2624, 2631, 2633, 2635, 2664, 2666, 2668, 2673, 2675, 2677, 2704, 2705.
- *Practice nurse/Aboriginal health worker/allied health worker services:* Identified by any of the following item numbers: 711, 10950, 10951, 10960, 10966, 10970, 10986, 10987, 10988, 10989, 10993, 10994, 10995, 10996, 10997, 10998, 10999, 16400, 82210.
- *Acupuncture:* Identified by any of the following item numbers: 173, 193, 195, 197, 199.
- *Diagnostic procedures and investigations:* Identified by item numbers: 11000–12533.
- *Therapeutic procedures:* Identified by item numbers: 13206–23042 (excluding 16400).
- *Surgical operations:* Identified by item numbers: 30001–52036.
- *Diagnostic imaging services:* Identified by item numbers: 55037–63000.
- *Pathology services:* Identified by item numbers: 65120–74991.

*Medication:*

- *Generic:* The generic name of a medication is its non-proprietary name, which describes the pharmaceutical substance(s) or active pharmaceutical ingredient(s).
- *GP-supplied:* The medication is provided directly to the patient by the GP at the encounter.
- *Over-the-counter (OTC):* Medication that the GP advises the patient to purchase OTC (a prescription is not required for the patient to obtain an OTC medication).
- *Prescribed:* Medications that are prescribed by the GP (that is, does not include medications that were GP-supplied or advised for over-the-counter purchase).

*Medication status:*

- *New:* The medication prescribed/provided at the encounter/advised is being used for the management of the problem for the first time.
- *Continued:* The medication prescribed/provided at the encounter/advised is a continuation or repeat of previous therapy for this problem.
- *Old:* See *Continued*.

*Morbidity:* Any departure, subjective or objective, from a state of physiological wellbeing. In this sense, sickness, illness and morbid conditions are synonymous.

*Patient status:* The status of the patient to the practice.

- *New patient:* The patient has not been seen before in the practice.
- *Patient seen previously:* The patient has attended the practice before.

*Problem managed:* See *Diagnosis/problem*.

*Provider:* A person to whom a patient has access when contacting the healthcare system.

*Reasons for encounter (RFEs):* The subjective reasons given by the patient for seeing or contacting the general practitioner. These can be expressed in terms of symptoms, diagnoses or the need for a service.

*Recognised GP:* A medical practitioner who is:

- vocationally recognised under Section 3F of the *Health Insurance Act*, or
- a holder of the Fellowship of the Royal Australian College of General Practitioners who participates in, and meets the requirements for, quality assurance and continuing medical education as defined in the Royal Australian College of General Practitioners (RACGP) Quality Assurance and Continuing Medical Education Program, or
- undertaking an approved placement in general practice as part of a training program for general practice leading to the award of the Fellowship of the Royal Australian College of General Practitioners, or undertaking an approved placement in general practice as part of some other training program recognised by the RACGP as being of equivalent standard. (Source: Commonwealth Department of Health and Aged Care 2001. *Medicare Benefits Schedule book*. Canberra: DHAC).

*Referral:* The process by which the responsibility for part, or all, of the care of a patient is temporarily transferred to another health care provider. Only new referrals to specialists and allied health services, and for hospital and residential aged care facility admissions arising at a recorded encounter are included. Continuation referrals are not included. Multiple referrals can be recorded at any one encounter.

*Repatriation Health Card:* An entitlement card provided by the Department of Veterans' Affairs that entitles the holder to access a range of repatriation health care benefits, including access to prescription and other medications under the Pharmaceutical Benefits Scheme.

*Rubric:* The title of an individual code in ICPC-2.

*Significant:* This term is used to refer to a statistically significant result. Statistical significance is measured at the 95% confidence level in this report.

*Torres Strait Islander:* The patient identifies himself or herself as a Torres Strait Islander person.

*Work-related problem:* See *Diagnosis/problem*.

# Appendices

## Appendix 1: Example of a 2012–13 recording form

Encounter Number	Date of encounter	Date of Birth	Sex	Patient Postcode	New Patient <input type="checkbox"/> Health Care/Benefits Card <input type="checkbox"/> Veterans Affairs Card <input type="checkbox"/> NESB <input type="checkbox"/> Aboriginal <input type="checkbox"/> Torres Strait Islander <input type="checkbox"/>	PATELNT SEEN BY GP <input type="checkbox"/> PATELNT NOT SEEN BY GP <input type="checkbox"/> Medicare Item Nos: (if applicable) 1. _____ Home visit <input type="checkbox"/> 2. _____ Workers comp paid <input type="checkbox"/> 3. _____ Other paid <input type="checkbox"/> No charge <input type="checkbox"/>
START Time	1. _____ 2. _____ 3. _____	Patient Reasons for Encounter				
Diagnosis/ Problem ①:	Problem Status		Diagnosis/ Problem ②:		Problem Status	
Drug Name AND Form for this problem	Frequency	No. of Rpts	Dose	Strength of product	OTC	Drug status
1. _____						New <input type="checkbox"/> Old <input type="checkbox"/> related <input type="checkbox"/>
2. _____						
3. _____						
4. _____						
Procedures, other treatments, counselling this consult for this problem	Prac Nurse? <input type="checkbox"/> 2. _____		Prac Nurse? <input type="checkbox"/>			
Diagnosis/ Problem ③:	Problem Status		Diagnosis/ Problem ④:		Problem Status	
Drug Name AND Form for this problem	Frequency	No. of Rpts	Dose	Strength of product	OTC	Drug status
1. _____						New <input type="checkbox"/> Old <input type="checkbox"/> related <input type="checkbox"/>
2. _____						
3. _____						
4. _____						
Procedures, other treatments, counselling this consult for this problem	Prac Nurse? <input type="checkbox"/> 2. _____		Prac Nurse? <input type="checkbox"/>			
NEW REFERRALS, ADMISSIONS	IMAGING/Other tests		PATHOLOGY		PATHOLOGY (cont)	
1. _____	Body site	Problem(s)	1	2	3	4
2. _____			1	2	3	4
3. _____			1	2	3	4
To the patient if 18+:	To the patient if 18+:		To the patient if 18+:		To the patient if 18+:	
Which best describes your smoking status?	How often do you have a drink containing alcohol?		How many 'standard' drinks do you have on a typical day when you are drinking?		Have you spent non-billable time on the management of any of this patient's problems between today's visit and their last visit?	
Smoke daily <input type="checkbox"/>	Never <input type="checkbox"/>		Less than monthly <input type="checkbox"/>		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Smoke occasionally <input type="checkbox"/>	Monthly or less <input type="checkbox"/>		Monthly <input type="checkbox"/>		If 'yes', approx how many minutes? _____	
Previous smoker <input type="checkbox"/>	Once a week/fortnight <input type="checkbox"/>		Weekly <input type="checkbox"/>		Unsure <input type="checkbox"/> of time	
Never smoked <input type="checkbox"/>	2-3 times a week <input type="checkbox"/>		Daily or almost daily <input type="checkbox"/>		Reason: _____	
Smoke <input type="checkbox"/>	4+ times a week <input type="checkbox"/>				FINISH Time	
Height: (in cm)	Weight: (in kg)				AM / PM (please circle)	

## **Appendix 2: GP characteristics questionnaire, 2012–13**



Doctor Identification Number [ ][ ][ ][ ][ ]

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Please fill in boxes or circle answers

- 1. Sex Male / Female (Please circle)
2. Age
3. How many years have you spent in general practice?
4. Country of graduation (primary medical degree):
5. How many direct patient care hours do you work per week?
6. In terms of providing direct patient care, is it likely in 5 years time that you will have:
7. Are you a GP registrar (i.e. in training)?
8. Do you hold FRACGP?
9. Do you hold FACRRM?
10. Is a computer available at your major practice?
11. Do YOU use the computer at your major practice?
12. Over the past four weeks have you provided any patient care...

- 13. How many practice locations do you usually work at in a regular week?
14. Postcode of major practice address
15. For your major practice, please specify the number of individuals (ie. headcount) and number of full time equivalents (FTE\*) for each type of professional:
16. Are any of the following health services located or available at your major practice?
17. What are the normal after-hours arrangements for your major practice?

Thank you for participating in the BEACH PROGRAM. Please return this form with the completed BEACH pad.



# Appendix 3: Patient information card, 2012–13



Family Medicine Research Centre



## INFORMATION FOR PATIENTS

### The *BEACH*® Project

Today your doctor is taking part in a National Survey of general practice called *BEACH*® (*Bettering the Evaluation and Care of Health*). This study is being done by the Family Medicine Research Centre, University of Sydney.

Your Doctor will be recording information about each patient he/she sees (age, gender etc), the problems that you see the Doctor about and the treatments given to you. **There are no names on the forms so you cannot be identified.** The information about today's visit to the doctor will be one record in a set of 100,000 records collected in general practices across Australia every year.

This information will be used by researchers to describe what happens in general practice and to look at different aspects of health care; by government departments to help them plan for our future health; and by pharmaceutical companies to gain a picture of the problems being treated with the drugs they produce.

**Remember: your name will not be on the form and no information will ever be released which could possibly let anyone know who you are.** However, if you do not wish your doctor to record any unidentified information about you or your visit **please tell your Doctor as soon as you go in.** Such a decision will not affect the consultation with your doctor in any way.

**SEE OVER FOR PROJECT DETAILS**

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## BEACH<sup>®</sup> Program Details

This program has been approved by the Ethics Committee of the University of Sydney. The data are being collected in accordance with the Privacy Act 1988 as amended.

### Organisations contributing financially to the conduct of this study in 2012–2013 are:

- ◆ The Australian Government Department of Health and Ageing
- ◆ AstraZeneca Pty Ltd (Australia)      ◆ Pfizer Australia Pty Ltd
- ◆ CSL Biotherapies Pty Ltd
- ◆ GlaxoSmithKline Australia Pty Ltd
- ◆ Merck Sharp & Dohme (Australia) Pty Ltd
- ◆ Novartis Pharmaceuticals Australia Pty Ltd

BEACH is endorsed  
by  
the Royal Australian College  
of General Practitioners



BEACH is endorsed  
by  
the Australian Medical Association



### FURTHER INFORMATION:

Family Medicine Research Centre  
The University of Sydney  
Acacia House, Westmead Hospital  
Westmead 2145

Phone: (02) 9845 8151  
Fax: (02) 9845 8155  
Email: [jan.charles@sydney.edu.au](mailto:jan.charles@sydney.edu.au)  
Web:  
<http://sydney.edu.au/medicine/fmrc/>

Any person with concerns or complaints about the conduct of this research study can contact The Manager, Human Ethics Administration, University of Sydney on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile); [ro.humanethics@sydney.edu.au](mailto:ro.humanethics@sydney.edu.au) (Email).

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## **Appendix 4: Code groups from ICPC-2 and ICPC-2 PLUS**

Available at: < [purl.library.usyd.edu.au/sup/9781743323793](http://purl.library.usyd.edu.au/sup/9781743323793)>, see 'Electronic editions and downloads'.

Table A4.1: Code groups from ICPC-2 and ICPC-2 PLUS – reasons for encounter and problems managed

Table A4.2: Code groups from ICPC-2 and ICPC-2 PLUS – chronic problems

Table A4.3: Code groups from ICPC-2 and ICPC-2 PLUS – problems managed by practice nurses

Table A4.4: Code groups from ICPC-2 and ICPC-2 PLUS – clinical treatments

Table A4.5: Code groups from ICPC-2 and ICPC-2 PLUS – procedures

Table A4.6: Code groups from ICPC-2 and ICPC-2 PLUS – clinical measurements

Table A4.7: Code groups from ICPC-2 and ICPC-2 PLUS – referrals

Table A4.8: Code groups from ICPC-2 and ICPC-2 PLUS – pathology test orders (MBS groups)

Table A4.9: Code groups from ICPC-2 and ICPC-2 PLUS – imaging test orders (MBS groups)

This report highlights changes in general practice activity in Australia over the most recent decade (April 2003 to March 2013) of the BEACH program, a national cross-sectional study of general practice activity. Over this time 9,772 GPs provided details of 977,200 GP-patient encounters. The report highlights changes that have occurred over the decade in the characteristics of GPs and the patients they see, the problems managed, and the treatments provided. Changes in prevalence of overweight and obesity, smoking status and alcohol use are also described for subsamples of more than 30,000 adult patients each year.



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