

Male consultations in general practice in Australia 1999–00

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Male consultations in general practice in Australia 1999–00

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Foreword

This informative report benefits the cause of men's health in Australia by its very existence. Until relatively recently little attention has been paid to the specific issue of men's health, although gender has been referred to in some clinical contexts. Though the BEACH study was not specifically designed to examine encounters between general practitioners and male patients it provides an accurate picture of male morbidity and treatment in the wider context of all general practice encounters. The large sample of GPs involved and the random nature of their selection, together with the statistical techniques applied to the clustered encounter sample design ensure a robust, valid, reliable sample of GP encounters.

Clearly, general practitioners are in a position to contribute to the health of men in Australia, as they are the major health service providers for this particular population. Although the authors admit that men are not attending as much as one might hope, the report is to be welcomed for its acknowledgment that more should be done to help men of all ages access GP services.

The BEACH findings support the notion that men attend general practice less often than women. This is, in a sense, conventional wisdom, which may be partially due to women being more familiar with GP services due largely to the role ascribed to them to manage the health of the family. The report is to be commended for not speculating overmuch on why this is the case, since comments on this matter are generally based on assumptions rather than genuine evidence. The report allows us to examine this phenomenon in greater depth through empirical research to establish an evidence base for policies and practices.

It is difficult to single out one particular age group or subpopulation of males that requires special attention, because different age groups have different health concerns. Findings from this study highlight this – the rates of smoking, alcohol use and drug abuse in young adult males; work-related conditions in the middle ages; and the rates of obesity and the onset of chronic disease in the later years; are major concerns, especially when combined with low rates of GP attendance.

The report also highlights areas of concern about the mental health of males in the population. The rate of diagnosis of depression is lower among men than women, and especially low in men of retirement age. The provision of psychological counselling was also less common at encounters with males than at those with females. These facts suggest psychological problems may be under-managed in male patients, and that the management of men's mental health may need to be reviewed.

The report indirectly challenges the notion that men don't seek preventive medical advice – the need for a general check-up was a common reason reported by male patients for seeing the GP. The report suggests that at male patient contacts, GPs should perform opportunistic exploration of further health issues whenever possible. Currently efforts are being made to make health services and preventive health education more readily accessible to men, and this report can provide good baseline data for such initiatives.

Male Consultations in General Practice in Australia 1999–00 is to be highly commended for its call for increased awareness of areas of concern for men's health. It is clear that this report offers several challenges, both in terms of attracting men to GP services and in improving the effectiveness of the contact with the male population. As the authors say, it may also assist in the future planning of targeted health education and interventions for the male population.

I hope that more initiatives will be funded and will flourish in Australia and that GPs, as the first point of contact with the health system, will be helped in their task of contributing to the health of males.

Professor John Macdonald
Foundation Chair in Primary Health Care,
Director, Men's Health Information and Resource Centre (MHIRC)

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Summary

This report details findings from a secondary analysis of the data collected in the BEACH (Bettering the Evaluation and Care of Health) program, a continuous national study of general practice activity in Australia. The collection period reported is April 1999 to March 2000 inclusive. This secondary analysis was undertaken to determine the characteristics of male patients who attend general practitioners (GPs) and the characteristics of these encounters.

Method

A random sample of GPs who claimed at least 375 general practice Medicare items of service in the previous 3 months is regularly drawn from the Health Insurance Commission data by the General Practice Branch of the Department of Health and Aged Care. GPs are approached first by letter and then followed up by telephone recruitment. Each participating GP completes details about 100 consecutive patient encounters on structured paper encounter forms. The GPs also provide information about themselves and their practice.

In the 1999–00 BEACH data year a random sample of 1,047 GPs took part, providing data pertaining to 104,700 encounters. Results are reported in terms of GP and patient characteristics; patient reasons for encounter (RFEs); problems managed; medications and other treatments provided; and referrals and tests ordered. Patient-assessed health status and selected risk behaviours for subsamples of patients are also reported.

Two primary areas specific to male patients are investigated separately in this report. These are problems managed at encounters with male patients in each of the age groups 15–24, 25–34, 35–44, 45–54, 55–64, 65–74 and 75+ years; and work-related problems managed at encounters with male patients (irrespective of payment source).

The general practitioners

Males made up 69.6% of participating GPs, and those aged 45 years or older accounted for 59.1%. One in five participants was in solo practice and 26.7% had graduated in a country other than Australia. Almost one-third were Fellows of the Royal Australian College of General Practitioners (RACGP) and a further 2.2% were currently in the Training Program.

A comparison of characteristics of participating GPs with those of the GPs from the random sample who declined to participate found no significant differences between the groups with the exception of age group. Participants were significantly older and GPs aged less than 35 years were under-represented. The encounter data went through post-stratification weighting to overcome the difference and ensure that the BEACH data set was representative of Australian general practice. The weighting also incorporated the differential activity level of each GP to improve the national estimates.

The encounters

After post-stratification weighting for age (stratified by sex) and activity level, there were 104,856 encounters available for analysis. At 1,182 encounters patient sex was not recorded. There were 44,308 encounters with male patients and 59,366 encounters with female patients included in the analysis, derived from 1047 GPs. One of these GPs saw no male patients.

There were no differences between the proportion of direct (patient seen) or indirect encounters between the sexes. However, male patient encounters were less likely to be

claimable through Medicare, more likely to be claimable as standard consultations and less likely to be long consultations than female patient encounters. Male patients also had significantly more encounters claimable through workers compensation than female patients.

Although there were no sex-related differences in the number of RFEs reported at the encounter, males had significantly fewer problems managed at their encounters compared with females. Males were more likely than females to have had a problem managed that was judged by the GP to be work-related. Male patients also had higher rates of procedural treatments performed and lower rates of pathology orders than their female counterparts.

The patients

Patient characteristics

There were significant differences in the age distribution of male and female patients at GP encounters. Males were more likely to be aged 0–14 and 45–74 years, and less likely to be aged 15–44 and 75+ years, compared with females. However, there were fewer male patients in every age group from 15 years onward. Male patients were significantly less likely than female patients to hold a health care card and more likely to hold a Veterans' Affairs gold card.

Data from the Health Insurance Commission demonstrated that a lower proportion of Australian males (76%) attended a GP at least once in 2000–01 compared with Australian females (87%). When males did attend a GP, they did so at lower rates (average 5.1 services per annum) than females (6.2 services). These differences between the sexes were most significant between the ages of 15 and 54 years and over 75 years.

Patient reasons for encounters (RFEs)

Male patients presented significantly more RFEs related to the respiratory and musculoskeletal systems, the skin and the ear. RFEs relating to the neurological system and the genital and urinary systems were significantly less common at encounters with male patients. When the most common RFEs were examined, they showed minimal differences between the sexes, with males more likely to describe back complaints and general check-ups and less likely to report genital check-ups, compared with females.

Problems managed

Encounters with males were significantly more likely to have one problem managed and significantly less likely to have three problems managed than were encounters with females. Problems relating to the respiratory, musculoskeletal, circulatory and digestive systems and those associated with the skin and the ear were managed significantly more often at male encounters than at female encounters. Male patients had lower rates of management of problems relating to the neurological, genital and urological systems. Back complaints, diabetes, lipid disorders and general check-ups were more commonly managed at male encounters, while depression, genital check-ups and urinary tract infections were managed significantly less often at encounters with males than at those with females.

Multiple logistic regression analyses were performed to determine which variables (i.e. predictors), independent of other predictors, were related to patient sex at the encounter. After adjustment for these significant independent predictors, the differences identified in the univariate analysis of morbidity managed were not made insignificant or reversed. In the multivariate analyses, the significant differences were replicated and additional significant differences emerged. These new significant differences in problems managed were of a

general and unspecified nature, associated with the endocrine and metabolic system and related to the eye, which were managed more often at male encounters than female encounters. In contrast, social problems were managed less often at encounters with males than at those with females. Only one new significant difference in the most commonly managed morbidity emerged. Hypertension was found to be managed significantly less often at encounters with males.

Medications

Differences in the relative prescribing rate of medications types (by group, subgroup and generic name) mainly reflected differences found in the morbidities treated (Chapter 6). Males were more likely to have cardiovascular, respiratory and musculoskeletal medications prescribed and less likely to be prescribed medications from the psychological, hormone and urogenital groups. The analysis identified no differences in the prescription of generic medications between the sexes.

Other treatments

Other (non-pharmacological) treatments provided to patients were classified as either clinical or procedural. There was no overall difference between male and female encounters in the rates of clinical treatments. However, there was a specific clinical treatment (psychological counselling) that was performed less often at encounters with males than at those with females. There were significantly more procedures performed on male patients than female patients. This was reflected in the specific procedures of excision or removal of tissue (including destruction, debridement or cauterisation) and removal or repair of casts or prosthetic devices.

Referrals, tests and investigations

There were no significant differences in the overall rate of referrals or in rates of referral to specific medical specialties at male and female encounters.

The total pathology ordering rate and order rates for full blood counts, urine microscopy culture and sensitivity (MC&S) tests and thyroid function tests were significantly lower at encounters with male patients than at those with female patients.

There were no significant differences between the sexes in total ordering rates for imaging nor for any specific imaging test type.

Morbidity managed in specific male age groups

This section investigates the morbidities managed at encounters with males by ten-year age groups. In the younger age groups (15–34 years) the problems managed were mostly acute in nature, the most common being upper respiratory tract infection. Of particular interest in this age group was the relatively high rate of drug abuse managed (2.9 per 100 encounters). Heroin addiction accounted for more than 30% of these problems.

Between 35 and 44 years of age the most common problem managed was back complaint; other common problems managed were a mix of acute and chronic conditions. From 45 years onward, chronic conditions began to emerge as the most common problems managed. Hypertension was the most common condition managed in all age groups from 45 years onward.

The management of selected morbidities was also examined across age groups in this section to determine age-related changes. The management of depression showed the most interesting trend, with males aged 15–24 and 65+ years having the lowest management rates of depression despite these ages being associated with significant social life changes.

Patient wellbeing and health risk factors

- **Wellbeing:** Of the 12,465 male and 18,992 female respondents (aged 18+ years) less than 7% rated their health as poor. There was little difference between the sexes in self-reported health. However, male patients rated their health as 'very good' significantly less often than did female patients.
- **Body mass:** Responses were received from 13,062 male and 19,655 female patients aged 18 years and over. Males were less likely than females to be obese (18.1% compared with 20.0%), but more likely to be overweight (40.9% compared with 27.9%). However, when these categories were combined males were more likely than females to be overweight or obese (59.0% compared with 48.1%). Prevalence of obesity was highest in males aged between 45 and 64 years, and overweight was highest between 65 and 74 years of age.
- **Smoking:** There were 12,230 male and 19,930 female adults (aged 18+ years) who reported their smoking habits. Significantly more males (23.4%) than females (16.2%) smoked daily. Daily smoking was highest in males aged 18–24 years (36.7%) and declined with age.
- **Alcohol use:** 'At-risk' levels of alcohol intake were reported by 30.3% of the 13,076 male adult respondents and 20.1% of the 19,832 female adult respondents. Males aged between 18 and 24 years were most likely to consume alcohol at an 'at-risk' level (39.8%) and the proportion of 'at-risk' male drinkers declined with age. Of male patients who drank alcohol, 35.0% consumed alcohol at levels considered to place them at risk. Further, 47.3% of male drinkers aged between 18 and 24 years drank at risk levels.

Work-related problems managed at male encounters

Male patients had more work-related and workers compensation-funded encounters than did females. There were 2,012 male patient encounters involving problems judged by the GP to be work-related. One in ten problems managed at encounters with males aged between 25 and 44 years was found to be work-related. The most common work-related problems were back complaints, strains and sprains and other musculoskeletal injuries.

Conclusion

This secondary analysis of the BEACH data has provided the first national description of general practice encounters with male patients, their reasons for encounter, problems managed and treatment provided. The results of this study (such as male rates of GP attendance, obesity/overweight, smoking, and alcohol consumption) indicate that there is reason to be concerned about the health of males in the population, especially in the younger age groups.

There is potential to increase life expectancy and decrease death rates for Australian males by targeting their health risk behaviours, increasing their contact with GPs, and examining the social constructs which form such male behaviours. In the future, BEACH will provide a measure of the effectiveness of any strategies introduced to improve the attendance and morbidity of male patients in general practice.

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- Roche Products Pty Ltd.

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Ethics approval for the BEACH study was obtained from the Human Ethics Committee of the University of Sydney and the Health Ethics Committee of the Australian Institute of Health and Welfare (AIHW).

1 Introduction

Men's health has been defined as "any issue, condition or determinant that affects the quality of life of men and/or for which different responses are required in order for men (and boys) to experience optimal social, emotional and physical health"¹. This definition highlights the fact that men's health encompasses not only health issues that are male-specific but also those common to both sexes.

Recently, men's health has received increased attention because there is epidemiological evidence of inequality in health outcomes between the sexes¹. Compared with Australian women, Australian men have higher death rates at all ages, and a shorter life expectancy by 6 years². Further, men tend to suffer from more serious diseases than women³.

The health of an individual or of any group of people is thought to be due to multiple factors. Turrell and Mathers⁴ developed a model of the complex framework of external (e.g. social, political, environmental) and internal (e.g. psychological, physical, occupation) factors that shape the health of an individual or group. According to this framework, the state of men's health could be seen to be caused by a complex mixture of socioeconomic and physical factors^{1,5}.

The Centre for Advancement of Men's Health⁵ and the NSW Department of Health¹ both acknowledge in their publications that the best way to provide the most appropriate health education and health services to men is not known. It has been suggested that part of a future action plan could be to encourage a change in the perspective and values of influential people in the health system and to model future male health strategies on existing male perspectives and customs⁶. Fletcher⁶ suggested that there may be a danger in replicating the strategies of the women's health movement without regard for the differing illness experiences and health needs of men. General practitioners (GPs) can play a role in improving men's health by recognising that it needs to be approached with the aim of achieving both social and organisational change^{1,5,7}.

Cardiovascular disease is the most common cause of death for men and women in Australia, accounting for 39% of deaths in 2000. However, the rate of mortality is greater in males (255.7 per 100,000 persons) than in females (172.9)². It has been hypothesised that this difference is partially due to a natural biological protection in females (until menopause) against build-up of cholesterol⁸, and to the male behavioural factors that increase their risk factors for cardiovascular disease. However, this difference in prevalence may be partially explained by the lack of health strategies targeted specifically towards men¹.

The risk factors that are linked to cardiovascular disease are also risk factors for many other diseases. The value of examining the prevalence of risk factors is that they are preventable and can be targeted in future health strategies.

The 2001 National Drug Strategy Household Survey used self-reported data to describe drug-related behaviour in the Australian population. It included questions about tobacco, alcohol and illicit drug use in Australians aged 14 years and over. The results showed that smoking was more prevalent in males (21.1%) compared with females (18.0%). Levels of alcohol consumption defined as being 'risky' and of 'high risk' to health in the long term (according to the National Health Medical and Research Council Guidelines⁹) were found to be more common in males (10.2%) than females (9.4%). In addition, in the previous 12 months 39% of males (compared with 30% of females) consumed alcohol at levels considered to be 'risky' or of 'high risk' to their health in the short term. Illicit drugs were

found to be more recently used (within the previous 12 months) by males in every age group compared with females.

The 1999–00 Australian diabetes, obesity and lifestyle study (AusDiab) found that two in three males were overweight or obese compared with one in two females aged over 25 years (as reported in *Australia's Health 2002*).

Men have a propensity to spend time engaging in risky behaviours such as over-eating (leading to obesity), smoking, and excessive alcohol consumption³. These behaviours are explained, at least in part, by the male gender role in society and the detrimental impact it has on men's health⁷. Sabo and Gordon¹⁰ defined male gender behaviour, also known as masculinity and maleness, as behaviour that is regarded by a particular culture to be acceptable for men. Male gender behaviour displays four groups of behaviours: the denial of emotions; achieving success, status and power to maintain control of situations; denial of any problems that show weakness; and risk taking¹¹. These four groups of behaviour encompass several masculinity traits identified by other authors^{1,7,12-14}. The male gender role means that the illness experience for men is different from that of women^{7,12,15}. Masculinity has a different effect on males of different ages¹. In particular, during adolescence and early adulthood men struggle to find an identity that fits within the culturally acceptable role of an Australian man. This struggle causes health risk behaviour that has serious implications for future health¹².

The different gender-based reactions to and perceptions of sickness and health for men⁷ are evident in the results of the 1995 National Health survey which found that men had a less critical view of their health³. It also reported that the top three self-reported reasons for visiting a doctor were common to both men and women. These were respiratory conditions, check-ups and musculoskeletal conditions. Although these reasons were common to both sexes, males tend to visit doctors less frequently^{2,16} and report more serious illnesses (measured by higher rates in 10 of 18 serious disease groups)³ than do females.

Medicare-funded services include general practice (45% of services), pathology, specialists and diagnostic services¹⁷. Men's use of Medicare-funded services in both 1993–94 and 1997–98 was lower than for women. In 1993–94 males used, on average, 8 Medicare items of service per year whereas females used 12¹⁷. In 1997–98 men again used fewer Medicare-funded services, at an average 8.7 services per year, compared with women, who used 12.4 services per year¹⁶.

GPs are the point of entry to the health care system for most people¹⁸. The level of general practice service utilisation is less for males than females in every age group, except among children. For the first 14 years of life, males and females have similar rates of use, but from 15 years onwards males have a consistently lower usage of Medicare funded services¹⁷.

It has been suggested that the lower rate of health care utilisation by men may be due to the male gender role, which attaches illness to weakness¹⁵. There has been a call for health services to be made more male-friendly based on the hypothesis that men feel intimidated by community health centres and the general practice setting, because these are more oriented toward the needs of women and children^{1,5}. The results of a small localised Australian study of the opinions of 15 GPs, showed that GPs felt that men were reluctant to use their services because of lack of accessibility, work commitments and cost^{19,20}. The masculinity traits and stereotypes of male GPs have also been identified as possible barriers to the provision of effective health care for men^{7,20}. It could be hypothesised that because men take a less critical view of their health (discussed earlier), they do not regard health care as a priority²⁰ and hence do not utilise health care services.

Men spend more years in the workforce than women and are more likely to do hazardous jobs (e.g. mining), exposing them to more stress, physical activity, dangerous materials and injury^{1,3}. By interviewing GPs, Woods et al.²⁰ identified that the need to continue working was a primary reason for men to attend GPs.

GPs reported in focus groups, interviews and opinion articles that male patients tend to have a tangible physical condition when they attend a GP^{7,20,21}. These views are supported by a survey of male ($n = 80$) and female ($n = 204$) patients, between 20 and 45 years of age in London, in which Corney²² found that men attended health care providers primarily with physical symptoms. If men did attend a GP because of conditions or concerns other than physical problems, they were observed by GPs to be indirect or ambiguous in explaining their reason for the encounter^{7,20,21}. Again these findings were supported by Corney²² who found that women found it easier than men to divulge personal information (especially regarding social or psychological problems) to GPs.

The influence of women on men's health behaviours and their social standing in relation to health has been widely recognised^{5,6,15}. On the basis of findings from a series of GP focus groups, Tudiver and Talbot²¹ suggest that men use women, rather than the health care system, as their support network for health concerns. Norcross et al.²³ studied the effect of women on men's utilisation of general practice in San Diego, America. From this study of 314 consecutive general practice patients, the authors recommend involving women in men's health, because they appear to play a critical role in the social network and health behaviours of their partners.

This poses a problem for men without women in their lives. Norcross et al.²³ recommended that men should be better educated to assume greater responsibility for seeking health care services in an appropriate and timely manner. An increase in male self-responsibility for their health has also been recommended by GPs^{15,19,20,24}. Huggins¹² supports this call for greater responsibility; however, he also suggests that the community is responsible for the cultural definition of what it means to be a man and the health outcomes of this¹².

Men do not approach health preventively^{5,25-27}. For this reason, health education, the assessment of risk factors and the delivery of preventive care should take place at all contacts with GPs regardless of the reason for encounter^{28,29}.

In the last 7 years there has been an international groundswell in activities relating to the improvement of men's health. In Australia the (then) Commonwealth Department of Human Services and Health developed a draft national men's health policy in 1996, although no further action on the development of this policy has occurred³⁰. The Standing Committee on Health and Community Care submitted a report to the Legislative Assembly on men's health services³¹. The Commonwealth Government has funded a series of national men's health conferences, the fourth of which was held in September 2001³². Additionally, the Commonwealth Government has funded four national male strategic initiatives: development of a database of activities in men's health; the development of a men's health research agenda; a centre for excellence in men's sexual and reproductive health; and a forum on men and relationships³³.

Current activities are numerous and reflect a growing community interest in men's health.

- The second world congress on men's health was held in Austria in October of 2002³⁴.
- America has legislation in place for an annual men's health week (to occur prior to Father's Day) to increase community knowledge of men's health issues³⁵. The international men's health week coincides with the American men's health week³⁵.
- The *British Medical Journal*³⁶ and the *Australian Family Physician*³⁷ have both released special editions devoted to male health issues.

- The sixth National Rural Health Conference recommended that the Department of Health and Aged Care (DHAC) (now the Department of Health and Ageing, DoHA) fund research on men's health similar to the Australian longitudinal study on women's health and develop a National Men's Health Policy³⁸.
- In September 2001 the Department of Family and Community Services established a men's phone line as a result of the Commonwealth Government's men and family relationships initiative³⁹.
- The Men's Health Information and Resource Centre based at the University of Western Sydney offers advice on policy, research and evaluation for projects working with men and boys. This centre takes an active role in organising the national men's health conferences⁴⁰.
- The NSW Health Department¹, the Queensland Epidemiology and Health Information Centre,⁴¹ and the South Australian Department of Human Services⁴² have released reports on men's health.
- The Centre for Advancement of Men's Health, established in Australia in 1995, developed the MAN model to promote men's health through men's health nights and GP education⁵. Men's health nights create a male-friendly environment and aim to develop a pathway for male education and empowerment. In turn this may help men deal with health needs preventively, by reducing risky behaviour patterns and by encouraging them to seek regular check-ups and to adopt healthy lifestyle practices.
- A local General Practice Division in Western Australia developed a male-friendly health promotion program to deliver preventive health check-ups using the analogy of a health pit stop, with oil pressure being a blood pressure check, exhaust being smoking and so on⁴³.
- The men's health tune-up program developed by the pharmaceutical company Pfizer uses the racing personality Dick Johnson in its promotions. The service offers free 'tune-up nights' and a mobile unit providing free health information and health assessment⁴⁴.
- Newspapers educate men about their health needs using a non-threatening channel of information⁴⁵⁻⁴⁷.
- There has been an expansion in the number of internet sites that cater for men's health. Examples include:
 - www.menshealthandwellbeing.org.au
 - www.menshealthweekeaustraila.org/mhirc.htm
 - www.menshealthforum.org.uk
 - www.menshealthnetwork.org
 - www.mannet.com.au.

In summary, we know that men have shorter life expectancy and higher death rates in every age group compared with women. Data from the National Health Survey and other patient surveys rely on self-reported data from the male and female participants involved to reach conclusions. Other hypothesised patterns in men's health and their use of GPs have come from GP opinion articles and research conducted using GP focus groups and interviews.

There is very little evidence that the hypothesised behavioural differences between men and women are true. Further, there is very little information about what problems men do take to the GP (except by self-report) and the way in which these problems may be different from those of women.

The BEACH (Bettering the Evaluation and Care of Health) study provided an ideal opportunity to examine GP encounters with male patients at a national level to determine men's reasons for seeing GPs, the types of morbidity reported and the management of these problems.

1.1 Aims

The primary aim of this study was to:

- describe morbidity and its management at GP encounters with male patients and to compare these to encounters with female patients.

Other aims were to:

- describe the characteristics of male and female patients at GP encounters
- compare the extent of use of GP services by male and female patients
- describe the health risk behaviours of males at GP encounters
- examine the pattern of morbidity managed by GPs for males in different stages of their lives.

2 Methods

This study is a secondary analysis of the data collected by the BEACH study from April 1999 to March 2000 inclusive. The methods specific to this study in determining differences in GP-patient encounters on the basis of patient sex are outlined in Sections 2.2 and 2.3.

2.1 The BEACH program

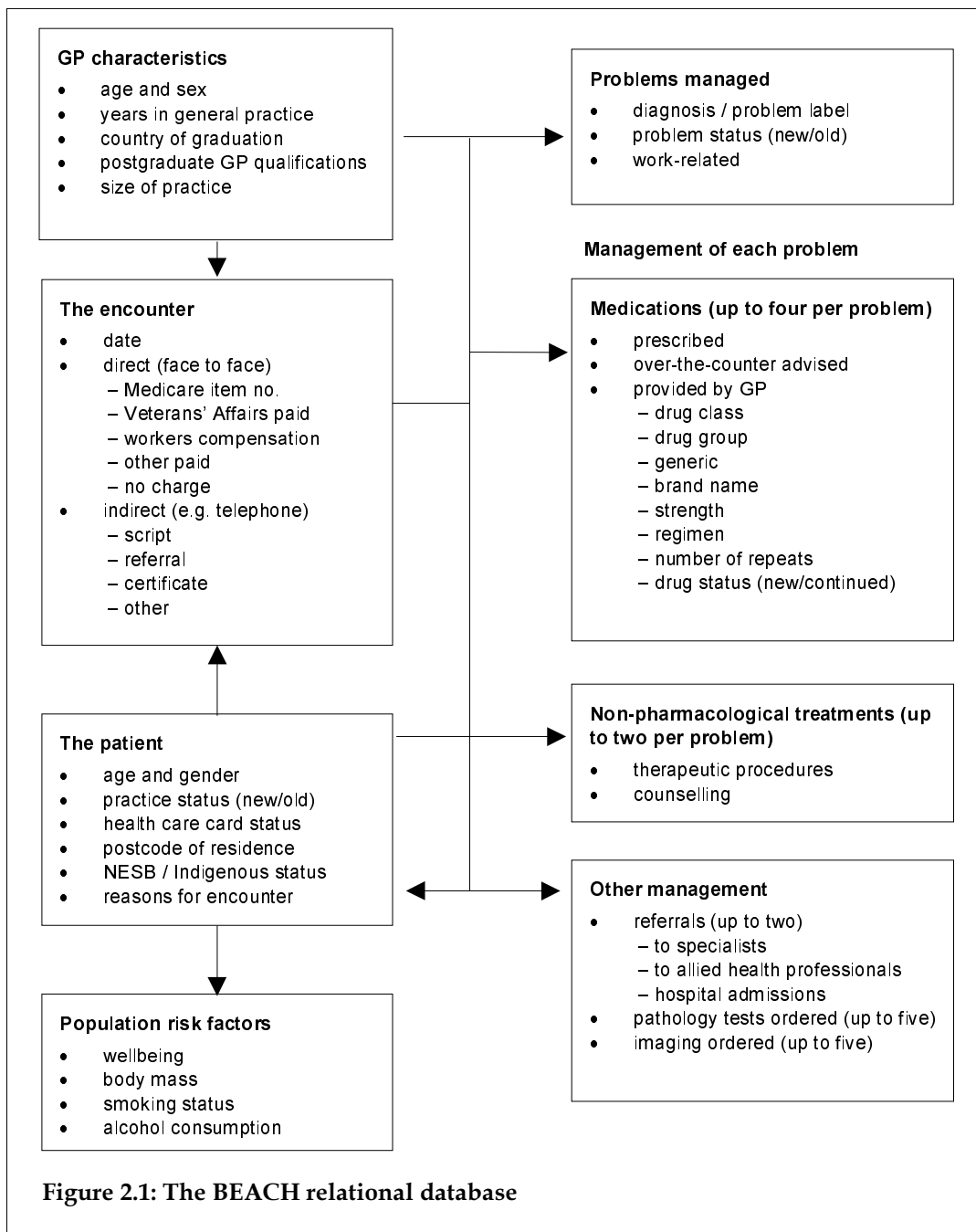
The standard BEACH methods used to gather, store and analyse BEACH data are described in detail elsewhere⁴⁸⁻⁵⁰. In summary, 1,000 randomly selected GPs are recruited yearly, in a rolling sample of approximately 20 GPs per week for 50 weeks. Each GP records (on paper) a cluster of 100 consecutive patient encounters (the recording form is included as Appendix 1). The BEACH source population includes all recognised GPs (see Glossary) who claimed more than 375 A1 Medicare items of service (see Glossary) in the most recent Health Insurance Commission (HIC) 3-month data period. The GP Branch of the Department of Health and Aged Care (DHAC) draws the sample on a regular basis.

The randomly selected GPs are then recruited by letter, with a follow-up phone call. GPs who agree to participate are set a starting date, usually 3 to 4 weeks in advance. The paper recording packs are sent out 10 days in advance of this starting date and the GPs are given a follow-up phone call within the first days of the agreed recording period.

Information on each participating GP is gained through a GP characteristics questionnaire (see Appendix 2). The GP sample at the end of the year of research is examined in comparison to the total GP source population, using the chi-square statistic (significant at the 5% level), to determine differences in GP characteristics. When GP characteristics are found to differ significantly from the source population the data provided by these GPs are weighted. Data weights also incorporate the GP activity level (reflecting the number of A1 Medicare items claimed by each participating GP) to increase the validity of national estimates.

Data produced by the BEACH study are stored within a relational database, described diagrammatically in Figure 2.1. It demonstrates that all variables are directly related to GP and patient characteristics and to the encounter. There is only an indirect relationship between the patients' reasons for encounter (RFEs) and the problem managed by the GP.

The data collected at each encounter are patient demographics, encounter details, RFEs, problems managed, pharmacological and non-pharmacological treatments, referrals, and tests ordered (shown in Figure 2.1). With the exception of medications these data items are classified according to the International Classification of Primary Care (Version 2) (ICPC-2)⁵¹, using ICPC-2 PLUS⁵², an extended vocabulary of GP terms. ICPC-2 is regarded as the international standard for data classification in primary care. Medications (prescribed, provided or advised over-the-counter purchase) are classified according to an in-house classification, the Coding Atlas for Pharmaceutical Substances (CAPS). This has a hierarchical structure that includes medication group, medication class, generic composition and brand name. Further details can be found at <http://www.fmrc.org.au/>.



Since BEACH began in April 1998, a section on the bottom of each encounter form has been allocated to investigate aspects of patient health or health care delivery not covered by the consultation-based information (see Appendix 1). These additional substudies are referred to as SAND (Supplementary Analysis of Nominated Data). In the 1999–00 data period, each GP's pack of 100 recording forms included 40 forms with questions on wellbeing, alcohol consumption, and height and weight (to calculate body mass index, BMI); 40 forms with questions on the patient's smoking status; and 20 with questions on a range of other topics (not presented in this report).

2.2 Statistical methods

The analysis of the BEACH database was done using the Statistical Analysis System (SAS) Version 6.12⁵³. The primary unit of analysis is the GP-patient encounter. The results of analysis are reported in two ways, proportions and rates per 100 encounters. Proportions are used when the event of interest occurs once per encounter (e.g. patient sex, patient age, encounter type) or when describing an event relevant to a specific group of events (e.g. amount of problem *A* in total problems). Rates per 100 encounters are used when an event can occur more than once per encounter (e.g. problems managed, medications).

Comparative results in this report present the number of observations (*n*), rate per 100 encounters and the 95% confidence limits after adjustment for clustering. Significant differences are highlighted by the shading of significant results in the tables.

The BEACH study is a random sample of GPs providing data about a cluster of encounters. Clustered sampling study designs violate the simple random sample assumption. In this study the standard error calculations used in the 95% confidence limits accommodate both the single-stage clustered design and sample weighting according to Kish's description of the formulae⁵⁴. SAS 6.12 was limited in its ability to calculate the standard error in this study design and so further programming was done to incorporate the formulae. This methodological issue is described in detail elsewhere⁴⁹.

Multiple logistic regression

Multiple logistic regression analyses were performed to determine which variables (i.e. predictors), independent of other predictors, were related to patient sex at the GP encounter. The results of these analyses are discussed in Chapter 6, Section 6.4.

As the BEACH study employs a cluster sample survey design, with patients clustered around each GP, Stata 7⁵⁵ was used for the modelling, to allow adjustment for the design effect of the cluster sample.

Unadjusted differences between male and female patients were analysed using simple logistic regression, with patient sex (1 = Male, 0 = Female) as the outcome (dependent) variable.

The variables of interest were grouped into three families: morbidity, social factors, and patient and GP demographics. Morbidity was analysed at both the specific problem level (Table 6.3) and the broader ICPC-2 chapter-based body system level (Table 6.2). Social variables included non-English-speaking background status, Indigenous status, whether a new or an existing patient to the practice, whether living in an urban or a rural location, whether a health concession card holder, and the level of socioeconomic disadvantage (as defined by the Socio-Economic Indexes for Areas, SEIFA, using postcode of residence). The patient and GP demographics included age of patient (< 15, 15–44, 45–64, 65–74, 75+), and GP age (< 55, 55+) and sex.

Multiple logistic regression was used to determine the independent predictors of patient sex. Adjusted odds ratios are reported with the 95% confidence interval (CI), corrected for the cluster sample effect. The models were reduced using backward elimination, with the morbidity family reduced first, followed by social and demographic variables, resulting in a parsimonious model of significant predictors. Individual variables were removed if the *p*-value of the Wald statistic (adjusted for the cluster sample) was not significant ($\alpha = 0.05$).

In the analysis of problems managed by ICPC-2 chapter, the univariate method counts the number of times a problem from a chapter is managed. Up to four problems can be managed

per encounter; therefore, it is possible to count multiple problems per chapter at an encounter. In contrast, the modelling/odds ratios examine the presence of at least one problem from a chapter being managed at an encounter.

2.3 The study of sex-specific encounters

This report primarily aims to describe the health issues of male patients, but by making comparisons with female patients it provides data on all encounters where patient sex was recorded. However, two primary areas specific to male patients were analysed separately:

- problems managed in each of the following age groups: 15–24, 25–34, 35–44, 45–54, 55–64, 65–74 and 75+ years (see below)
- work-related problems managed (see below).

The proportion of the Australian population who attended a GP and population GP-attendance rates were also examined to identify any sex-specific, age-related patterns in the use of general practice services. The proportion of the population using GPs was calculated for age–sex groups by dividing the number of people in each age–sex group who had claimed at least one A1 Medicare item during 2000–01 (data supplied by the GP Branch of the DHAC), by the number of people in the total population in that age–sex group in 1999 (the most recent data available)⁵⁶, multiplied by 100. The age–sex-specific rate of GP attendances in Australia was calculated by dividing the total number of claims for A1 Medicare items, by the total population in each age–sex group.

Morbidity managed in specific male age groups

An analysis of the problems managed at encounters with male patients was conducted in 10-year age groups. Only patients aged 15 years and above were included because these patients would (in the majority) be likely to be responsible for seeking their own health care. The aim was to determine patterns of problems managed and treatment provided. Note that the data used in this section are not weighted because weighting is not necessary when using age–sex defined groups, as this stratifies the data effectively.

Work-related problems managed at male encounters

Work-related problems are defined as those problems that GPs judged likely to be work-related, irrespective of whether they were claimable through workers compensation or Medicare. Work-related problems were selected because there was a significant difference between males and females in the relative rate of work-related problems and workers compensation claimable encounters. This substudy describes the types of work-related problems managed, the age distribution of male patients with work-related problems and the characteristics of these patients.

3 The general practitioners

Characteristics of the participating GPs have been described in detail elsewhere⁴⁹. A brief summary is provided below.

3.1 Results of recruitment

Contact was attempted with 2,977 GPs, and established with 2,678 (90%) of these. Of the 2,678 available practitioners, 1,215 (45.4%) agreed to participate but 168 (5.6%) failed to complete the study. The final participating sample consisted of 1,047 practitioners, representing 35.2% of those with whom contact was attempted (results not presented).

3.2 GP characteristics

Of the 1,047 participants, 69.6% were male and 59.2% were 45 years of age or older. Three-quarters of the participants (75.4%) had been in general practice for more than 10 years and 15.3% could be regarded as practising part-time, working fewer than six sessions per week. The majority (73.3%) had graduated in Australia and one in ten participants (10.6%) conducted more than half of his or her consultations in a language other than English (Table 3.1).

3.3 Comparison between participating and non-participating GPs

The General Practice Branch of the DHAC provided some information about each of the GPs drawn in the initial sample from HIC data. This information was used to determine the extent to which the final participating GPs were representative of the initial sample of practitioners. These data included the number of general practice Medicare items claimed in the previous year and quarter. In this analysis the number of Medicare items claimed in the previous quarter was compared and is referred to as 'activity level'.

There were no significant differences between participants and non-participants in terms of sex, place of graduation, State or Territory, and location of practice using the Rural, Remote and Metropolitan Area (RRMA) classification. The age distributions for participants and non-participants were significantly different, with GPs under the age of 35 years being under-represented in the participant population and those aged 55 years or more over-represented. The under-representation of young GPs aged under 35 years suggested by this comparison was also reflected in a comparison of participants with all GPs in the sample frame.

There was no statistically significant difference in activity level in the previous quarter (measured by the number of A1 Medicare items of service claimed) between participants and non-participants⁴⁹.

Post-stratification weighting was performed according to GP age (stratified by sex) to adjust for the under-representation of young GPs, and for the activity level of each participating GP⁴⁹.

Table 3.1: Characteristics of participating GPs

| GP characteristic | Number ^(a) | Per cent of GPs ^(a) (<i>n</i> = 1,047) |
|--|-----------------------|---|
| Male | 729 | 69.6 |
| Female | 318 | 30.4 |
| Age (missing = 4) | | |
| < 35 years | 88 | 8.4 |
| 35–44 years | 338 | 32.4 |
| 45–54 years | 338 | 32.4 |
| 55+ years | 279 | 26.7 |
| Years in general practice (missing = 8) | | |
| < 5 years | 90 | 8.7 |
| 6–10 years | 166 | 15.9 |
| 11–19 years | 331 | 31.9 |
| 20+ years | 452 | 43.5 |
| Sessions per week (missing = 6) | | |
| < 6 per week | 159 | 15.3 |
| 6–10 per week | 691 | 66.0 |
| > 10 per week | 191 | 18.3 |
| Size of practice (missing = 5) | | |
| Solo | 189 | 18.1 |
| 2–4 GPs | 480 | 46.1 |
| 5+ GPs | 373 | 35.8 |
| Graduated in Australia (missing = 2) | 767 | 73.3 |
| More than 50% of consultations in languages other than English | 105 | 10.6 |

(a) Missing data removed.

4 The encounters

There were 1,048 GPs who participated in BEACH in 1999–00, one of whom saw no male patients. These GPs provided information about 104,856 patient encounters. At 1,182 of these encounters patient sex was not recorded. There were 44,308 encounters with male patients and 59,366 encounters with female patients⁴⁹.

4.1 Distribution of services by patient sex

The proportion of encounters claimable through Medicare were significantly lower for male patients (92.1%) than for female patients (93.7%). In contrast, encounters claimable through workers compensation were relatively more frequent among males (3.0%) than females (1.2%).

Of the Medicare-claimable encounters, males had a significantly greater proportion of standard consultations (79.6%) and a significantly lower proportion of long consultations (7.0%) than females (77.1% and 8.9% respectively).

There were no other significant differences between the sexes in proportions of direct consultations, consultations with no charge, consultations paid by other sources (e.g. hospital, the States etc.) or indirect consultations (Table 4.1).

4.2 Summary of morbidity and management by patient sex

Although there were no differences between encounters with male and female patients in the number of recorded RFEs, the number of problems managed at consultation did differ. Encounters with males involved the management of significantly fewer problems (143.9 per 100 encounters) than did encounters with females (149.0).

This difference was not reflected in the more specific comparison of rates of new problems, or of rates of follow-up consultations for old problems. However, there was a significant difference in the relative rate of problems thought by the GP to be related to work. Encounters with males involved significantly more work-related problems (4.8 per 100 encounters) than those with females (2.0). This trend was maintained when analysed in terms of the proportion of total problems managed. A significantly greater proportion of total problems were work-related for male patients (3.3 per 100 problems) than for female patients (1.3).

At encounters with male and female patients there were no significant differences in overall rates of medication, referral or imaging. However, referrals were made significantly more often for male patients when measured in terms of problems managed. Male patients were referred at a rate of 8.1 per 100 problems managed compared with 7.3 per 100 problems for female patients. This difference, although significant, was small and was not echoed in any of the more specific referral categories.

Procedural treatments were provided significantly more often at encounters with males (13.5 per 100 encounters) than at those with females (11.8), even though there was no significant difference between the sexes for the overall category of other treatments. This

trend was maintained when analysed in terms of problems managed, with male patients having significantly more procedural treatments performed (9.4 per 100 problems) than female patients (7.9).

In contrast, orders for pathology tests were significantly less frequent at encounters with males (23.1 per 100 encounters) than at those with females (28.7). When analysed in terms of problems managed, male patients were again significantly less likely to have pathology tests ordered (16.1 per 100 problems) compared with female patients (19.3) (Table 4.2).

Due to the lack of substantial differences found in describing the morbidity management in terms of rates per 100 problems rather than per 100 encounters, the remaining results in this report are presented in terms of rates per 100 encounters.

Table 4.1: Distribution of services by patient sex

| Variable | Male (n = 44,308) | | | Female (n = 59,366) | | |
|------------------------------------|--|---------|---------|--|---------|---------|
| | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL |
| Direct consultations | 97.0 | 96.7 | 97.4 | 96.4 | 96.0 | 96.8 |
| No charge | 0.7 | 0.2 | 1.1 | 0.5 | 0.1 | 0.9 |
| Medicare-claimable | 92.1 | 91.4 | 92.7 | 93.7 | 93.1 | 94.2 |
| Short surgery consultations | 1.4 | 0.2 | 2.6 | 1.3 | 0.3 | 2.3 |
| Standard surgery consultations | 79.6 | 78.6 | 80.7 | 77.1 | 76.1 | 78.2 |
| Long surgery consultations | 7.0 | 6.2 | 7.7 | 8.9 | 8.1 | 9.7 |
| Prolonged surgery consultations | 0.4 | 0.0 | 1.3 | 0.6 | 0.0 | 1.4 |
| Home visits | 1.1 | 0.4 | 1.9 | 1.6 | 0.8 | 2.4 |
| Hospital | 0.5 | 0.0 | 3.2 | 0.4 | 0.0 | 2.8 |
| Nursing home | 0.6 | 0.0 | 1.7 | 1.2 | 0.0 | 2.6 |
| Other items | 1.6 | 0.8 | 2.3 | 2.5 | 1.6 | 3.4 |
| Workers compensation | 3.0 | 2.4 | 3.5 | 1.2 | 0.8 | 1.7 |
| Other paid (hospital, State, etc.) | 1.4 | 0.0 | 4.1 | 1.1 | 0.0 | 3.3 |
| Indirect consultations | 3.0 | 2.3 | 3.6 | 3.6 | 2.9 | 4.2 |
| Prescription | 1.6 | 1.0 | 2.1 | 1.9 | 1.4 | 2.4 |
| Referral | 0.5 | 0.0 | 1.1 | 0.5 | 0.0 | 1.0 |
| Certificate | 0.1 | 0.0 | 0.9 | 0.1 | 0.0 | 0.7 |
| Other | 1.0 | 0.2 | 1.6 | 1.2 | 0.6 | 1.8 |
| Missing | (1,721) | .. | .. | (2,163) | .. | .. |

(a) Missing data removed.

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit.

Table 4.2: Summary of morbidity and management by patient sex

| Variable | Male (n = 44,308) | | | | | Female (n = 59,366) | | | | |
|------------------------|-------------------|-------------------|---------|---------|--------------------|---------------------|---------|-------------------|---------|---------|
| | Number | Rate per 100 encs | 95% LCL | 95% UCL | Rate per 100 probs | 95% LCL | 95% UCL | Rate per 100 encs | 95% LCL | 95% UCL |
| General practitioners | 1,047 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Encounters (n) | 44,308 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Reasons for encounter | 64,932 | 164.6 | 144.7 | 148.4 | .. | .. | 151.8 | 150.0 | 148.2 | 151.8 |
| Problems managed | 63,740 | 143.9 | 141.9 | 145.8 | .. | .. | 150.9 | 149.0 | 147.0 | 150.9 |
| New problems | 20,045 | 45.2 | 43.5 | 47.0 | 31.5 | 30.2 | 32.7 | 45.4 | 43.8 | 47.1 |
| Old problems | 43,695 | 98.6 | 96.0 | 101.2 | 68.6 | 67.3 | 69.8 | 103.5 | 100.9 | 106.1 |
| Work-related | 2,116 | 4.8 | 4.3 | 5.3 | 3.3 | 2.9 | 3.7 | 2.0 | 1.6 | 2.4 |
| Medications | 48,851 | 110.3 | 107.6 | 112.9 | 76.6 | 75.0 | 78.2 | 110.2 | 107.8 | 112.6 |
| Prescribed | 41,507 | 93.7 | 90.9 | 96.5 | 65.1 | 63.4 | 66.8 | 94.1 | 91.7 | 96.5 |
| Advised OTC | 4,143 | 9.4 | 8.3 | 10.4 | 6.5 | 5.7 | 7.3 | 9.5 | 8.7 | 10.3 |
| GP-supplied | 3,202 | 7.2 | 5.9 | 8.6 | 5.0 | 4.1 | 6.0 | 6.6 | 5.4 | 7.8 |
| Other treatments | 20,508 | 46.3 | 44.2 | 48.4 | 32.2 | 30.8 | 33.5 | 45.9 | 43.9 | 47.8 |
| Clinical | 14,542 | 32.8 | 31.2 | 34.4 | 22.8 | 21.6 | 24.0 | 34.1 | 32.6 | 35.7 |
| Procedural | 5,966 | 13.5 | 12.8 | 14.1 | 9.4 | 8.9 | 9.9 | 11.8 | 11.2 | 12.3 |
| Referrals | 5,171 | 11.7 | 11.1 | 12.2 | 8.1 | 7.8 | 8.5 | 10.8 | 10.4 | 11.3 |
| Emergency department | 44 | 0.1 | 0.0 | 1.5 | 0.1 | 0.0 | 1.0 | 0.1 | 0.0 | 0.7 |
| Hospital admissions | 350 | 0.8 | 0.4 | 1.2 | 0.6 | 0.3 | 0.8 | 0.7 | 0.3 | 1.0 |
| Specialist | 3,314 | 7.5 | 7.1 | 7.9 | 5.2 | 4.9 | 5.5 | 7.1 | 6.8 | 7.5 |
| Allied health services | 1,463 | 3.3 | 3.0 | 3.7 | 2.3 | 2.1 | 2.5 | 3.0 | 2.7 | 3.3 |
| Pathology | 10,238 | 23.1 | 21.7 | 24.6 | 16.1 | 15.1 | 17.0 | 28.7 | 27.4 | 30.1 |
| Imaging | 3,155 | 7.1 | 6.7 | 7.6 | 5.0 | 4.6 | 5.3 | 7.9 | 7.5 | 8.3 |

Note: Shading indicates statistically significant differences. Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; Probs—problems; OTC—over-the-counter medication.

5 The patients

5.1 Patient characteristics by patient sex

Table 5.1 shows that the age distribution of male patients at GP encounters was significantly different from that of female patients. Of the males, 17.7% were under 15 years of age; in contrast, only 12.6% of females were in this age group. However, male patients were less likely to be aged between 15–44 years (33.0%) than were females (39.4%). Male patients were more likely to be aged 45–74 years (38.3%) than females (35.3%) and less likely to be aged 75+ at the time of encounter (11.2%) than females (12.8%). The age–sex distribution of patients at encounter is graphically represented in Figure 5.1.

Figure 5.2 shows the age-specific sex distribution of patients at encounter. Males accounted for a larger proportion of encounters with patients aged under 5 years than did females. The proportion of male and female patients between 5 and 14 years of age was evenly distributed. However, from the age of 15 years onward, female patients accounted for a larger proportion of consultations than did male patients. This difference was most marked in the age groups 15–44 years and 75+ years, where female patients presented at more than 60% of encounters.

There was no significant difference between encounters with male and female patients in the extent to which the patient was new to the practice. However, a significantly lower proportion of males held a health care card (36.2 per 100 encounters) than their female counterparts (40.7). In contrast, males were far more likely to hold a Commonwealth Veterans' Affairs gold card (4.1 per 100 encounters) than were females (1.5). Very few of both sexes held a Commonwealth Veterans Affairs' white card.

There were no significant differences between the sexes across the patient categories of non-English-speaking background, Aboriginal status, Torres Strait Islander status and both Aboriginal and Torres Strait Islander status (Table 5.1).

Table 5.1: Patient characteristics by patient sex

| Patient variable | Male (n = 44,308) | | | Female (n = 59,366) | | |
|-------------------------------------|--|---------|---------|--|---------|---------|
| | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL |
| Age group | .. | .. | .. | .. | .. | .. |
| < 1 year | 2.9 | 2.5 | 3.2 | 2.0 | 1.7 | 2.2 |
| 1–4 years | 6.4 | 6.0 | 6.9 | 4.3 | 3.9 | 4.6 |
| 5–14 years | 8.4 | 8.0 | 8.9 | 6.3 | 5.9 | 6.6 |
| 15–24 years | 9.3 | 8.8 | 9.8 | 11.2 | 10.7 | 11.7 |
| 25–44 years | 23.7 | 22.8 | 24.5 | 28.2 | 27.3 | 29.0 |
| 45–64 years | 25.3 | 24.6 | 26.0 | 24.0 | 23.4 | 24.6 |
| 65–74 years | 13.0 | 12.3 | 13.5 | 11.3 | 10.8 | 11.9 |
| 75+ years | 11.2 | 10.4 | 11.9 | 12.8 | 12.0 | 13.7 |
| Missing age | (288) | .. | .. | (382) | .. | .. |
| Other characteristics | .. | .. | .. | .. | .. | .. |
| New patient to practice | 8.1 | 7.2 | 9.0 | 6.7 | 6.0 | 7.3 |
| Health care card holder | 36.2 | 34.5 | 37.8 | 40.7 | 39.0 | 42.4 |
| Veterans' Affairs gold card | 4.1 | 3.5 | 4.7 | 1.5 | 1.1 | 1.9 |
| Veterans' Affairs white card | 0.5 | 0.0 | 1.1 | 0.2 | 0.0 | 0.8 |
| Non-English-speaking background | 8.1 | 4.0 | 12.2 | 7.9 | 4.4 | 11.4 |
| Aboriginal | 0.6 | 0.0 | 2.2 | 0.7 | 0.0 | 0.2 |
| Torres Strait Islander | 0.1 | 0.0 | 1.6 | * | ** | ** |
| Aboriginal & Torres Strait Islander | * | ** | ** | * | ** | ** |

(a) Missing data removed.

* Less than 0.05 per 100 encounters.

** CL could not be calculated due to small sample size.

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit.

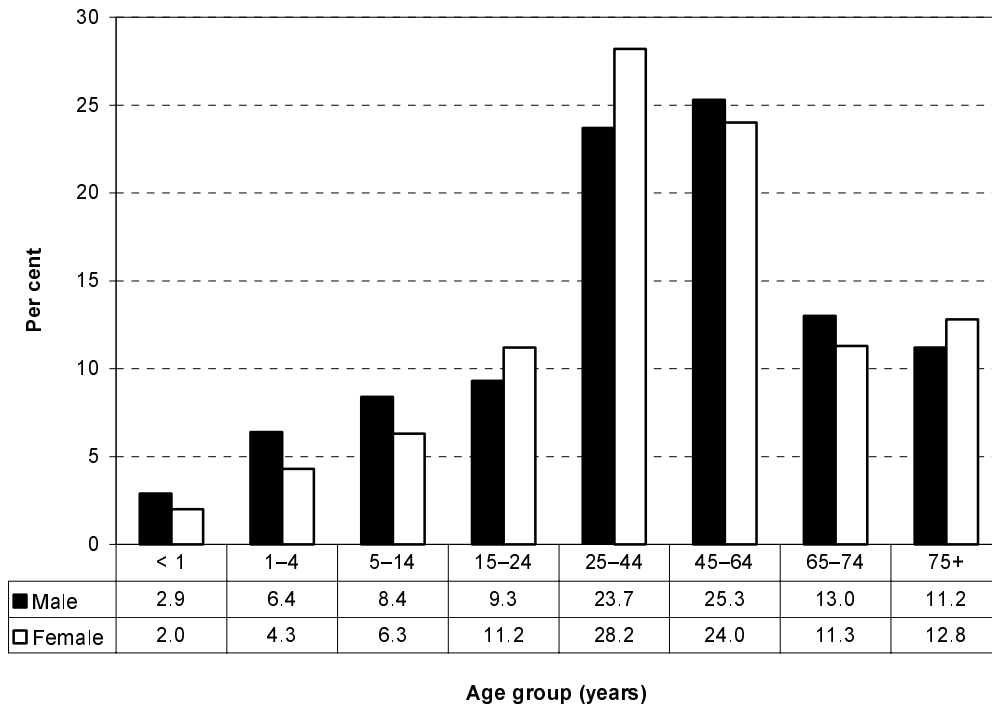


Figure 5.1: Age distribution of patients at encounter by patient sex

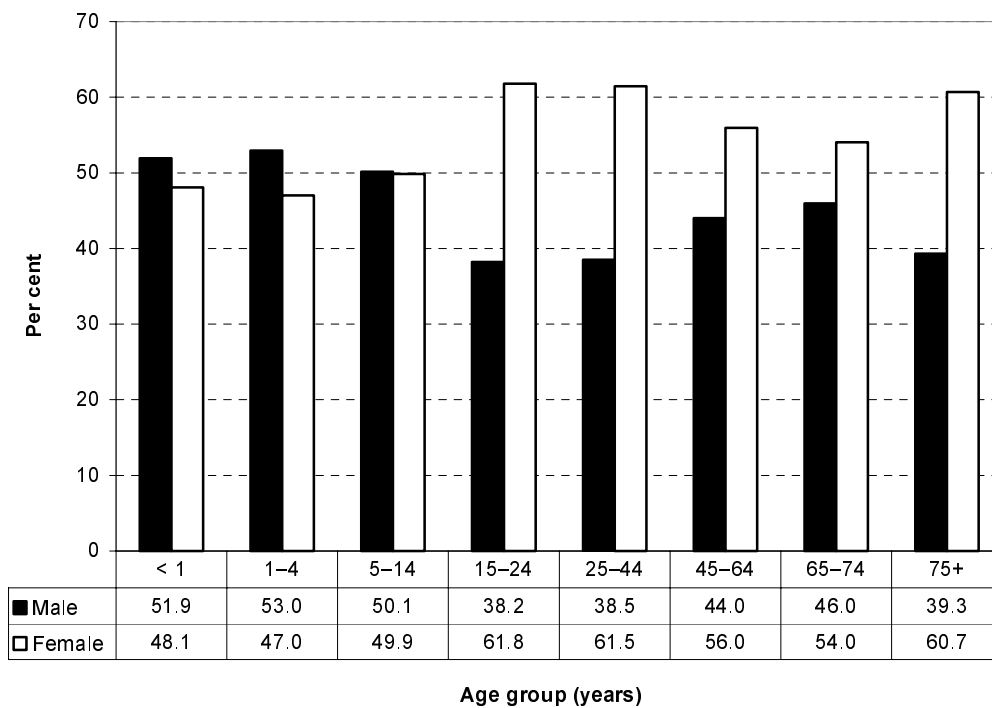


Figure 5.2: Age-sex-specific distribution of patients at encounter

5.2 Proportion of Australian population attending GPs

Figure 5.3 shows the proportion of the Australian population (based on 1999 population estimates)⁵⁶ that attended a GP at least once in 2000–01 (Medicare data supplied by the GP Branch of the DHAC), by age and sex. Overall a lower proportion of males in the population attended a GP at least once in the year (76%) compared with females (87%). Comparable proportions of boys and girls aged less than 15 years attended a GP at least once in that year. In older age groups, a lower proportion of males than females attended a GP, with the exception of the 70–74 age group. The most marked difference between males and females occurred between 15 and 39 years, where less than 75% of males attended a GP compared with 80–90% of females.

Figure 5.4 shows the estimated age–sex-specific rate of GP attendances for the Australian population. This rate is based on 1999 Australian population estimates⁵⁶ and the 2000–01 count of total A1 Medicare items claimed (data supplied by the GP branch of the DHAC). Australian males had lower average yearly rates of GP service use (5.1 services) than Australian females (6.2 services). Until the age of 15 years, the male and female average rate of use of GP services showed little difference. However, for 15–19 year olds the average rate of use of GP services was much lower for males (2.3 services) than for females (3.7 services). This pattern remained constant for males throughout all the remaining age groups. The largest differences in male and female attendance rates were in the age groups between 15 and 39 years and over 75 years, where males used an average of two services fewer than females per year.

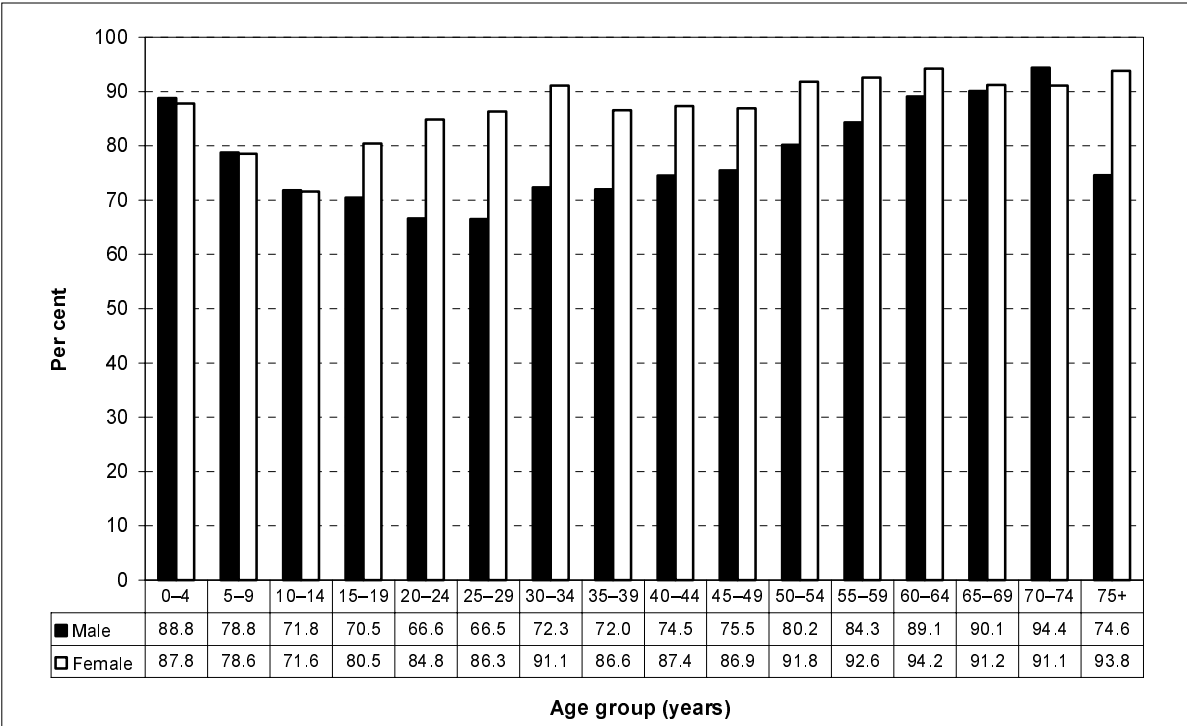


Figure 5.3: Proportion of total Australians (1999) who attended general practice at least once in 2000-01 by age and sex

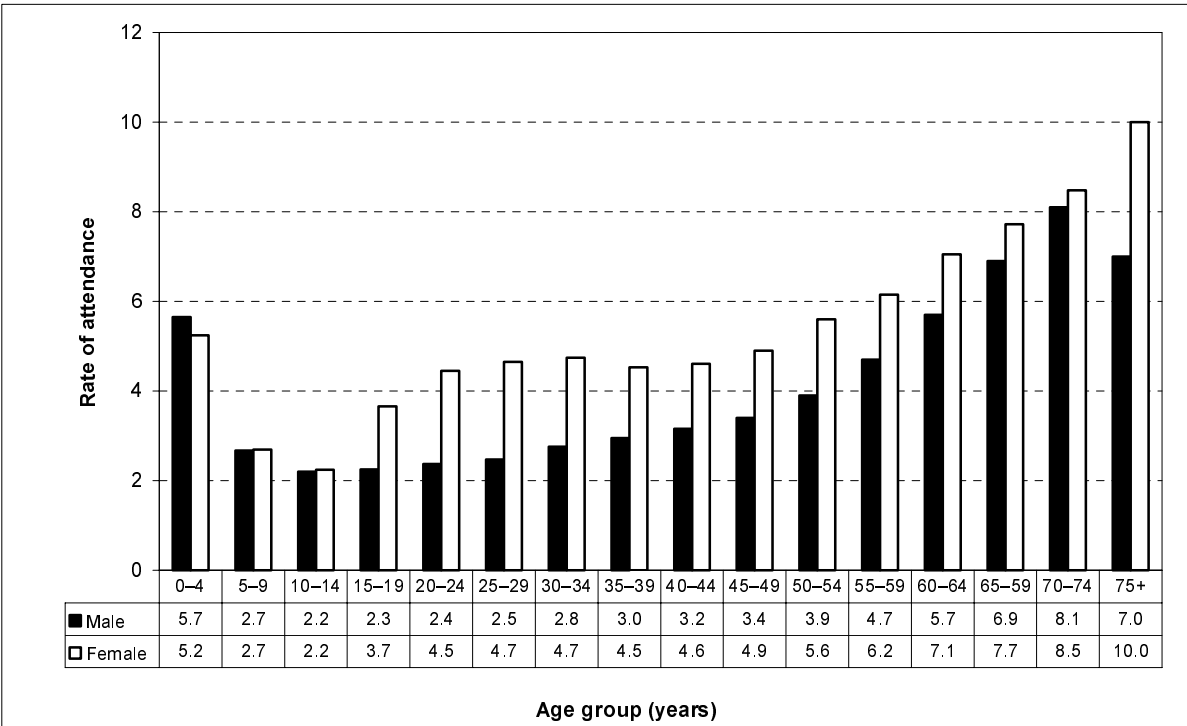


Figure 5.4: Age-sex-specific rate of average annual general practice attendances in 2000-01 for the Australian population (1999)

5.3 Patient reasons for encounter by patient sex

Reasons for encounter by ICPC-2 chapter by patient sex

Reasons for encounter (RFEs) are those concerns and expectations which patients consider to be the reason they have made contact with the GP. These RFEs can be expressed as symptoms, in diagnostic terms, as areas of concern or as requests for a service⁴⁹.

Table 5.2 compares the distribution of RFEs by ICPC-2 chapter for male and female patients. The results are presented in rank order for male encounters. The six most frequent RFEs were common to both male and female patients. There were four RFEs (classified by ICPC-2 chapter) that were recorded significantly more often at encounters with male patients than at those with female patients.

- The rate for respiratory RFEs was 26.6 per 100 male encounters, compared with 24.3 for female encounters.
- RFEs classified as musculoskeletal were significantly more common at encounters with male patients (18.4 per 100 encounters) than at those with females (15.2 per 100).
- RFEs associated with the skin occurred at the rate of 16.6 per 100 encounters in male patients compared with 14.1 per 100 for female patients.
- RFEs related to the ear were significantly more frequent at encounters with male patients (4.9 per 100 encounters) than at those with females (3.6).

RFEs that were recorded significantly less often at encounters with males included those:

- related to the neurological system (5.0 per 100 compared with 6.0 per 100 encounters with females)
- associated with the genital system (2.4 per 100 male encounters compared with 9.3 females encounters)
- associated with the urinary system (1.7 per 100 encounters with male patients compared with 3.3 for those with female patients).

There were no significant differences between the sexes in the relative rates of RFEs associated with the circulatory, digestive, endocrine and metabolic systems, nor in those of a general or psychological nature.

Table 5.2: Comparison of the distribution of patient reasons for encounter by ICPC-2 chapter for encounters with males and females (in rank order for male encounters)

| ICPC-2 chapter | Male (n = 44,308) | | | | Female (n = 59,366) | | | |
|-----------------------------|-------------------|----------------------------------|--------------|--------------|---------------------|----------------------------------|--------------|--------------|
| | Rank | Rate per 100 encs ^(a) | 95% LCL | 95% UCL | Rank | Rate per 100 encs ^(a) | 95% LCL | 95% UCL |
| General & unspecified | 1 | 30.0 | 28.9 | 31.0 | 1 | 28.3 | 27.3 | 29.2 |
| Respiratory | 2 | 26.6 | 25.6 | 27.7 | 2 | 24.3 | 23.4 | 25.3 |
| Musculoskeletal | 3 | 18.4 | 17.8 | 19.1 | 3 | 15.2 | 14.7 | 15.7 |
| Skin | 4 | 16.6 | 16.0 | 17.2 | 4 | 14.1 | 13.6 | 14.5 |
| Circulatory | 5 | 11.7 | 10.9 | 12.5 | 5 | 10.9 | 10.2 | 11.5 |
| Digestive | 6 | 10.7 | 10.2 | 11.1 | 6 | 10.2 | 9.8 | 10.6 |
| Psychological | 7 | 6.8 | 6.2 | 7.4 | 8 | 7.5 | 7.1 | 7.9 |
| Endocrine & metabolic | 8 | 5.7 | 5.3 | 6.1 | 11 | 5.2 | 4.8 | 5.6 |
| Neurological | 9 | 5.0 | 4.6 | 5.3 | 10 | 6.0 | 5.7 | 6.3 |
| Ear | 10 | 4.9 | 4.6 | 5.2 | 12 | 3.6 | 3.4 | 3.8 |
| Eye | 11 | 3.1 | 2.8 | 3.3 | 14 | 2.7 | 2.4 | 2.9 |
| Genital system | 12 | 2.4 | 2.1 | 2.6 | 7 | 9.3 | 8.7 | 9.9 |
| Blood | 13 | 2.3 | 1.8 | 2.7 | 15 | 1.9 | 1.7 | 2.2 |
| Urology | 14 | 1.7 | 1.4 | 2.0 | 13 | 3.3 | 3.1 | 3.5 |
| Social problems | 15 | 0.9 | 0.2 | 1.5 | 16 | 1.0 | 0.8 | 1.2 |
| Pregnancy & family planning | — | — | — | — | 9 | 6.7 | 6.1 | 7.2 |
| Total RFEs (n) | 64,932 | 146.6 | 144.7 | 148.4 | 89,051 | 150.0 | 148.2 | 151.8 |

(a) Figures do not total 100 as more than one reason for encounter can be recorded at each encounter.

Note: Shading indicates statistically significant differences. Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; RFE—reasons for encounter.

The most frequent patient reasons for encounter by patient sex

Table 5.3 shows the most frequent RFEs by patient sex in rank order for encounters with males. The three most frequent RFEs, common to both female and male patients showed no significant differences between the sexes. These were requests for a prescription; a cough; and a request for a cardiac check-up (often a blood pressure check).

RFEs more commonly recorded at encounters with male patients were:

- back complaints (4.2 per 100 male encounters compared with 3.2 per female encounters)
- request for a general check-up (3.9 per 100 encounters with male patients, compared with 2.8 with female patients).

Requests for a genital check-up occurred at a significantly lower rate at encounters with male patients (only 0.2 per 100 encounters) than at those with female patients (2.9 per 100).

Table 5.3: The ten most frequent patient reasons for encounter, by patient sex (in rank order for male reasons for encounter)

| Patient reasons for encounter | Male (n = 44,308) | | | | Female (n = 59,366) | | | |
|-----------------------------------|-------------------|----------------------------------|--------------|--------------|---------------------|----------------------------------|--------------|--------------|
| | Rank | Rate per 100 encs ^(a) | 95% LCL | 95% UCL | Rank | Rate per 100 encs ^(a) | 95% LCL | 95% UCL |
| Prescription (all)* | 1 | 9.2 | 8.5 | 9.8 | 1 | 10.0 | 9.4 | 10.5 |
| Cough | 2 | 7.6 | 7.0 | 8.2 | 2 | 6.6 | 6.1 | 7.1 |
| Cardiac check* | 3 | 5.7 | 5.1 | 6.3 | 3 | 5.5 | 5.0 | 5.9 |
| Immunisation/vaccination (all)* | 4 | 4.5 | 3.9 | 5.0 | 6 | 4.0 | 3.6 | 4.5 |
| Back complaint* | 5 | 4.2 | 3.8 | 4.5 | 7 | 3.2 | 3.0 | 3.4 |
| Throat complaint | 6 | 4.1 | 3.6 | 4.6 | 4 | 4.3 | 3.8 | 4.7 |
| General check-up* | 7 | 3.9 | 3.5 | 4.4 | 9 | 2.8 | 2.4 | 3.1 |
| Test results* | 8 | 3.7 | 3.2 | 4.1 | 5 | 4.2 | 3.8 | 4.6 |
| Rash* | 9 | 2.8 | 2.6 | 3.1 | 11 | 2.6 | 2.4 | 2.8 |
| Upper respiratory tract infection | 10 | 2.8 | 2.2 | 3.4 | 10 | 2.7 | 2.2 | 3.1 |
| **Genital check-up* | 121 | 0.2 | 0.0 | 1.0 | 8 | 2.9 | 2.4 | 3.3 |
| <i>Subtotal (n, %)</i> | <i>21,561</i> | <i>33.2</i> | <i>..</i> | <i>..</i> | <i>28,918</i> | <i>32.5</i> | <i>..</i> | <i>..</i> |
| Total RFEs (n) | 64,932 | 146.6 | 144.7 | 148.4 | 89,051 | 150.0 | 148.2 | 151.8 |

(a) Figures do not total 100 as more than one reason for encounter can be recorded at each encounter. Also only those RFEs that accounted for a rate of > 1% of total encounters for either sex are included.

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

** Indicates a RFE occurring in one of the ten most frequently recorded RFEs for female patients, not occurring in the ten most frequently recorded RFEs for male patients.

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit; RFEs—reasons for encounter.

6 Problems managed

A comparison of encounters with male and female patients found that the overall rate of problems managed was significantly lower at encounters with male patients (143.9 per 100) than at those with females (149.0 per 100) (Table 4.2).

6.1 Number of problems managed at encounter by patient sex

Table 6.1 shows the differences in the number of problems managed at encounters with male and female patients. Male patients were significantly more likely to have only one problem managed (67.1% of encounters) than were female patients (64.1%). In contrast males were less likely to have three problems managed (7.2%) than were females (8.2%).

Table 6.1: Number of problems managed at encounter by patient sex

| Number of problems managed at encounter | Male (n = 44,308) | | | Female (n = 59,366) | | |
|---|------------------------|--------------|-----------|------------------------|--------------|-----------|
| | Per cent of encounters | 95% LCL | 95% UCL | Per cent of encounters | 95% LCL | 95% UCL |
| One problem | 67.1 | 65.9 | 68.3 | 64.1 | 62.9 | 65.3 |
| Two problems | 23.8 | 23.0 | 24.6 | 25.3 | 24.6 | 26.0 |
| Three problems | 7.2 | 6.7 | 7.7 | 8.2 | 7.7 | 8.6 |
| Four problems | 1.9 | 1.3 | 2.5 | 2.5 | 2.0 | 2.9 |
| Total (n,%) | 44,308 | 100.0 | .. | 59,366 | 100.0 | .. |

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit.

6.2 Problems managed by ICPC-2 chapter and patient sex

Table 6.2 shows the rate of problems managed within ICPC-2 chapters by patient sex. Table 6.2 also presents the results from the parsimonious model. These are described in Section 6.4. There were six ICPC-2 chapters where male patients had significantly higher relative rates of problems managed than did female patients. These were problems:

- relating to the respiratory system (25.6 per 100 male encounters compared with 23.2 per 100 female encounters)
- associated with the skin (19.0 per 100 male encounters compared with 15.6 for those with females)
- pertaining to the musculoskeletal system (18.2 per 100 male encounters compared with 16.0 per 100 female encounters)
- relating to the circulatory system (17.4 per 100 male encounters compared with 15.5 per 100 female encounters)
- associated with the digestive system (10.7 per 100 male encounters compared with 9.5 per 100 female encounters)

- relating to the ear (5.3 per 100 male encounters compared with 3.9 for those with females).

Male patients had significantly lower relative rates of problems managed across three ICPC-2 chapters compared with female patients. These were problems relating to:

- the neurological system (3.5 per 100 encounters compared with 4.2 per 100 encounters with females)
- the genital system (3.3 per 100 male encounters compared with 10.8 per 100 female encounters)
- the urological system (2.0 per 100 encounters with male patients compared with 3.9 for those with females).

Table 6.2: Problems managed by ICPC-2 chapters, by patient sex (in rank order of male problems managed), univariate and multiple logistic analysis

| Problems managed | Univariate analysis | | | | | | | | | | Parsimonious model | | | |
|-----------------------------|---------------------|--|--------------|--------------|---------------|--|--------------|--------------|---------------|-------------|--------------------|---------------|-------------|-----------|
| | Male (n = 44,308) | | | | | Female (n = 59,366) | | | | | Male:Female | | | |
| | Rank | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL | Rank | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL | Unadjusted OR | Adjusted OR | 95% CI | Unadjusted OR | Adjusted OR | 95% CI |
| Respiratory | 1 | 25.6 | 24.8 | 26.5 | 1 | 23.2 | 22.5 | 24.0 | 1.13 | 1.13 | 1.08-1.19 | 1.13 | 1.13 | 1.08-1.19 |
| Skin | 2 | 19.0 | 18.3 | 19.6 | 3 | 15.6 | 15.1 | 16.1 | 1.26 | 1.33 | 1.27-1.40 | 1.26 | 1.33 | 1.27-1.40 |
| Musculoskeletal | 3 | 18.2 | 17.5 | 18.8 | 2 | 16.0 | 15.5 | 16.6 | 1.17 | 1.27 | 1.20-1.33 | 1.17 | 1.27 | 1.20-1.33 |
| Circulatory | 4 | 17.4 | 16.5 | 18.3 | 4 | 15.5 | 14.7 | 16.3 | 1.12 | 1.20 | 1.14-1.26 | 1.12 | 1.20 | 1.14-1.26 |
| General & unspecified | 5 | 14.2 | 13.6 | 14.8 | 5 | 13.7 | 13.1 | 14.2 | 1.04 | 1.15 | 1.10-1.21 | 1.04 | 1.15 | 1.10-1.21 |
| Digestive | 6 | 10.7 | 10.3 | 11.1 | 8 | 9.5 | 9.2 | 9.9 | 1.13 | 1.21 | 1.14-1.28 | 1.13 | 1.21 | 1.14-1.28 |
| Psychological | 7 | 9.8 | 9.0 | 10.6 | 6 | 11.0 | 10.5 | 11.6 | 0.87 | NS | — | 0.87 | NS | — |
| Endocrine & metabolic | 8 | 9.7 | 9.1 | 10.3 | 9 | 8.7 | 8.3 | 9.2 | 1.12 | 1.19 | 1.12-1.26 | 1.12 | 1.19 | 1.12-1.26 |
| Ear | 9 | 5.3 | 5.0 | 5.6 | 12 | 3.9 | 3.6 | 4.1 | 1.38 | 1.35 | 1.25-1.46 | 1.38 | 1.35 | 1.25-1.46 |
| Neurological | 10 | 3.5 | 3.2 | 3.7 | 11 | 4.2 | 4.0 | 4.5 | 0.82 | 0.89 | 0.81-0.98 | 0.82 | 0.89 | 0.81-0.98 |
| Genital system | 11 | 3.3 | 3.0 | 3.6 | 7 | 10.8 | 10.2 | 11.4 | 0.30 | 0.38 | 0.35-0.41 | 0.30 | 0.38 | 0.35-0.41 |
| Eye | 12 | 2.9 | 2.7 | 3.2 | 14 | 2.6 | 2.4 | 2.8 | 1.13 | 1.15 | 1.04-1.28 | 1.13 | 1.15 | 1.04-1.28 |
| Urology | 13 | 2.0 | 1.7 | 2.2 | 13 | 3.9 | 3.6 | 4.1 | 0.49 | 0.56 | 0.50-0.63 | 0.49 | 0.56 | 0.50-0.63 |
| Blood | 14 | 1.6 | 1.1 | 2.2 | 15 | 1.8 | 1.6 | 1.9 | 0.93 | NS | — | 0.93 | NS | — |
| Social problems | 15 | 0.7 | 0.0 | 1.4 | 16 | 1.1 | 0.8 | 1.4 | 0.61 | 0.73 | 0.60-0.89 | 0.61 | 0.73 | 0.60-0.89 |
| Pregnancy & family planning | — | — | — | — | 10 | 7.5 | 7.0 | 8.0 | — | — | — | — | — | — |
| Total problems (n) | 63,740 | 144.0 | 141.9 | 145.8 | 88,433 | 149.0 | 147.0 | 150.9 | .. | .. | .. | .. | .. | .. |

(a) Figures do not total 100 as more than one problem can be managed at each encounter.

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit; OR—odds ratio; CI—confidence interval; NS—not statistically significant. Univariate analysis can examine multiple events per chapter per encounter; odds ratio examines the presence of at least one event per chapter per encounter (see Method, Section 2.2).

6.3 Most frequent problems managed by patient sex

Table 6.3 shows the most frequently managed problems by patient sex in rank order for problems managed at encounters with males. Table 6.3 also presents the parsimonious model. These results are described in Section 6.4.

There were seven significant differences in the relative rates of problems managed, with four problems being more common at encounters with male patients than at encounters with females. Those problems managed significantly more often at encounters with males, than females, were:

- back complaints (3.3 per 100 encounters compared with 2.3 per 100)
- diabetes (3.2 per 100 encounters compared with 2.3 per 100)
- lipid disorders (3.2 per 100 encounters compared with 2.2 per 100)
- general check-up (2.2 per 100 encounters compared with 1.4 per 100).

Those problems managed at a significantly lower relative rate at encounters with male patients were:

- depression (2.6 per 100 encounters) compared with encounters with female patients (4.0)
- genital check-up (0.1 per 100 encounters) compared with female encounters (2.7)
- urinary tract infections (UTI) (0.6 per 100 encounters) compared with female encounters (2.6).

Table 6.3: The ten most frequent problems managed by patient sex, univariate and multiple logistic analysis

| Problems managed | Univariate analysis | | | | | | | | | | Parsimonious model | | | |
|-----------------------------------|---------------------|--|--------------|--------------|---------------|--|--------------|--------------|---------------|-------------|--------------------|---------------|-------------|-----------|
| | Male (n = 44,308) | | | | | Female (n = 59,366) | | | | | Male:Female | | | |
| | Rank | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL | Rank | Rate per 100 encounters ^(a) | 95% LCL | 95% UCL | Unadjusted OR | Adjusted OR | 95% CI | Unadjusted OR | Adjusted OR | 95% CI |
| Hypertension* | 1 | 8.4 | 7.9 | 8.9 | 1 | 8.4 | 7.9 | 9.0 | 0.99 | 0.94 | 0.89-0.99 | 0.99 | 0.94 | 0.89-0.99 |
| Upper respiratory tract infection | 2 | 7.6 | 6.9 | 8.2 | 2 | 6.9 | 6.4 | 7.4 | 1.10 | NS | — | 1.10 | NS | — |
| Immunisation/vaccination (all)* | 3 | 4.9 | 4.4 | 5.5 | 3 | 4.4 | 3.9 | 4.8 | 1.13 | NS | — | 1.13 | NS | — |
| Asthma | 4 | 3.5 | 3.2 | 3.8 | 5 | 3.0 | 2.8 | 3.3 | 1.16 | NS | — | 1.16 | NS | — |
| Acute bronchitis/ bronchiolitis | 5 | 3.4 | 3.1 | 3.8 | 6 | 3.0 | 2.7 | 3.3 | 1.15 | NS | — | 1.15 | NS | — |
| Back complaint* | 6 | 3.3 | 2.9 | 3.6 | 10 | 2.3 | 2.1 | 2.6 | 1.41 | 1.44 | 1.30-1.60 | 1.41 | 1.44 | 1.30-1.60 |
| Diabetes* | 7 | 3.2 | 2.8 | 3.6 | 12 | 2.3 | 2.0 | 2.6 | 1.40 | 1.37 | 1.24-1.52 | 1.40 | 1.37 | 1.24-1.52 |
| Lipid disorder | 8 | 3.2 | 2.8 | 3.6 | 13 | 2.2 | 2.0 | 2.5 | 1.43 | 1.41 | 1.28-1.55 | 1.43 | 1.41 | 1.28-1.55 |
| Depression* | 9 | 2.6 | 2.3 | 2.9 | 4 | 4.0 | 3.7 | 4.3 | 0.64 | 0.71 | 0.65-0.78 | 0.64 | 0.71 | 0.65-0.78 |
| General check-up * | 10 | 2.2 | 1.8 | 2.6 | 24 | 1.4 | 1.2 | 1.7 | 1.55 | 1.58 | 1.40-1.78 | 1.55 | 1.58 | 1.40-1.78 |
| **Genital check-up* | 188 | 0.1 | 0.0 | 1.2 | 7 | 2.7 | 2.3 | 3.1 | 0.05 | 0.07 | 0.05-0.10 | 0.05 | 0.07 | 0.05-0.10 |
| **Urinary tract infection* | 51 | 0.6 | 0.2 | 1.0 | 8 | 2.6 | 2.4 | 2.8 | 0.23 | 0.23 | 0.20-0.27 | 0.23 | 0.23 | 0.20-0.27 |
| **Menopausal symptom | — | — | — | — | 9 | 2.4 | 2.1 | 2.7 | — | — | — | — | — | — |
| Subtotal (n, %) | 19,049 | 29.8 | .. | .. | 27,165 | 30.7 | .. | .. | .. | .. | .. | .. | .. | .. |
| Total problems (n) | 63,740 | 144.0 | 141.9 | 145.8 | 88,433 | 149.0 | 147.0 | 150.9 | .. | .. | .. | .. | .. | .. |

(a) Figures do not total 100 as more than one problem can be managed at each encounter.

* Includes multiple ICP-2 and ICP-2 PLUS codes (see Appendix 3).

** Indicates a problem managed in the ten most frequently managed problems for female patients, not included in the ten most frequently managed problems for male patients.

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit; OR—odds ratio; CI—confidence interval; NS—not statistically significant.

6.4 Multiple logistic regression analyses

Tables 6.2 and 6.3 include the adjusted odds ratios of the problems managed by chapter and the specific problems managed, after adjustment for the significant independent predictors of patient sex. The full model contained variables from three families: morbidity, social factors, and patient and GP demographics (see method, Section 2.2). The parsimonious model found the significant independent predictors to be: patient age; GP age; GP sex; practice location; whether the patient was a concession card holder; status to practice (whether a new or existing patient); and the other listed morbidity (the specific problems listed in Table 6.3 and the ICPC-2 chapters in Table 6.2).

The parsimonious model reports odds ratios, unadjusted and adjusted for other significant predictors of patient sex. These are interpreted as the odds of a male patient having a problem managed where the odds of the event occurring at an encounter with a female are held at one.

In both multivariate analyses (Tables 6.2 and 6.3) no significant differences identified in the univariate analysis were made insignificant or reversed. In both analyses the existing significant differences were replicated and additional significant differences were identified after adjustment.

Four ICPC-2 chapters that were not significant univariately were shown to be significant predictors after adjustment (Table 6.2). These were problems:

- of a general and unspecified nature (adj OR = 1.15)
- associated with the endocrine and metabolic system (adj OR = 1.19)
- related to the eye (adj OR = 1.15)
- of a social nature (adj OR = 0.73).

The problems (classified into ICPC-2 chapters, Table 6.2) that were significantly more likely to be managed at encounters with male patients than at those with female patients, both before and after adjustment, were those associated with the:

- respiratory system (adj OR = 1.13)
- skin (adj OR = 1.33)
- musculoskeletal system (adj OR = 1.27)
- circulatory system (adj OR = 1.20)
- digestive system (adj OR = 1.21)
- ear (adj OR = 1.35).

In both the multivariate and the univariate analyses, encounters with male patients were significantly less likely than those with female patients to have problems managed relating to the:

- neurological system (adj OR = 0.89)
- genital system (adj OR = 0.38)
- urological system (adj OR = 0.56).

In the analysis of specific problems managed (Table 6.3), all the differences identified in the univariate analysis held true after adjustment. However after adjustment a new difference emerged. Male patients were significantly less likely than female patients to have

hypertension managed at their encounters (adj OR = 0.94), although this difference was small.

The problems that were managed at a significantly higher relative rate at encounters with male patients than at those with female patients, both before and after adjustment, were:

- back complaints (adj OR = 1.44)
- diabetes (adj OR = 1.37)
- lipid disorders (adj OR = 1.41)
- general check-up (adj OR = 1.58).

In both the univariate and multivariate analyses, the problems that were managed significantly less often at encounters with male patients than at those with female patients were:

- depression (adj OR = 0.71)
- genital check-up (adj OR = 0.07)
- urinary tract infections (adj OR = 0.23).

7 Medications

As reported earlier (Table 4.2) encounters with males generated the same overall medication rate (including prescribed medications, advised over-the-counter medications and medications supplied by the GP) as those with female patients.

7.1 Rates of medications prescribed (in groups and subgroups) by patient sex

Table 7.1 demonstrates the prescription of common medication groups and subgroups, by patient sex, in rank order for prescription rates for male patients. Encounters with males generated significantly higher prescription rates than those with females in three groups of medications.

- Male patients had a significantly higher rate of prescription in the cardiovascular medication group (15.4 per 100 encounters) in comparison with their female counterparts (12.5). This trend was maintained throughout most cardiovascular medication subgroups. However, the only significant difference was for 'other cardiovascular medications' (which includes lipid-lowering medications), with prescription rates for encounters with males (3.2 per 100 encounters) higher than for those with females (1.8).
- Respiratory medications (at the group level) were prescribed significantly more often at encounters with male patients (8.2 per 100 encounters) than at those with females (6.9). The medication subgroup 'bronchodilators' reflected this pattern, being prescribed at a significantly higher rate at encounters with males (4.3 per 100 encounters) than at those with females (3.4).
- Medications acting on the musculoskeletal system at the group (6.6 per 100 encounters) and subgroup (5.1 per 100 encounters) level were prescribed significantly more often at encounters with males than at those with females (5.1 and 4.2 respectively).

There were five medication types that were prescribed at significantly lower rates at encounters with males than at those with females.

- Although the antibiotic medication group showed no overall significant difference, the subgroup 'other antibiotics' were prescribed relatively less often at encounters with males (3.1 per 100 encounters) than at those with females (3.7).
- Medications classified as 'anti-emetic/anti-nausea' had a significantly lower prescription rate at encounters with male patients (1.2 per 100 encounters) than at those with female patients (1.9).
- Psychological medications were prescribed significantly less often at encounters with males (6.8 per 100 encounters) than at those with females (8.1). This trend was reflected through most subgroups but was only significant in the 'anti-depressants' subgroup with male patients having a prescription rate of 2.3 per 100 encounters compared with 3.4 for female patients.
- Hormones were prescribed at a significantly lower rate (4.2 per 100 encounters) at encounters with male patients than at those with female patients (7.1).

- Medications in the urogenital group were prescribed significantly less often at encounters with males (1.4 per 100 encounters) than at those with females (2.5).

Table 7.1: Relative prescribing rates of common medication groups and subgroups by patient sex

| Medication group | Medication subgroup | Males (n = 44,308) | | | | Females (n = 59,366) | | | |
|-------------------------|----------------------------------|--------------------|-------------------|---------|---------|----------------------|-------------------|---------|---------|
| | | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| Antibiotics | | 1 | 16.5 | 15.7 | 17.3 | 1 | 16.3 | 15.9 | 16.9 |
| | Penicillins | | 1.7 | 1.3 | 2.0 | | 1.4 | 1.1 | 1.6 |
| | Broad spectrum penicillins | | 5.2 | 4.7 | 5.6 | | 4.4 | 4.0 | 4.8 |
| | Tetracycline | | 1.2 | 0.8 | 1.6 | | 1.1 | 0.8 | 1.4 |
| | Cephalosporins | | 3.9 | 3.4 | 4.4 | | 4.2 | 3.8 | 4.6 |
| | Other antibiotics | | 3.1 | 2.8 | 3.4 | | 3.7 | 3.4 | 4.0 |
| Cardiovascular | | 2 | 15.4 | 14.3 | 16.4 | 2 | 12.5 | 11.7 | 13.3 |
| | Anti-hypertensives | | 7.7 | 7.1 | 8.3 | | 6.7 | 6.2 | 7.2 |
| | Anti-angina | | 1.6 | 1.1 | 2.0 | | 1.1 | 0.8 | 1.5 |
| | Beta-blockers | | 1.8 | 1.4 | 2.2 | | 1.8 | 1.5 | 2.1 |
| | Other cardiovascular medications | | 3.2 | 2.8 | 3.6 | | 1.8 | 1.6 | 2.1 |
| | CNS | | 3 | 12.0 | 11.3 | 12.7 | 3 | 11.3 | 10.7 |
| Simple analgesics | | | 5.2 | 4.7 | 5.7 | | 4.8 | 4.3 | 5.3 |
| Narcotic analgesics | | | 1.7 | 0.6 | 2.7 | | 1.1 | 0.5 | 1.7 |
| Compound analgesics | | | 3.1 | 2.8 | 3.5 | | 2.9 | 2.6 | 3.1 |
| Anti-emetic/anti-nausea | | | 1.2 | 0.8 | 1.5 | | 1.9 | 1.7 | 2.1 |
| Respiratory | | 4 | 8.2 | 7.5 | 9.0 | 6 | 6.9 | 6.3 | 7.4 |
| | Bronchodilators | | 4.3 | 3.8 | 4.8 | | 3.4 | 3.0 | 3.8 |
| | Asthma preventives | | 2.8 | 2.3 | 3.2 | | 2.4 | 2.1 | 2.7 |
| Psychological | | 5 | 6.8 | 6.3 | 7.3 | 4 | 8.1 | 7.6 | 8.5 |
| | Sedative hypnotics | | 1.8 | 1.4 | 2.2 | | 2.0 | 1.8 | 2.3 |
| | Anti-anxiety | | 2.1 | 1.6 | 2.5 | | 2.1 | 1.8 | 2.5 |
| | Anti-depressants | | 2.3 | 2.0 | 2.6 | | 3.4 | 3.1 | 3.7 |
| Musculoskeletal | | 6 | 6.6 | 6.2 | 7.0 | 7 | 5.1 | 4.8 | 5.3 |
| | NSAID/anti-rheumatoid | | 5.1 | 4.7 | 5.5 | | 4.2 | 4.0 | 4.5 |
| Allergy, immune | | 7 | 5.6 | 5.0 | 6.3 | 8 | 4.9 | 4.4 | 5.4 |
| | Vaccines | | 4.8 | 4.1 | 5.5 | | 4.0 | 3.4 | 4.6 |
| Skin | | 8 | 4.8 | 4.4 | 5.1 | 9 | 4.5 | 4.2 | 4.8 |
| | Anti-infection skin | | 1.1 | 0.7 | 1.4 | | 0.9 | 0.7 | 1.2 |
| | Topical steroids | | 2.8 | 2.6 | 3.1 | | 2.8 | 2.6 | 3.0 |
| Digestive | | 9 | 4.6 | 4.2 | 4.9 | 10 | 4.1 | 3.8 | 4.4 |
| | Anti-ulcerants | | 2.4 | 2.1 | 2.7 | | 2.0 | 1.8 | 2.3 |

(continued)

Table 7.1 (continued): Relative prescribing rates of common medication groups and subgroups by patient sex

| Medication group | Medication subgroup | Males (n = 44,308) | | | | Females (n = 59,366) | | | |
|---|---------------------|--------------------|-------------------|-------------|-------------|----------------------|-------------------|-------------|-------------|
| | | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| Hormones | | 10 | 4.2 | 3.7 | 4.7 | 5 | 7.1 | 6.7 | 7.5 |
| | Sex hormones | | 0.3 | 0.0 | 0.7 | | 3.4 | 3.1 | 3.6 |
| | Corticosteroids | | 1.5 | 1.1 | 1.9 | | 1.4 | 1.1 | 1.7 |
| | Hypoglycaemics | | 2.2 | 1.6 | 2.8 | | 1.6 | 1.1 | 2.0 |
| Ear, nose topical | | 11 | 2.7 | 2.4 | 3.0 | 13 | 2.3 | 2.1 | 2.5 |
| | Topical otic | | 1.1 | 0.8 | 1.5 | | 0.8 | 0.6 | 1.1 |
| | Topical nose | | 1.6 | 1.2 | 1.9 | | 1.5 | 1.2 | 1.7 |
| Eye medications | | 12 | 1.8 | 1.5 | 2.1 | 14 | 1.6 | 1.4 | 1.9 |
| | Anti-infectives | | 1.2 | 0.9 | 1.5 | | 1.0 | 0.7 | 1.2 |
| Blood | | 13 | 1.5 | 1.1 | 1.8 | 15 | 1.7 | 1.4 | 1.9 |
| | Haemopoietic | | 0.5 | 0.0 | 0.9 | | 1.1 | 0.8 | 1.4 |
| | Other blood | | 1.0 | 0.6 | 1.3 | | 0.6 | 0.3 | 0.9 |
| Urogenital | | 14 | 1.4 | 1.0 | 1.8 | 12 | 2.5 | 2.2 | 2.8 |
| | Diuretics | | 1.3 | 0.9 | 1.8 | | 1.6 | 1.3 | 2.0 |
| Nutrition/metabolic | | 15 | 0.8 | 0.3 | 1.2 | 16 | 1.4 | 1.1 | 1.7 |
| Contraceptives | | — | — | — | — | 11 | 3.0 | 2.8 | 3.3 |
| | Oral contraception | — | — | — | — | | 3.0 | 2.8 | 3.3 |
| Total prescribed medications (n) | | 41,507 | 93.7 | 90.9 | 96.5 | 55,862 | 94.1 | 91.7 | 96.5 |

Note: Shading indicates statistically significant differences. Encs—encounters, LCL—lower confidence limit; UCL—upper confidence limit; CNS—central nervous system.

7.2 Most frequently prescribed generic medications by patient sex

‘Generic medications’ refer to the non-proprietary drug name, which reflects the substance in the medication rather than the brand name. While the rank order of the most frequently prescribed generic medications varied slightly between the sexes, there were no significant differences between male and female patients in the relative prescribing rate of each of the 20 most common medications (Table 7.2).

Table 7.2: Most frequently prescribed generic medications by patient sex

| Generic medication | Males (n = 44,308) | | | | Females (n = 59,366) | | | |
|---|--------------------|-------------------|-------------|-------------|----------------------|-------------------|-------------|-------------|
| | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| Paracetamol | 1 | 4.1 | 3.6 | 4.6 | 1 | 4.0 | 3.6 | 4.5 |
| Amoxicillin | 2 | 3.4 | 2.9 | 3.8 | 2 | 2.9 | 2.6 | 3.3 |
| Salbutamol | 3 | 2.7 | 2.3 | 3.2 | 6 | 2.2 | 1.9 | 2.4 |
| Paracetamol/Codeine | 4 | 2.7 | 2.3 | 3.0 | 3 | 2.2 | 2.0 | 2.5 |
| Cephalexin | 5 | 1.8 | 1.4 | 2.3 | 4 | 2.2 | 1.9 | 2.5 |
| Amoxicillin/potass.clavulanate | 6 | 1.8 | 1.4 | 2.2 | 10 | 1.5 | 1.2 | 1.8 |
| Cefaclor monohydrate | 7 | 1.7 | 1.1 | 2.3 | 8 | 1.6 | 1.2 | 2.1 |
| Roxithromycin | 8 | 1.7 | 1.3 | 2.0 | 7 | 1.9 | 1.6 | 2.2 |
| Influenza virus vaccine | 9 | 1.6 | 0.7 | 2.5 | 11 | 1.5 | 0.7 | 2.2 |
| Diclofenac sodium systemic | 10 | 1.4 | 1.0 | 1.8 | 12 | 1.2 | 0.9 | 1.4 |
| Temazepam | 11 | 1.3 | 0.9 | 1.8 | 9 | 1.5 | 1.3 | 1.8 |
| Diazepam | 12 | 1.2 | 0.8 | 1.7 | 14 | 1.0 | 0.7 | 1.2 |
| Atenolol | 13 | 1.1 | 0.7 | 1.5 | 13 | 1.0 | 0.7 | 1.3 |
| Ranitidine | 14 | 1.1 | 0.7 | 1.4 | 19 | 0.9 | 0.7 | 1.1 |
| Chloramphenicol eye | 15 | 1.1 | 0.7 | 1.4 | 26 | 0.8 | 0.5 | 1.1 |
| Aspirin | 16 | 1.0 | 0.6 | 1.5 | 30 | 0.7 | 0.3 | 1.1 |
| Simvastatin | 17 | 1.0 | 0.6 | 1.5 | 25 | 0.8 | 0.5 | 1.1 |
| Doxycycline hcl | 18 | 1.0 | 0.5 | 1.4 | 21 | 0.9 | 0.6 | 1.2 |
| Atorvastatin | 19 | 1.0 | 0.6 | 1.4 | 37 | 0.6 | 0.3 | 0.9 |
| **Levonorgesterol/ Ethinyloestradiol | — | — | — | — | 5 | 2.2 | 2.0 | 2.4 |
| **Prochlorperazine | 46 | 0.5 | 0.1 | 0.9 | 15 | 0.9 | 0.7 | 1.2 |
| **Budesonide topical nasal | 22 | 0.9 | 0.5 | 1.3 | 16 | 0.9 | 0.7 | 1.2 |
| **Oxamepam | 33 | 0.7 | 0.2 | 1.2 | 17 | 0.9 | 0.6 | 1.3 |
| <i>Subtotal (n, %)</i> | <i>14,783</i> | <i>35.6</i> | <i>..</i> | <i>..</i> | <i>20,425</i> | <i>36.6</i> | <i>..</i> | <i>..</i> |
| Total prescribed medications (n) | 41,507 | 93.7 | 90.9 | 96.5 | 55,862 | 94.1 | 91.7 | 96.5 |

Note: Encs— encounter; LCL—lower confidence limit; UCL—upper confidence limit.

** Indicates medications that accounted for > 1% of total prescriptions for female patients but did not account for > 1% of total prescriptions for male patients.

8 Other (non-pharmacological) treatments

Table 4.2 earlier demonstrated no significant difference at encounters with male and female patients in the overall relative rate of other treatments (which included both clinical and procedural treatments). However, in the more specific category of procedural treatments encounters with male patients had significantly higher rates of treatment compared with those of female patients.

8.1 Clinical treatments by patient sex

Clinical treatments were provided at 14,542 encounters with male patients and 20,255 encounters with female patients. The ten most frequent clinical treatments were common to both sexes and accounted for at least 84% of total clinical treatments at encounters with both. The only significant difference between them was in the provision of psychological counselling which was significantly less common at encounters with males (2.0 per 100 encounters) than at those with females (3.0) (Table 8.1).

Table 8.1: Most frequent clinical treatments by patient sex

| Treatment | Male (n = 44,308) | | | | Female (n = 59,366) | | | |
|--------------------------------------|-------------------|-------------------|-------------|-------------|---------------------|-------------------|-------------|-------------|
| | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| Advice/education—treatment* | 1 | 6.4 | 5.5 | 7.3 | 1 | 6.0 | 5.3 | 6.8 |
| Counsel/advice—nutrition/weight* | 2 | 4.3 | 3.7 | 4.9 | 3 | 4.2 | 3.6 | 4.7 |
| Advice/education* | 3 | 4.2 | 3.3 | 5.0 | 2 | 4.3 | 3.5 | 5.1 |
| Counselling—problem* | 4 | 3.4 | 2.3 | 4.4 | 4 | 3.5 | 2.8 | 4.2 |
| Advice/education—medication* | 5 | 2.6 | 2.0 | 3.3 | 5 | 3.0 | 2.6 | 3.5 |
| Counselling—psychological* | 6 | 2.0 | 1.5 | 2.5 | 6 | 3.0 | 2.6 | 3.4 |
| Counsel/advice—exercise* | 7 | 1.6 | 1.0 | 2.2 | 7 | 1.7 | 1.1 | 2.3 |
| Reassurance, support | 8 | 1.6 | 0.9 | 2.3 | 8 | 1.6 | 1.1 | 2.1 |
| Other admin/document* | 9 | 1.3 | 0.9 | 1.7 | 9 | 0.9 | 0.5 | 1.2 |
| Counsel/advice—smoking* | 10 | 0.8 | 0.2 | 1.4 | 10 | 0.7 | 0.2 | 1.1 |
| <i>Subtotal (n, %)</i> | <i>12,473</i> | <i>85.8</i> | <i>..</i> | <i>..</i> | <i>17,124</i> | <i>84.5</i> | <i>..</i> | <i>..</i> |
| Total clinical treatments (n) | 14,542 | 32.8 | 31.0 | 34.7 | 20,255 | 34.1 | 32.3 | 35.9 |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 4).

Note: Shading indicates statistically significant differences. Encs— encounter; LCL—lower confidence limit; UCL—upper confidence limit.

8.2 Procedural treatments by patient sex

Procedural treatments were performed at 5,966 male encounters and at 6,983 female encounters. The most common procedural treatments are listed in Table 8.2. Procedural treatments were performed at a significantly higher rate at male encounters (13.5 per 100 encounters) than at female encounters (11.8).

Excisions or removal of tissue (including destruction, debridement or cauterisation) were performed significantly more often at encounters with males (3.6 per 100 encounters) than at female encounters (2.5). Encounters with males also involved the application, removal or repair of casts or prosthetic devices at a significantly higher relative rate (1.4 per 100 encounters) than those with females (0.7) (Table 8.2).

Table 8.2: Procedural treatments by patient sex

| Treatment type | Male (n = 44,308) | | | | Female (n = 59,366) | | | |
|---|-------------------|-------------------|-------------|-------------|---------------------|-------------------|-------------|-------------|
| | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| Excision/removal tissue/biopsy/destruction/debridement/cauterise* | 1 | 3.6 | 3.2 | 4.0 | 1 | 2.5 | 2.2 | 2.8 |
| Dressing/press/compress/tamponade* | 2 | 2.4 | 2.0 | 2.7 | 2 | 2.0 | 1.6 | 2.3 |
| Physical medicine/rehabilitation | 3 | 1.8 | 1.2 | 1.8 | 3 | 1.6 | 1.2 | 2.0 |
| Incision/drain/flush/aspirate/remove body fluid* | 4 | 1.5 | 1.2 | 1.8 | 6 | 0.8 | 0.5 | 1.0 |
| Repair/fixation—suture/cast/prosthetic device (apply/remove)* | 5 | 1.4 | 1.1 | 1.8 | 7 | 0.7 | 0.4 | 1.0 |
| Other therapeutic procedures/surgery* | 6 | 1.1 | 0.0 | 2.8 | 5 | 1.1 | 0.0 | 2.2 |
| Electrical tracings | 7 | 0.5 | 0.0 | 1.1 | 9 | 0.4 | 0.0 | 0.8 |
| Physical function test* | 8 | 0.4 | 0.0 | 1.3 | 10 | 0.3 | 0.0 | 0.8 |
| Glucose test* | 9 | 0.3 | 0.0 | 1.2 | 12 | 0.2 | 0.0 | 1.0 |
| Local injection/infiltration* | 10 | 0.3 | 0.0 | 1.2 | 13 | 0.2 | 0.0 | 1.0 |
| **Pap smear | — | — | — | — | 4 | 1.4 | 0.9 | 1.8 |
| **Pregnancy test | — | — | — | — | 8 | 0.5 | 0.1 | 0.9 |
| <i>Subtotal (n, %)</i> | <i>5,841</i> | <i>97.9</i> | <i>..</i> | <i>..</i> | <i>6,765</i> | <i>96.9</i> | <i>..</i> | <i>..</i> |
| Total procedural treatments (n) | 5,966 | 13.5 | 12.7 | 14.2 | 6,983 | 11.8 | 11.2 | 12.3 |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 5).

** Indicates treatments that were included in the 10 most common procedural treatments for female patients, not included in the 10 most common procedural treatments for male patients.

Note: Shading indicates statistically significant differences. Encs— encounter; LCL—lower confidence limit; UCL—upper confidence limit.

9 Referrals to specialists and allied health professionals

Referrals to medical specialists accounted for more than 60% of all referrals and admissions at encounters with both male and female patients. The most frequent referrals to specialists are outlined in Table 9.1. Except in the sex-specific area of referrals to obstetricians and gynaecologists, there were no significant differences found in the rate of referral to medical specialists between male and female patients.

Referrals for physiotherapy accounted for approximately 30% of all referrals to allied health professionals, and no significant difference was found between male and female encounters (results not presented).

Table 9.1: Most frequent referrals to specialists by patient sex

| Professional to whom referred | Male (n = 44,308) | | | | Female (n = 59,366) | | | |
|---|-------------------|-------------------|-------------|-------------|---------------------|-------------------|-------------|-------------|
| | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| Medical specialist | | | | | | | | |
| Orthopaedic surgeon | 1 | 0.9 | 0.6 | 1.2 | 5 | 0.5 | 0.2 | 0.8 |
| Surgeon | 2 | 0.9 | 0.5 | 1.2 | 2 | 0.7 | 0.4 | 0.9 |
| Ophthalmologist | 3 | 0.7 | 0.3 | 1.1 | 3 | 0.6 | 0.4 | 0.9 |
| ENT specialist | 4 | 0.6 | 0.2 | 1.0 | 6 | 0.4 | 0.1 | 0.7 |
| Dermatologist | 5 | 0.6 | 0.2 | 1.0 | 4 | 0.6 | 0.3 | 0.8 |
| **Gynaecologist | — | — | — | — | 1 | 0.9 | 0.7 | 1.2 |
| <i>Subtotal: specialist referrals (n, %)</i> | <i>1,621</i> | <i>48.9</i> | <i>..</i> | <i>..</i> | <i>2,196</i> | <i>51.9</i> | <i>..</i> | <i>..</i> |
| Total specialist referrals (n) | 3,314 | 7.5 | 7.1 | 7.9 | 4,229 | 7.1 | 6.8 | 7.5 |
| Total specialist and allied health referrals | 5,171 | 11.7 | 11.1 | 12.2 | 6,436 | 10.8 | 10.4 | 11.3 |

** Indicates referrals that accounted for a rate of > 5% of total referrals for female patients, not accounted for in > 5% of total referrals for male patients.

Note: Encs—encounter; LCL—lower confidence limit; UCL—upper confidence limit.

10 Investigations

10.1 Pathology ordering by patient sex

The most frequently ordered pathology tests emanating from encounters with male and female patients are provided in Table 10.1. The overall rate of orders for pathology tests was significantly lower at encounters with male patients (23.1 per 100 encounters) than at those with female patients (28.7). Encounters with male patients generated significantly lower order rates for:

- full blood counts (2.9 per 100 male encounters and 3.7 at female encounters)
- urine MC&S (1.0 compared with 2.0 for females)
- thyroid function tests (0.6 compared with 1.7 female encounters).

Table 10.1: The ten most frequently ordered pathology tests by patient sex

| Pathology test type | Male (n = 44,308) | | | | Female (n = 59,366) | | | |
|-----------------------------------|-------------------|-------------------|-------------|-------------|---------------------|-------------------|-------------|-------------|
| | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| Full blood count | 1 | 2.9 | 2.5 | 3.3 | 1 | 3.7 | 3.4 | 4.0 |
| Liver function | 2 | 1.6 | 1.1 | 2.1 | 5 | 1.4 | 1.0 | 1.8 |
| Lipids | 3 | 1.6 | 1.1 | 2.1 | 8 | 1.0 | 0.6 | 1.3 |
| Glucose | 4 | 1.3 | 0.9 | 1.7 | 7 | 1.1 | 0.7 | 1.4 |
| Electrolytes, urea & creatinine | 5 | 1.2 | 0.6 | 1.8 | 6 | 1.1 | 0.7 | 1.5 |
| Urine MC&S | 6 | 1.0 | 0.6 | 1.3 | 3 | 2.0 | 1.8 | 2.2 |
| Prostate-specific antigen | 7 | 0.9 | 0.5 | 1.3 | — | — | — | — |
| Pathology | 8 | 0.7 | 0.0 | 1.7 | 10 | 0.8 | 0.0 | 1.8 |
| Electrolyte & liver function test | 9 | 0.7 | 0.0 | 1.8 | 11 | 0.7 | 0.0 | 1.4 |
| Erythrocyte sedimentation rate | 10 | 0.7 | 0.2 | 1.1 | 9 | 0.9 | 0.6 | 1.2 |
| Pap smear | — | — | — | — | 2 | 2.6 | 2.2 | 2.9 |
| **Thyroid function | 12 | 0.6 | 0.2 | 1.0 | 4 | 1.7 | 1.5 | 2.0 |
| <i>Subtotal (n, %)</i> | <i>5,838</i> | <i>57.0</i> | <i>..</i> | <i>..</i> | <i>10,052</i> | <i>58.9</i> | <i>..</i> | <i>..</i> |
| Total pathology tests (n) | 10,238 | 23.1 | 21.7 | 24.6 | 17,059 | 28.7 | 27.4 | 30.1 |

** Indicates pathology orders that were included in the 10 most common orders for female patients, not included in the ten most common for male patients.

Note: Shading indicates statistically significant differences. Encs— encounter; LCL—lower confidence limit; UCL—upper confidence limit.

10.2 Imaging orders by patient sex

Table 10.2 outlines the most frequently ordered imaging tests for encounters with male and female patients, in rank order for male encounters. Except for the rates of sex-specific imaging orders, there were no significant differences in imaging order rates at encounters with male and female patients.

Table 10.2: The ten most frequent imaging orders by patient sex

| Imaging test ordered | Male (n = 44,308) | | | | Female (n = 59,366) | | | |
|--------------------------------|-------------------|-------------------|------------|------------|---------------------|-------------------|------------|------------|
| | Rank | Rate per 100 encs | 95% LCL | 95% UCL | Rank | Rate per 100 encs | 95% LCL | 95% UCL |
| X-ray; chest | 1 | 1.2 | 0.9 | 1.4 | 1 | 0.9 | 0.7 | 1.1 |
| X-ray; knee | 2 | 0.5 | 0.1 | 0.9 | 6 | 0.3 | 0.0 | 0.6 |
| X-ray; spine lumbosacral | 3 | 0.3 | 0.0 | 1.0 | 9 | 0.2 | 0.0 | 0.6 |
| X-ray; shoulder | 4 | 0.2 | 0.0 | 0.8 | 11 | 0.2 | 0.0 | 0.7 |
| X-ray; ankle | 5 | 0.2 | 0.0 | 0.8 | 10 | 0.2 | 0.0 | 0.6 |
| Ultrasound; abdomen | 6 | 0.2 | 0.0 | 0.8 | 7 | 0.3 | 0.0 | 0.6 |
| Ultrasound; shoulder | 7 | 0.2 | 0.0 | 0.8 | 17 | 0.1 | 0.0 | 0.8 |
| X-ray; wrist | 8 | 0.2 | 0.0 | 0.8 | 14 | 0.1 | 0.0 | 0.6 |
| X-ray; finger(s)/thumb | 9 | 0.2 | 0.0 | 0.8 | 32 | 0.8 | 0.0 | 0.7 |
| X-ray; spine lumbar | 10 | 0.2 | 0.0 | 1.1 | 16 | 0.1 | 0.0 | 0.9 |
| **Mammography; F | — | — | — | — | 2 | 0.6 | 0.3 | 0.9 |
| **Ultrasound; pelvis | 93 | 0.1 | 0.0 | 2.8 | 3 | 0.6 | 0.3 | 0.9 |
| **Ultrasound breast; F | — | — | — | — | 4 | 0.4 | 0.0 | 0.8 |
| **X-ray; foot/feet | 13 | 0.1 | 0.0 | 0.8 | 5 | 0.3 | 0.0 | 0.6 |
| <i>Subtotal (n, %)</i> | <i>1,540</i> | <i>18.8</i> | <i>. .</i> | <i>. .</i> | <i>2,580</i> | <i>55.2</i> | <i>. .</i> | <i>. .</i> |
| Total imaging tests (n) | 3,155 | 7.1 | 6.7 | 7.6 | 4,670 | 7.9 | 7.5 | 8.3 |

** Indicates imaging orders included in the 10 most common orders for female patients, not included in the 10 most frequent for male patients.

Note: Encs— encounter; LCL—lower confidence limit; UCL—upper confidence limit.

11 Morbidity managed in specific male age groups

This section examines problems managed at encounters with male patients aged 15 years and above. From this age, most would be independently responsible for their own health care. Examining the morbidity managed according to age groups illustrates trends in diseases and health issues that GPs manage at encounters with male patients. The encounters with male patients were divided into seven age groups, based on the age of the patient at the encounter.

11.1 Male patients aged 15–24 years

The ten most commonly managed problems at the 3,412 encounters with male patients aged between 15 and 24 years are presented in Table 11.1. The most commonly managed problem was upper respiratory tract infection (URTI) (10.3 per 100 encounters) followed by sprains and strains (4.2), asthma (4.1) and acute bronchitis (3.5). The more frequent problems managed in this age group were generally acute in nature and reflected the life stage of the patients (i.e. adolescence/young adulthood).

However, alarmingly, the tenth most common problem managed at these male encounters was drug abuse (2.5 per 100 encounters). The ICPC-2 classification of drug abuse includes the abuse of/addiction to/dependence on/withdrawal from illicit drugs, the illegal use of prescribed drugs, as well as the harmful use of other non-medical substances (e.g. glue). It excludes the abuse of/addiction to/dependence on alcohol, tobacco and medications prescribed to the patient. In this age group the most common drug abuse diagnosis was heroin addiction, which accounted for 31.8% of these problems (results not presented).

11.2 Male patients aged 25–34 years

There were 4,598 encounters with male patients aged between 25 and 34 years. The ten most commonly managed problems at these encounters are presented in Table 11.2. URTI remained the most commonly managed problem (7.1 per 100 encounters), although there was a significant decrease in its relative frequency of management compared with the younger age group. The rate of management of other acute conditions also decreased compared with the 15–24 male age group. This may be due to changes in attitude to illness or prevalence of illness in this age group. Immunisation rates remained constant across these age groups.

The psychological conditions of depression and anxiety were first included in the top ten problems managed for male patients in this age group. Depression was the third most commonly managed problem (3.9 per 100 encounters) and anxiety the ninth (2.2), though neither had appeared frequently in the 15–24 age group.

Back complaints and general check-ups were also included in the top ten problems managed in this age group, though they had not appeared in the younger age group.

The rate of management of drug abuse increased slightly in this age group (3.2 per 100 encounters) and became the fifth most commonly managed problem compared with a ranking of tenth in the 15–24 age group (2.5). For males aged between 25 and 34 years,

heroin addiction remained the most common diagnosis of this type, accounting for 37.2% of these drug abuse problems (results not presented).

Table 11.1: The ten most frequent problems managed at encounters with males aged 15–24 years

| Problems managed | Males 15–24 years (n = 3,412) | | |
|-----------------------------------|-------------------------------|-------------|-----------|
| | Rate per 100 encounters | 95% LCL | 95% UCL |
| Upper respiratory tract infection | 10.3 | 9.1 | 11.4 |
| Sprain/strain* | 4.2 | 3.4 | 4.9 |
| Asthma | 4.1 | 3.4 | 4.8 |
| Acute bronchitis/bronchiolitis | 3.5 | 2.8 | 4.1 |
| Acne | 3.2 | 2.6 | 3.8 |
| Tonsillitis* | 3.2 | 2.6 | 3.8 |
| Immunisation all* | 3.1 | 2.5 | 3.8 |
| Laceration/cut | 2.8 | 2.2 | 3.4 |
| Fracture* | 2.7 | 2.1 | 2.3 |
| Drug abuse ^(a) | 2.5 | 1.7 | 3.3 |
| <i>Subtotal (n, %)</i> | <i>1,350</i> | <i>31.8</i> | <i>..</i> |
| Total problems (n) | 4,246 | .. | .. |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

(a) The ICPC-2 classification of drug abuse includes the abuse of/addiction to/dependence on/ withdrawal from illicit drugs, the illegal use of prescribed drugs, as well as the harmful use of other non-medical substances (e.g. glue). It excludes the abuse of/addiction to/dependence on alcohol, tobacco and medications prescribed to the patient.

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Table 11.2: The ten most frequent problems managed at encounters with males aged 25–34 years

| Problems managed | Males 25–34 years (n = 4,598) | | |
|-----------------------------------|-------------------------------|-------------|-----------|
| | Rate per 100 encounters | 95% LCL | 95% UCL |
| Upper respiratory tract infection | 7.1 | 6.3 | 8.0 |
| Sprain/strain* | 4.2 | 3.5 | 4.8 |
| Depression* | 3.9 | 3.2 | 4.5 |
| Back complaint* | 3.6 | 2.9 | 4.2 |
| Drug abuse ^(a) | 3.2 | 1.9 | 4.5 |
| Immunisation all* | 3.2 | 2.5 | 3.9 |
| Acute bronchitis/bronchiolitis | 2.8 | 2.3 | 3.3 |
| General check-up | 2.7 | 1.9 | 3.5 |
| Anxiety* | 2.2 | 1.7 | 2.8 |
| Asthma | 2.2 | 1.8 | 2.7 |
| <i>Subtotal (n, %)</i> | <i>1,613</i> | <i>26.9</i> | <i>..</i> |
| Total problems (n) | 2,971 | .. | .. |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

(a) The ICPC-2 classification of drug abuse includes the abuse of/addiction to/dependence on/ withdrawal from illicit drugs, the illegal use of prescribed drugs, as well as the harmful use of other non-medical substances (e.g. glue). It excludes the abuse of/addiction to/dependence on alcohol, tobacco and medications prescribed to the patient.

Note: LCL—lower confidence limit; UCL—upper confidence limit.

11.3 Male patients aged 35–44 years

There were 5,410 encounters with male patients aged between 35 and 44 years included in the study. In this age group the most commonly managed problem was back complaint (6.2 per 100 encounters), and its rate of management was significantly higher than that reported for encounters with younger male patients aged 25–34 years (3.6).

URTIs continued to decline in this age group (5.7 per 100 encounters), being managed significantly less often than in younger age groups. Management of other acute conditions remained constant, as did the relative rate of general check-ups.

For the first time the chronic conditions of hypertension (4.7 per 100 encounters) and lipid disorders (2.6) arose in the top ten problems managed. Depression and anxiety were still managed frequently, ranking fourth and eighth respectively. Drug abuse is no longer included in the commonly managed problems in this age group. These results are shown in Table 11.3.

Table 11.3: The ten most frequent problems managed at encounters with males aged 35–44 years

| Problems managed | Males 35–44 years (n = 5,410) | | |
|-----------------------------------|-------------------------------|-------------|-----------|
| | Rate per 100 encounters | 95% LCL | 95% UCL |
| Back complaint* | 6.2 | 5.4 | 7.0 |
| Upper respiratory tract infection | 5.7 | 5.0 | 6.4 |
| Hypertension* | 4.7 | 4.1 | 5.3 |
| Depression* | 4.3 | 3.6 | 5.1 |
| Sprain/strain* | 3.3 | 2.8 | 3.8 |
| Acute bronchitis/bronchiolitis | 2.8 | 2.3 | 3.2 |
| Lipid disorder | 2.6 | 2.2 | 3.1 |
| Anxiety* | 2.5 | 2.0 | 3.0 |
| Asthma | 2.5 | 2.1 | 2.9 |
| General check-up | 2.4 | 1.9 | 2.9 |
| <i>Subtotal (n, %)</i> | <i>2,004</i> | <i>26.6</i> | <i>..</i> |
| Total problems (n) | 7,528 | .. | .. |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

Note: LCL—lower confidence limit; UCL—upper confidence limit.

11.4 Male patients aged 45–54 years

At the 5,526 encounters with male patients aged 45–54 years, hypertension became the most common problem (11.2 per 100 encounters), managed at more than double the rate at which it arose at encounters with males aged 35–44 years (4.7). The management of lipid disorders also almost doubled to 5.1 per 100 encounters (from 2.6 per 100 encounters in the 35–44 age group). Back complaints remained common, ranking second in relative frequency (5.6 per 100 encounters).

For the first time, diabetes arose in the top ten problems, being managed at a rate of 3.9 per 100 encounters.

Depression was again the fourth most commonly managed problem, its relative rate having not changed significantly across the age groups from 25 years onward. However, in the 45–54 age group the management of anxiety dropped out of the ten most common problems. Immunisation ranked within the top ten problems managed in this age group, although it was not apparent in the top ten at encounters with males in the 35–44 age group. However, its relative frequency of management was unchanged from the two youngest age groups (see Tables 11.1 and 11.2).

Management of the acute conditions URTI and acute bronchitis/bronchiolitis remained constant in this group compared with the previous age group. These results are reported in Table 11.4.

Table 11.4: The ten most frequent problems managed at encounters with males aged 45–54 years

| Problems managed | Males 45–54 years (n = 5,526) | | |
|-----------------------------------|-------------------------------|---------|---------|
| | Rate per 100 encounters | 95% LCL | 95% UCL |
| Hypertension* | 11.2 | 10.3 | 12.1 |
| Back complaint* | 5.6 | 4.9 | 6.3 |
| Lipid disorder | 5.1 | 4.5 | 5.7 |
| Depression* | 4.8 | 4.2 | 5.5 |
| Upper respiratory tract infection | 4.5 | 3.8 | 5.1 |
| Diabetes* | 3.9 | 3.3 | 4.4 |
| Acute bronchitis/bronchiolitis | 3.0 | 2.5 | 3.5 |
| Sprain/strain* | 2.5 | 2.0 | 3.0 |
| Immunisation all* | 2.5 | 2.0 | 3.0 |
| Asthma | 2.5 | 2.1 | 3.0 |
| <i>Subtotal (n, %)</i> | 2,519 | 30.6 | .. |
| Total problems (n) | 8,222 | .. | .. |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

Note: LCL—lower confidence limit; UCL—upper confidence limit.

11.5 Male patients aged 55–64 years

The ten most commonly managed problems at 5,000 encounters with male patients aged between 55 and 64 years who attended a GP in the BEACH study are presented in Table 11.5.

The most common condition managed was hypertension (16.4 per 100 encounters), its relative frequency being significantly higher in this age group than at encounters with younger age groups.

Lipid disorders became the second most frequently managed condition in this age group, managed at a rate of 6.8 per 100 encounters and this was significantly higher than in previous age groups. The management of diabetes (6.3 per 100 encounters) and immunisation (4.0) were also significantly more frequent in this age group compared with previous age groups.

Though they had not been included in the top ten problems at encounters with younger age groups, osteoarthritis (3.8 per 100 encounters) and ischaemic heart disease (IHD) (3.3 per 100) now arose in the top ten problems managed in this age group.

The management of depression, acute bronchitis/bronchiolitis and URTI remained constant. Back complaints were managed significantly less often in this age group (4.1 per 100 encounters) than at encounters with younger males.

Table 11.5: The ten most frequent problems managed at encounters with males aged 55–64 years

| Problems managed | Males 55–64 years (n = 5,000) | | |
|-----------------------------------|-------------------------------|---------|---------|
| | Rate per 100 encounters | 95% LCL | 95% UCL |
| Hypertension* | 16.4 | 15.3 | 17.5 |
| Lipid disorder | 6.8 | 6.1 | 7.5 |
| Diabetes* | 6.3 | 5.6 | 7.1 |
| Back complaint* | 4.1 | 3.5 | 4.7 |
| Immunisation all* | 4.0 | 3.4 | 4.7 |
| Depression* | 3.8 | 3.2 | 4.4 |
| Osteoarthritis* | 3.8 | 3.2 | 4.3 |
| Upper respiratory tract infection | 3.6 | 3.0 | 4.1 |
| Ischaemic heart disease* | 3.3 | 2.8 | 3.9 |
| Acute bronchitis/bronchiolitis | 2.6 | 2.1 | 3.1 |
| <i>Subtotal (n, %)</i> | 2,736 | 33.8 | .. |
| Total problems (n) | 8,098 | .. | .. |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

Note: LCL—lower confidence limit; UCL—upper confidence limit.

11.6 Male patients aged 65–74 years

There were 5,509 encounters with male patients aged between 65 and 74 years. The most commonly managed condition in these patients was hypertension (18.0 per 100 encounters). The relative rate of management of hypertension, diabetes and lipid disorders, the three most common conditions, did not significantly differ from that of the previous age group. This was also true in the management of osteoarthritis and acute bronchitis/bronchiolitis. However, depression and URTI became less important in relative terms, falling off the top ten list.

Immunisation and IHD were managed significantly more often (5.8 and 5.1 per 100 encounters respectively) in male patients between 65 and 74 years of age compared with the younger age group.

Chronic obstructive pulmonary disease (COPD), oesophageal disease and cardiac check-ups were included in the ten most frequently managed problems in this age group, though they had not occurred in previous age groups (Table 11.6).

Table 11.6: The ten most frequent problems managed at encounters with males aged 65–74 years

| Problems managed | Males 65–74 years (n = 5,509) | | |
|---------------------------------------|-------------------------------|---------|---------|
| | Rate per 100 encounters | 95% LCL | 95% UCL |
| Hypertension* | 18.0 | 16.9 | 19.2 |
| Diabetes* | 7.3 | 6.6 | 8.0 |
| Lipid disorder | 5.9 | 5.3 | 6.6 |
| Immunisation all* | 5.8 | 4.8 | 6.8 |
| Ischaemic heart disease* | 5.1 | 4.4 | 5.7 |
| Osteoarthritis* | 4.3 | 3.7 | 4.9 |
| Chronic obstructive pulmonary disease | 3.4 | 2.8 | 3.9 |
| Cardiac check-up* | 3.1 | 2.5 | 3.7 |
| Oesophageal disease | 3.0 | 2.5 | 3.5 |
| Acute bronchitis/bronchiolitis | 3.0 | 2.5 | 3.4 |
| <i>Subtotal (n, %)</i> | 3,244 | 34.7 | .. |
| Total problems (n) | 9,361 | .. | .. |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

Note: LCL—lower confidence limit; UCL—upper confidence limit.

11.7 Male patients aged 75+ years

There were 4,956 encounters with male patients aged 75 years or more included in the study. The ten most commonly managed problems in this age group are shown in Table 11.7. Chronic diseases predominated with hypertension remaining the most commonly managed problem (15.5 per 100 encounters), despite being managed at a significantly lower rate than at those encounters with males aged 65–74 years (18.0). IHD, osteoarthritis, immunisation and acute bronchitis/bronchiolitis were managed at the same relative frequency as in the previous age group.

The chronic conditions of heart failure and malignant neoplasms were among the most commonly managed problems in male patients aged 75+ years, though they had not appeared in the top ten problems in the younger age groups.

The management rate of diabetes was significantly lower (5.2 per 100 encounters) in this age group than in the younger age group of 65 to 74 years (7.3). In contrast, COPD was managed at a significantly higher relative rate in this age group (4.7 per 100 encounters) compared with the previous age group (3.4).

General check-ups were included in the most common problems managed in this group (2.9 per 100 encounters) for the first time since the 35–44 age group.

Table 11.7: The ten most frequent problems managed at encounters with males aged 75+ years

| Problems managed | Males 75+ years (n = 4,956) | | |
|---------------------------------------|-----------------------------|---------|---------|
| | Rate per 100 encounters | 95% LCL | 95% UCL |
| Hypertension* | 15.5 | 14.2 | 16.7 |
| Ischaemic heart disease* | 5.8 | 5.1 | 6.6 |
| Osteoarthritis* | 5.5 | 4.8 | 6.3 |
| Heart failure | 5.5 | 4.8 | 6.3 |
| Diabetes* | 5.2 | 4.5 | 5.8 |
| Chronic obstructive pulmonary disease | 4.7 | 4.0 | 5.4 |
| Immunisation all* | 4.7 | 3.7 | 5.6 |
| Acute bronchitis/bronchiolitis | 3.2 | 2.6 | 3.7 |
| Malignant neoplasm skin | 3.2 | 2.6 | 3.7 |
| General check-up | 2.9 | 2.4 | 3.5 |
| <i>Subtotal (n, %)</i> | 2,780 | 32.4 | .. |
| Total problems (n) | 8,573 | .. | .. |

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

Note: LCL—lower confidence limit; UCL—upper confidence limit.

11.8 Overview of problems managed across age groups

Figures 11.1 to 11.4 demonstrate trends in the rates of management of specific problems across male age groups. The selected diagnoses include depression, drug abuse, hypertension, lipid disorders, diabetes, URTI, asthma, and back complaints.

The management of depression showed an interesting trend, its relative frequency having almost a bell curve distribution (Figure 11.1). Male patients in the age groups of 15–24 years and over 65 years had the lowest relative rate of management (2.2 and 2.1 per 100 encounters). The curve peaked at encounters with male patients aged between 45 and 54 years (4.8 per 100 encounters).

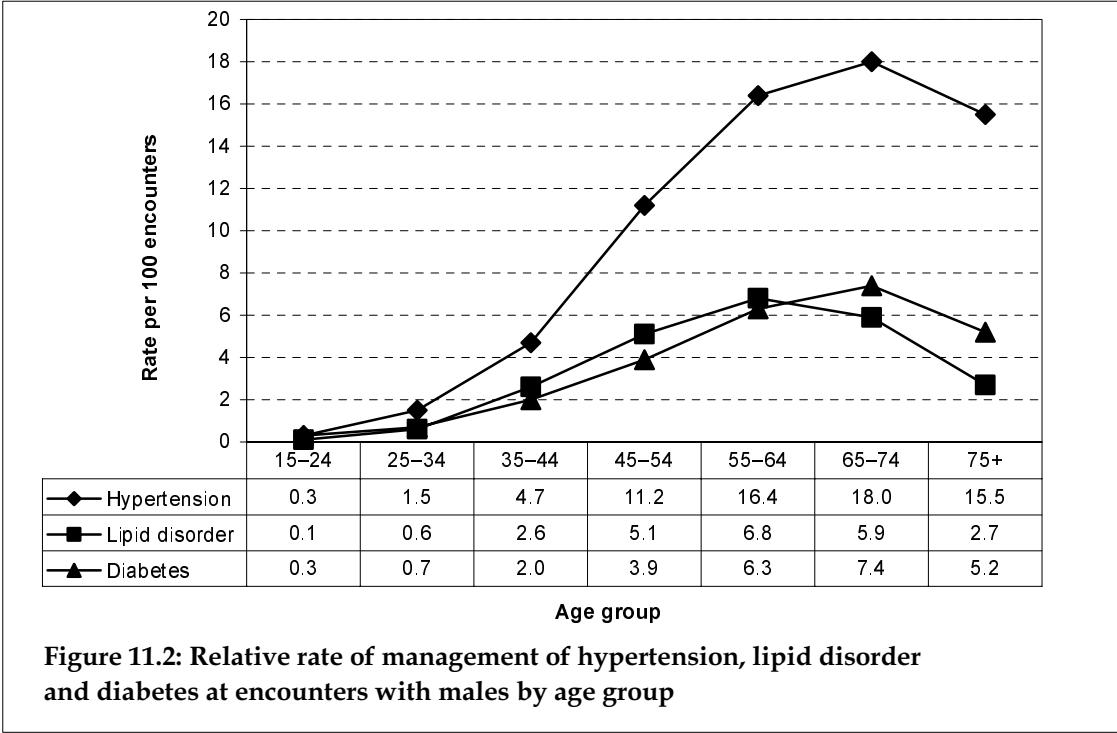
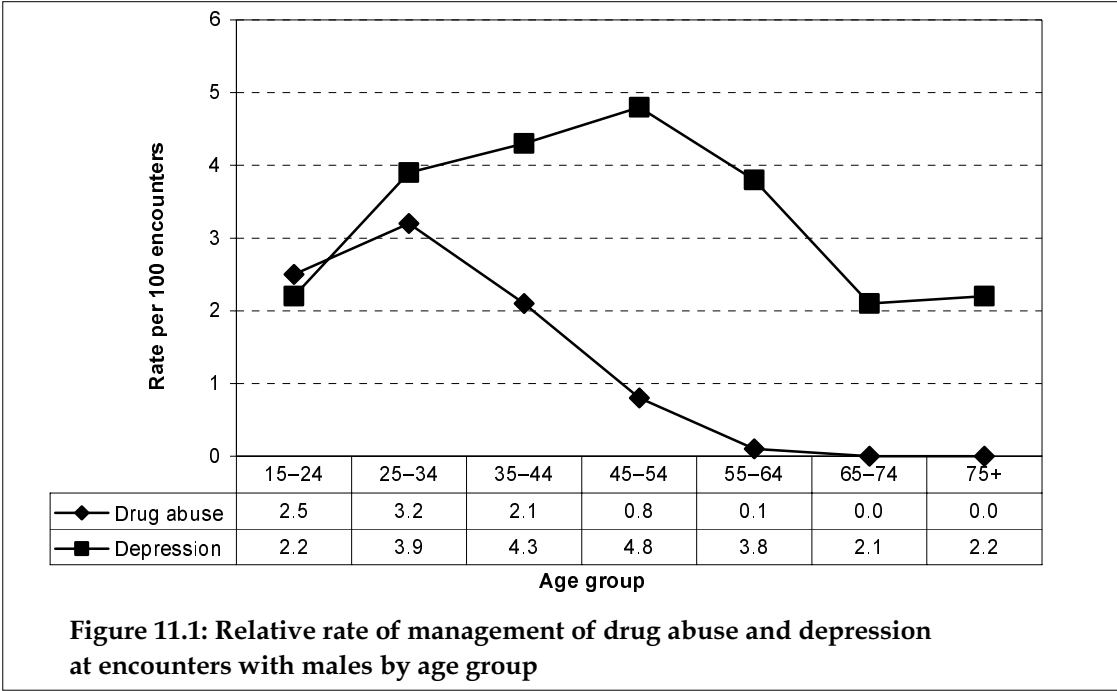
Drug abuse was most frequently managed at encounters with male patients aged between 25 and 34 years (3.2 per 100 encounters). In males aged 15–24 years it had the second highest management rate (2.5 per 100 encounters). Drug abuse was far less frequently managed in patients over the age of 45 (Figure 11.1).

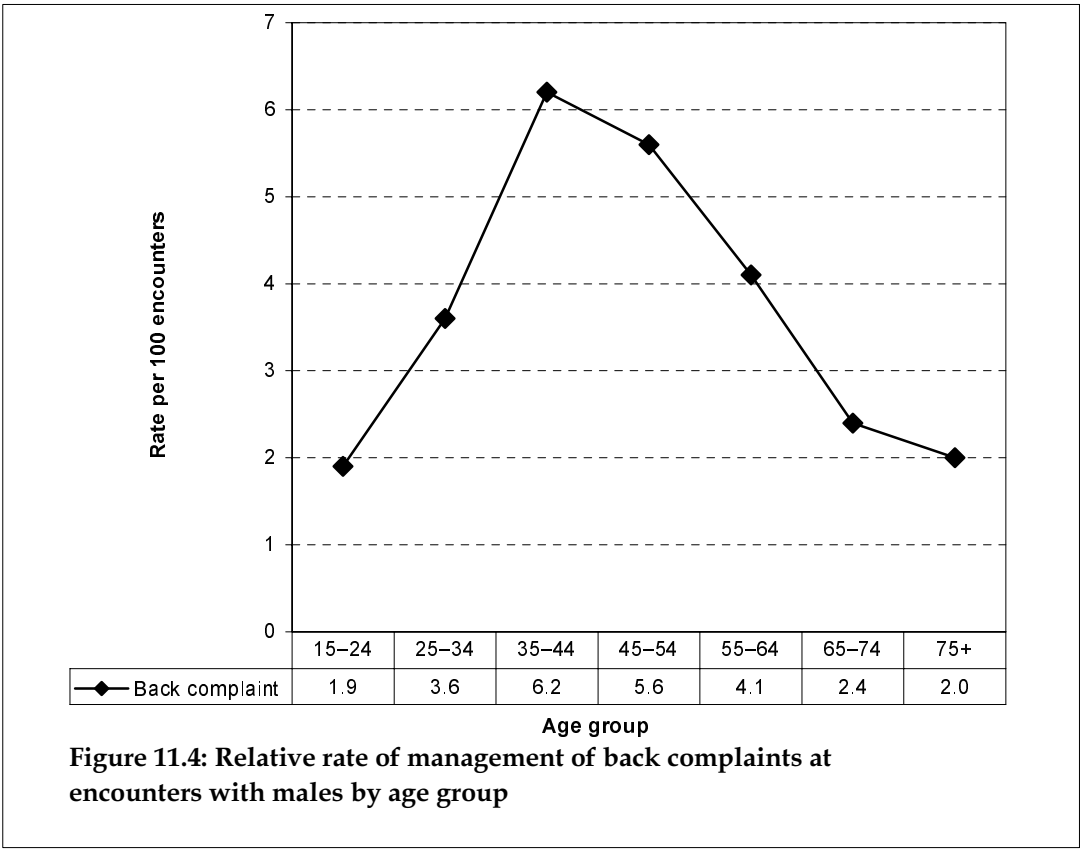
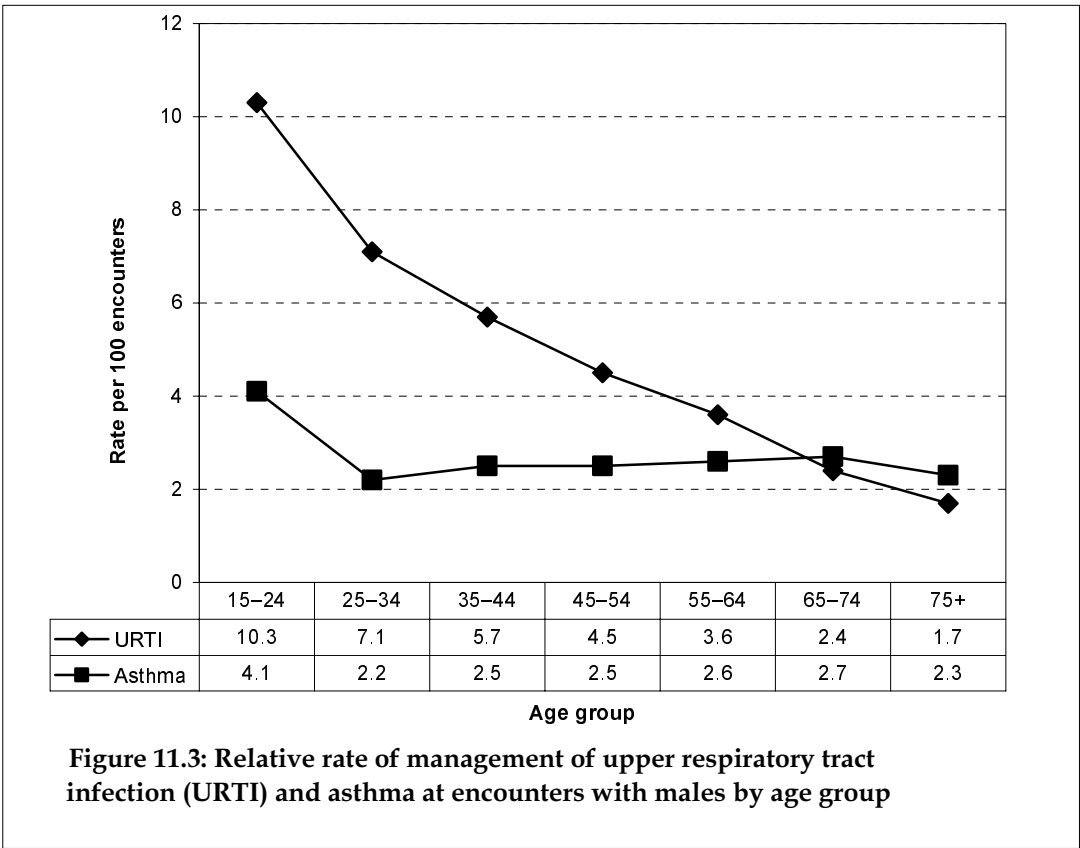
Hypertension was the most frequently managed problem in male patients at GP encounters (Table 6.3). Figure 11.2 shows that in terms of its management by age group, from 35 years onward its relative frequency climbs steadily until it peaks in the 65–74 year age group (18.0 per 100 encounters). The age-related pattern of lipid disorder and diabetes management was very similar. Lipid disorders were most frequently managed in the 55–64 age group (6.8 per 100 encounters) and diabetes peaked in the 65–74 age group (7.4 per 100) (Figure 11.2).

Figure 11.3 shows the age-related patterns in the relative rate of management of URTI and asthma. URTI was managed most frequently at encounters with male patients aged between 15 and 24 years (10.3 per 100 encounters) and then gradually declined to its lowest point in

patients aged 75 years and over (1.7 per 100). Asthma was also managed most frequently in the youngest age group (4.1 per 100 encounters). Although there was a decline in the management rate of asthma in the 25–34 age group (2.2 per 100 encounters), this rate then remained largely unchanged across all the following age groups.

The relative rate of back complaints climbed sharply from 15 years to peak in the 35–44 age group (6.2 per 100 encounters) and then steadily decreased to a low of 2.0 per 100 encounters in male patients aged 75 years and over (Figure 11.4).





12 Patient wellbeing and risk factors

Since BEACH began in April of 1998, a section on the bottom of each encounter form has been allocated to investigate aspects of patient health or health care delivery not covered by the consultation-based information (see Appendix 1). These additional substudies are referred to as SAND (Supplementary Analysis of Nominated Data). The substudies reported in this chapter provide self-reported data about patient wellbeing, height and weight (to calculate BMI), smoking status and alcohol consumption from subsamples of male and female patients.

12.1 Patient-assessed wellbeing by patient sex

Self-assessed wellbeing was measured using the overall health evaluation question from the SF-36 (Medical Outcomes Study questionnaire) designed as a generic indicator of health status⁵⁷. This assessment of wellbeing provides an indication of the impact of health problems on the patient⁵⁸.

GPs were instructed to ask the patients (or their carer in the case of children):

- In general would you say your health is:
 - Excellent?
 - Very good?
 - Good?
 - Fair?
 - Poor?

There were 12,465 male and 18,922 female respondents to this question. The comparison of self-perceived wellbeing between the sexes showed one significant difference in the category of 'very good.' Male patients rated their health as 'very good' significantly less often (27.2%) than did female patients (29.3%). Although not significant in most categories, there is a slight trend for males to view their health less positively than females (Table 12.1).

Table 12.1: Patient-assessed wellbeing by patient sex

| | Male (n = 12,465) | | | Female (n = 18,922) | | |
|-----------|-------------------|---------|---------|---------------------|---------|---------|
| | Per cent | 95% LCL | 95% UCL | Per cent | 95% LCL | 95% UCL |
| Excellent | 13.1 | 12.1 | 14.2 | 14.0 | 13.1 | 14.9 |
| Very good | 27.2 | 26.2 | 28.1 | 29.3 | 28.5 | 30.2 |
| Good | 34.1 | 33.0 | 35.1 | 33.1 | 32.2 | 33.9 |
| Fair | 19.2 | 18.4 | 20.0 | 17.9 | 17.1 | 18.6 |
| Poor | 6.4 | 5.5 | 7.4 | 5.7 | 5.0 | 6.4 |

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit.

12.2 Patient body mass by patient sex

The GPs were instructed to ask the patients (or their carer in the case of children):

- What is your height in centimetres?
- What is your weight in kilograms?

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

The BMI for an individual is calculated by dividing weight (kilograms) by height (metres) squared. A person with a BMI of less than 20 is considered underweight⁵⁹, 20–24 is normal, 25–29 overweight and more than 30 is considered to be obese⁶⁰.

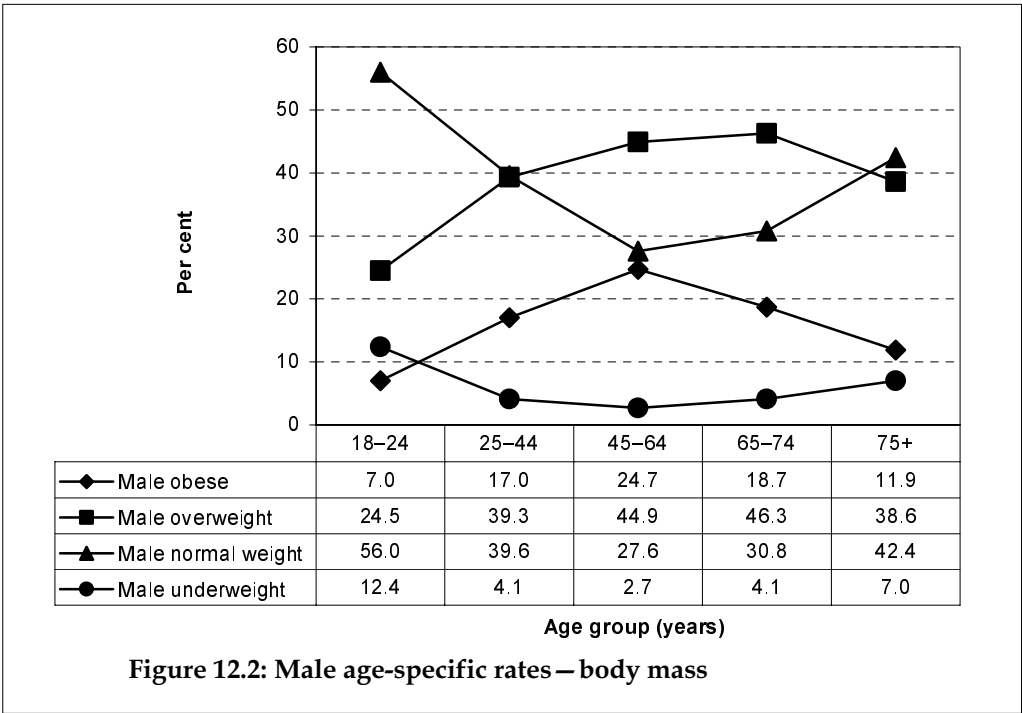
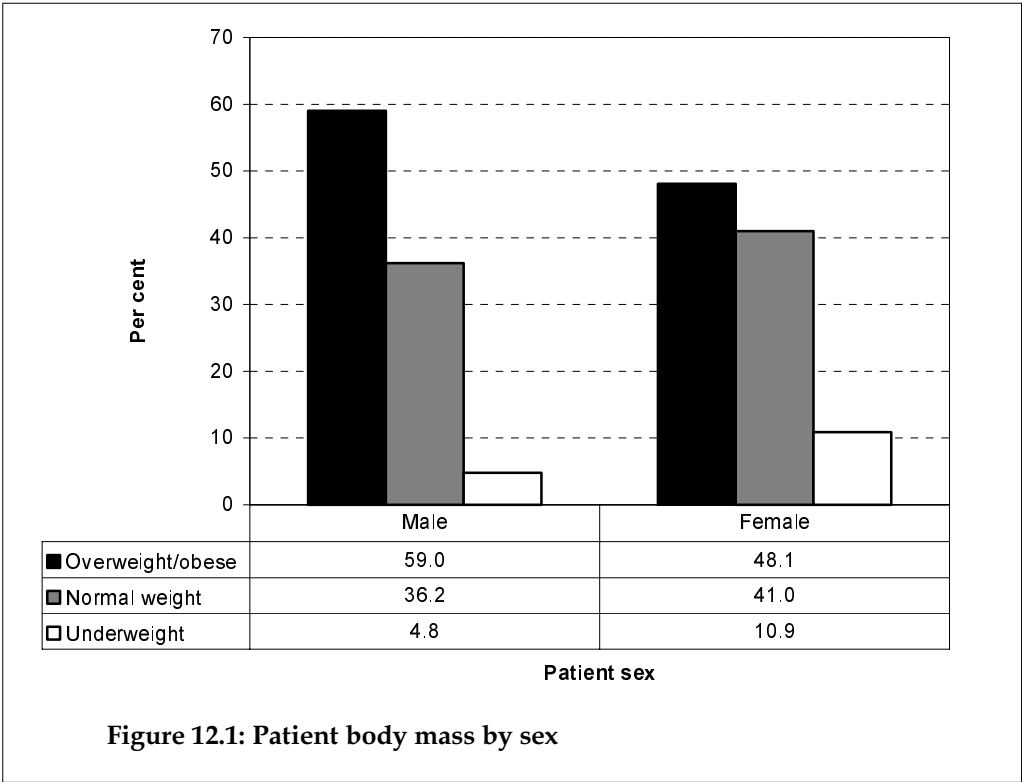
Responses to the height and weight questions were received from 13,062 male patients and 19,655 female patients. Male patients were less likely than females patients to be obese (18.1% compared with 20.0%) but far more likely than females to be overweight (40.9% compared with 27.9%). Males were less likely to be of a normal weight (36.2%) or underweight (4.8%) compared with females (41.0% and 10.9% respectively) (Table 12.2).

Figure 12.1 shows this distribution diagrammatically with the obese and overweight categories combined. The combination of these two categories shows that the proportion of male respondents who were overweight or obese was much higher than in the female sample. Figure 12.2 shows the age-specific rates of body mass for male patients. Obesity was most common in males aged between 45 and 64 years (24.7%). Males were most likely to be overweight in the 65–74 age group (46.3%), closely followed by those in the 45–64 age group (44.9%).

Table 12.2: Patient body mass (aged 18+ years) by patient sex

| | Male (n = 13,062) | | | Female (n = 19,655) | | |
|-------------|-------------------|---------|---------|---------------------|---------|---------|
| | Per cent | 95% LCL | 95% UCL | Per cent | 95% LCL | 95% UCL |
| Obese | 18.1 | 17.3 | 19.0 | 20.2 | 19.5 | 20.9 |
| Overweight | 40.9 | 39.9 | 41.8 | 27.9 | 27.2 | 28.7 |
| Normal | 36.2 | 35.2 | 37.2 | 41.0 | 40.1 | 41.8 |
| Underweight | 4.8 | 4.0 | 5.5 | 10.9 | 10.3 | 11.5 |

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit.



12.3 Patient smoking status by patient sex

The GPs were instructed to ask the patients (18+ years):

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

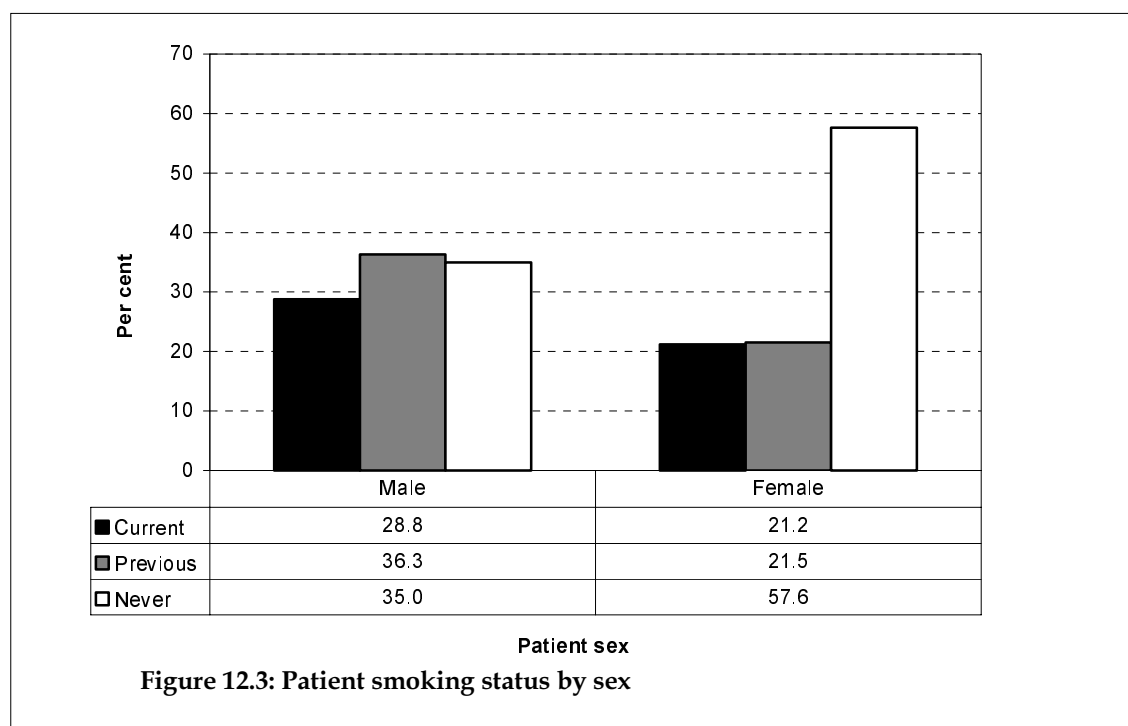
There were 12,230 male and 19,930 female patients for whom smoking status was reported. Male patients were less likely to have never smoked (35.0%) than females (57.4%). Significantly greater proportions of male patients were previous (36.3%) or current smokers (23.4%) compared with female patients (21.5% and 16.2% respectively) (Table 12.3). Smoking status is shown diagrammatically in Figure 12.3 with the current smoking group incorporating both occasional and daily smokers.

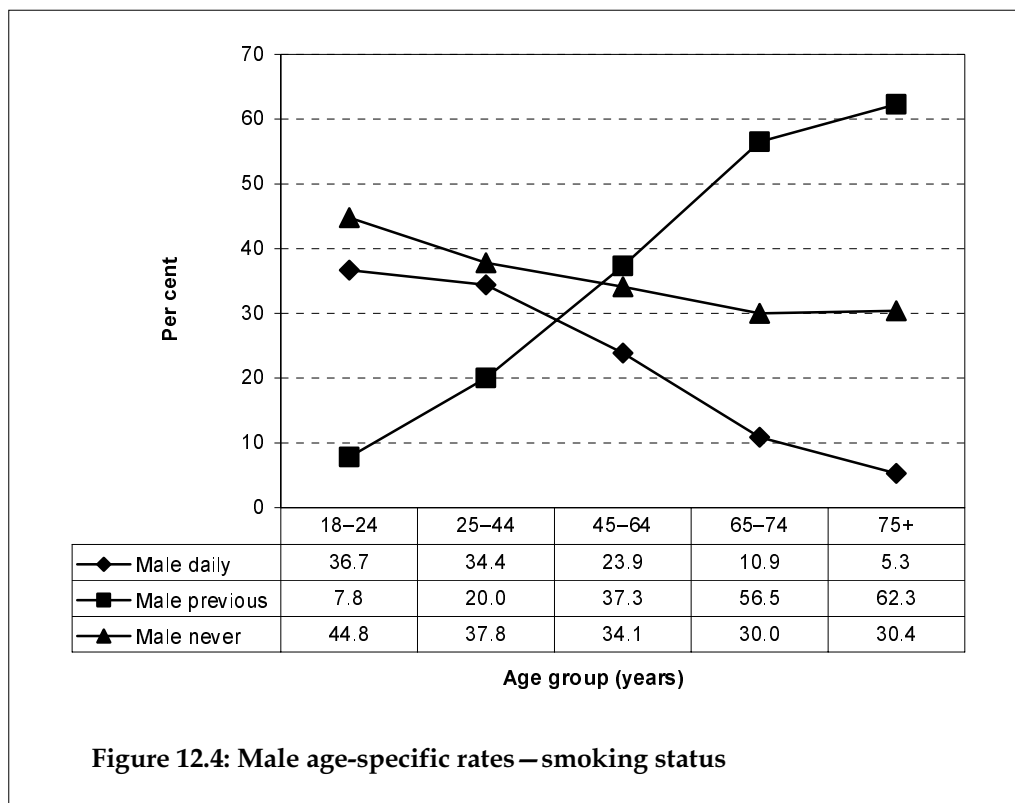
Figure 12.4 shows graphically the age-specific rates of smoking status for male patients. Males aged between 18 and 24 years demonstrated the highest rates of daily smoking (36.7%) followed closely by those aged 25–44 years (34.4%).

Table 12.3: Patient smoking status (18+ years) by patient sex

| Smoking status | Male (n = 12,230) | | | Female (n = 19,930) | | |
|----------------|-------------------|---------|---------|---------------------|---------|---------|
| | Per cent | 95% LCL | 95% UCL | Per cent | 95% LCL | 95% UCL |
| Daily | 23.4 | 22.3 | 24.5 | 16.2 | 15.4 | 16.9 |
| Occasional | 5.4 | 4.4 | 6.4 | 5.1 | 4.5 | 5.6 |
| Previous | 36.3 | 35.1 | 37.4 | 21.5 | 20.7 | 22.2 |
| Never | 35.0 | 33.9 | 36.0 | 57.4 | 56.3 | 58.4 |

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit.





12.4 Patient-reported alcohol consumption by patient sex

To measure alcohol consumption, BEACH uses three items from the World Health Organization (WHO) Alcohol Use Disorders Identification Test (AUDIT)⁶¹, with slightly modified wording and scoring for an Australian setting⁶². Together these three questions assess 'at-risk' alcohol use. The scores for each question range from 0 to 4. A score of 5+ for males or 4+ for females suggests that the person's drinking level is placing them at risk.

GPs were instructed to ask the patient (18+ years):

- How often do you have a drink containing alcohol?
 - Never
 - Monthly or less
 - Once a week
 - 2-4 times a week
 - 5+ times a week

- How many standard drinks do you have on a typical day when you are drinking? _____

- How often do you have 6 or more standard drinks on one occasion?
 - Never
 - Monthly or less
 - Once a week
 - 2-4 times a week
 - 5+ times a week

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

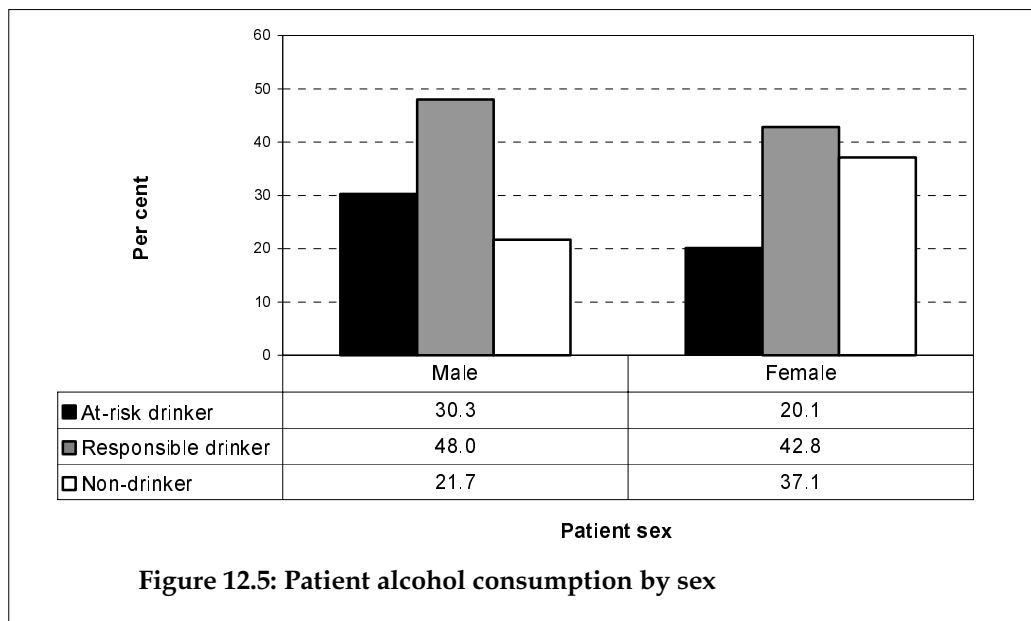
The 13,076 male and 19,832 female patients who answered the three alcohol consumption questions at the GP encounter were classified as either at-risk drinkers, responsible drinkers, or non-drinkers (Table 12.4). Male patients were significantly less likely to be non-drinkers (21.7%) than were female patients (37.1%). Male patients were significantly more likely to be at-risk drinkers (30.3%) or responsible drinkers (48.0%) than were female patients (20.1% and 42.8% respectively). These results are shown diagrammatically in Figure 12.5.

Figure 12.6 shows the male age-specific rates of alcohol consumption. Males in the 18–24 age group reported the highest rates of at-risk alcohol consumption (39.8%); the age-specific rate decreased steadily with age to 15.2% in those aged 75 years or over. Of the male patients who drank alcohol, 35.0% consumed alcohol at levels considered to place them at risk. Further, 47.3% of male drinkers aged between 18 and 24 years drank at risk levels.

Table 12.4: Patient-reported alcohol consumption (18+ years) by patient sex

| Alcohol intake status | Male (n = 13,076) | | | Female (n = 19,832) | | |
|-----------------------|-------------------|---------|---------|---------------------|---------|---------|
| | Per cent | 95% LCL | 95% UCL | Per cent | 95% LCL | 95% UCL |
| At-risk drinker | 30.3 | 29.2 | 31.4 | 20.1 | 19.2 | 21.0 |
| Responsible drinker | 48.0 | 46.9 | 49.1 | 42.8 | 41.8 | 43.8 |
| Non-drinker | 21.7 | 20.6 | 22.8 | 37.1 | 35.9 | 38.4 |

Note: Shading indicates statistically significant differences. LCL—lower confidence limit; UCL—upper confidence limit.



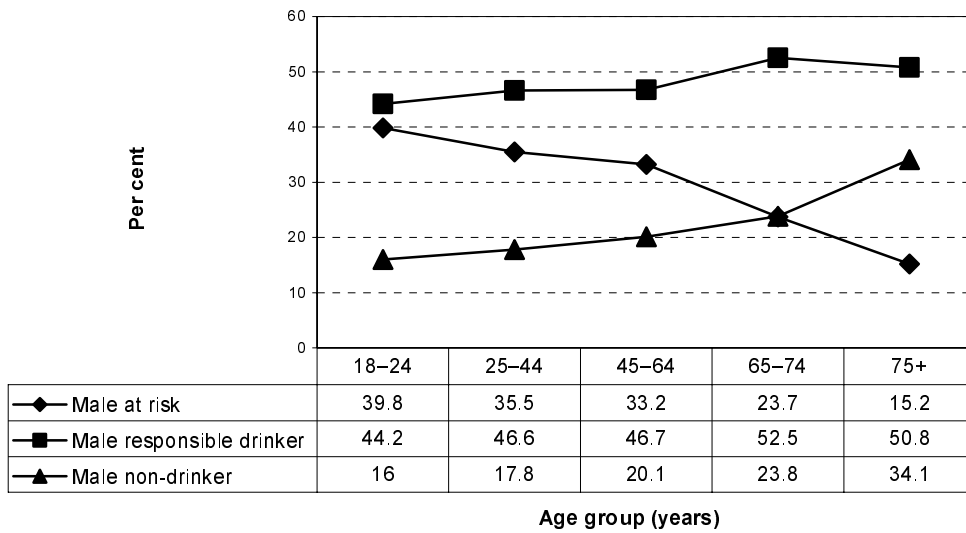


Figure 12.6: Male age-specific rates – alcohol use

13 Work-related problems managed at male encounters

It was demonstrated in Table 4.1 that encounters with male patients were significantly more likely to be claimable through workers compensation. Irrespective of whether the encounter was claimable through workers compensation or Medicare, the GPs were asked to judge, using their clinical experience, which problems were likely to be work-related. These work-related problems are examined in this chapter.

13.1 Characteristics of male patients with work-related problems managed

Table 13.1 demonstrates characteristics of male patients with work-related problems managed. These patients were less likely to hold a health care card in comparison to the overall male population in the sample, but were no more or less likely to be of non-English-speaking background. Compared with the overall male representation in the sample, males with work-related problems tended to be new to the practice. However this was not significant, possibly due to the small sample size of males with work-related problems. There were no other differences in the characteristics of these patients compared with the total male encounter sample.

Figure 13.1 provides a graphic view of the age distribution of male patients with work-related problems managed. More than 50% of these male patients were aged between 25 and 44 years. Figure 13.2 shows the age-specific distribution of encounters where work-related problems were managed. At encounters with males aged under 25 years, 2.1% had a work-related problem managed. However, one in ten encounters with male patients aged between 25 and 44 years involved a work-related problem. This rate dropped to one in twenty encounters with males aged 45–64 years and was very low at encounters with patients aged 65 years and over.

Table 13.1: Characteristics of male patients with work-related problems managed and all male patients

| Patient variable | Male (n = 2,012) | | | Male (n = 44,308) | | |
|---------------------------------|-------------------------|---------|---------|-------------------------|---------|---------|
| | Rate per 100 encounters | 95% LCL | 95% UCL | Rate per 100 encounters | 95% LCL | 95% UCL |
| Health care card holders | 13.6 | 7.9 | 18.8 | 36.2 | 34.5 | 37.8 |
| Non-English-speaking background | 8.7 | 0.0 | 22.2 | 8.1 | 4.0 | 12.2 |
| New patient | 12.8 | 3.2 | 22.4 | 8.1 | 7.2 | 9.0 |

Note: LCL—lower confidence limit; UCL—upper confidence limit.

Only those patient variables that accounted for > 1.5 per 100 work-related encounters in male patients are included.

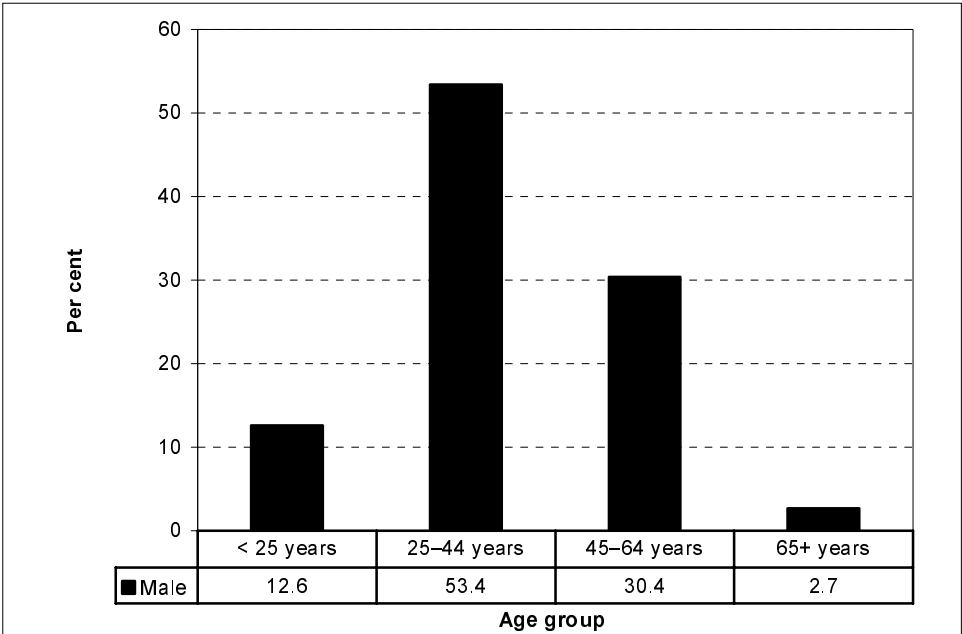


Figure 13.1: Age distribution of male patients at work-related encounters

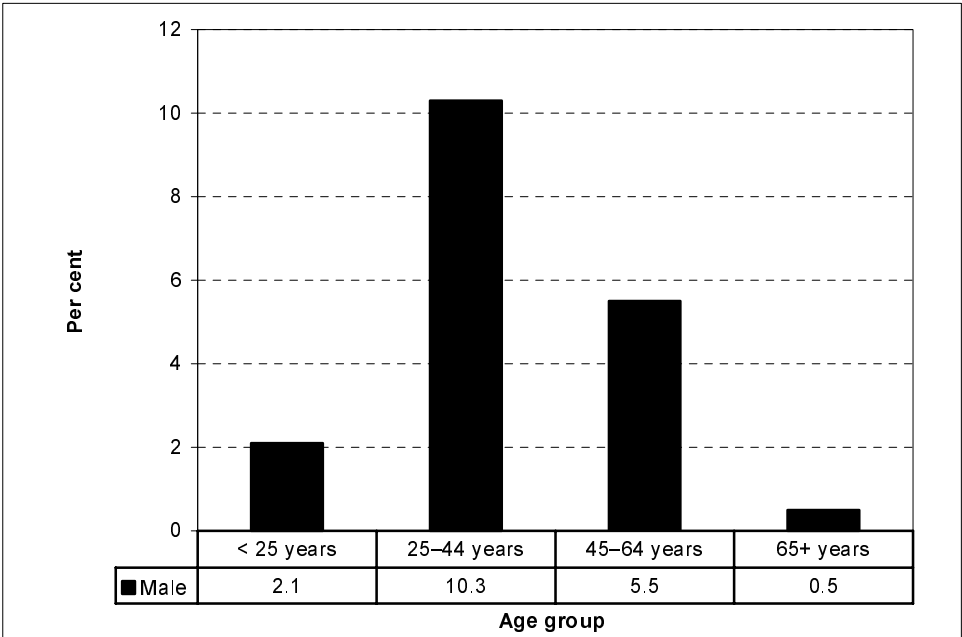


Figure 13.2: Age-specific rate of male encounters involving a work-related problem

13.2 Most common work-related problems managed for male patients

Table 13.2 shows the most commonly managed work-related problems for encounters with male patients. These were mostly related to physical injuries, especially those of a musculoskeletal nature. The most frequently managed work-related problems were back complaints (17.3% of work-related problems), sprains and strains (12.1%) and other musculoskeletal conditions (6.7%). Work-related psychological disorders of depression and anxiety in male patients were also commonly managed at these encounters.

Table 13.2: Most common work-related problems managed for male patients

| Problem managed ^(a) | Male (n = 2,012) | |
|--|------------------|---|
| | Number | Per cent of total work-related problems |
| Back complaint* | 366 | 17.3 |
| Sprain/Strain* | 257 | 12.1 |
| Other musculoskeletal injury | 142 | 6.7 |
| Laceration/cut | 109 | 5.2 |
| Fracture* | 82 | 3.9 |
| General check-up | 73 | 3.4 |
| Other skin injury | 68 | 3.2 |
| Depression* | 66 | 3.1 |
| Neck syndrome (excluding osteoarthritis) | 49 | 2.3 |
| Bursitis/tendonitis/synovitis | 49 | 2.3 |
| Shoulder syndrome (excluding osteoarthritis) | 47 | 2.2 |
| Acute internal knee damage | 45 | 2.1 |
| Tennis elbow | 31 | 1.5 |
| Foreign body in eye | 31 | 1.5 |
| Acute stress reaction | 30 | 1.4 |
| Anxiety* | 27 | 1.3 |
| Osteoarthritis* | 26 | 1.2 |
| Bruise/contusion | 22 | 1.1 |
| <i>Subtotal (n,%)</i> | <i>1,518</i> | <i>75.4</i> |
| Total (n,%) | 2,012 | 100.0 |

(a) Only those work-related problems that accounted for > 1% of total work-related problems managed for male patients are included.

* Includes multiple ICPC-2 and ICPC-2 PLUS codes (see Appendix 3).

14 Discussion

Approximately 80% of the population attend a general practitioner in any one year⁶³. Medicare and Australian Bureau of Statistics (ABS) data have demonstrated that different proportions of the male and female populations attend GPs and that they do so at different rates (Section 5.2). Comparisons of morbidity and its management at GP encounters showed a very different pattern for male and female patients.

The male population

Male patients accounted for a lower proportion (42.7%) of total GP encounters in this study. This reflects the Medicare and ABS data which show that fewer Australian males attend GPs (at least once in the year), and those that do attend do so less frequently than females (as shown in Section 5.2). This is in line with the findings of previous studies that indicate males attend health services¹⁶ and GPs in particular^{18,64} less often than females.

Age-sex comparisons of the characteristics of people attending GPs, based on Medicare and ABS data, (Section 5.2) demonstrated that males attended GPs at a rate of 5.1 encounters per annum (p.a.) compared with a rate of 6.2 p.a. for females. Data on Medicare services (45% of which are GP-related) confirm this trend, with males in 1997–98 using on average 8.7 services per person p.a. compared with 12.4 p.a. for females¹⁶. The GP-population patterns identified from the ABS and Medicare data demonstrate that under the age of 15, male patients attend GPs more often than females. However, from the age of 15, males have lower attendance rates than females, which corresponds with earlier GP-Medicare data¹⁷. However, Medicare data do not accurately represent all the GP encounters. BEACH data have shown that between 6% and 8% of GP encounters were not claimable from Medicare. These include encounters that were funded by the Commonwealth Department of Veterans' Affairs, workers compensation, the States or by some other means; and encounters that did not involve a charge or were indirect (i.e. patient not seen).

Reason for encounters and problems managed

The data show that although males and females reported similar numbers of RFEs, GPs managed fewer problems at encounters with males. This did not support a previous finding that males were less likely to bring up further health issues at GP encounters²⁰. Female patients had an equivalent rate of RFEs and problems managed whereas males had a lower rate of problems managed than RFEs reported. This may be due to multiple RFEs being treated in the management of one problem (e.g. multiple symptoms of one disease) or it may suggest that GPs are not managing all presented RFEs at male encounters. It may be that males and females differ in the way they report their health⁶⁴⁻⁶⁶ resulting in GPs interpreting and managing male and female problems in different ways.

Encounters with male patients were more likely to have RFEs of a physical nature. This supports the theory that males usually attend GPs with physical, tangible conditions^{7,20-22}. The higher rates of procedural treatments (e.g. excisions or removal of tissue) performed at encounters with male patients and the pattern of the most frequently managed problems also demonstrate the tendency of male patients to have physical conditions treated. However, psychological conditions were managed at encounters with males at a higher rate than these conditions were reported as the RFE. This suggests that some GPs recognise the tendency of male patients to under-report psychological symptoms²². Despite this, GPs

treated (with medications and counselling) psychological conditions (especially depression) in females much more often than in males.

On each encounter recording form there was space for the management of up to four problems to be recorded. Encounters with males were more likely to have only one problem managed and less likely to have three problems managed. Male encounters were more likely to be standard consultations and less likely to be long consultations. These results suggest that at GP encounters males had shorter consultations than females. It is possible that the Medicare item number distribution reflects the fact that there were fewer problems managed at encounters with males. However, it is also possible that additional problems were not managed because the consultation was shorter. Less time spent at GP encounters has been associated with less provision of preventive care⁶⁷ and this has implications for the level of preventive care being provided to male patients.

Multiple logistic regression analyses demonstrate differences in problems managed between the sexes after the effect of other independent predictors were controlled. The social and demographic significant independent predictors were found to be patient age; GP age; GP sex; practice location; whether the patient was a concession cardholder; and status to practice (whether a new or existing patient). Other social variables including socioeconomic status (as defined by the SEIFA index), non-English-speaking background, Indigenous status and whether the patient lived in a rural or urban area were not found to be related to the patient's sex at the encounter. Previous studies had identified socioeconomic status^{25,26,68,69}, Indigenous status⁷⁰ and rural or urban area of residence⁷¹ to be significant factors on the health of men, although these were not reflected as significant factors in the care of males in the current study.

In Australia, psychological problems are equally prevalent in males and females, occurring most commonly (27%) between the ages of 18 and 24 years⁷². Earlier studies found that females describe more psychological symptoms and have more psychological problems managed than males^{22,64,73}. In contrast, the BEACH data showed no differences in the rates of psychological RFEs and management of psychological problems (both before and after adjustment) for male and female patients. This may reflect the equal prevalence of psychological problems in both sexes in the community⁷². However, GPs are providing psychological counselling and psychological prescriptions significantly more often at encounters with females than they are with males. This suggests that while there may be increased awareness of psychological conditions among males, females were more likely to have these treated by the GP, particularly with psychological medications and counselling.

The types of mental illnesses differ between the sexes, with males more likely to have substance use disorders and less likely to have anxiety and affective disorders^{72,74}. The high rates of alcohol and tobacco consumption demonstrated in the SAND male sample may be indicative of these substance use disorders. The high rates of alcohol and tobacco consumption and the fact that drug abuse was one of the ten most frequently managed problems in males aged between 15 and 34 years indicate a high rate of substance use disorders in young male patients. This problem of substance use is further compounded by Hanninen and Aro's finding that young males cope with depressive symptoms with substance use⁷⁵. While it has been shown that these substance use disorders are highest in the 18-24 male age group⁷⁶, the current study indicates that the rates remain relatively high until men reach 45 years of age.

The top three types of RFEs at encounters with both males and females were general and unspecified issues, respiratory conditions and musculoskeletal conditions. This reflected the findings of the 1995 National Health Survey which also found that, for both males and females, the most common reasons for seeing a doctor were respiratory conditions, check-

ups and musculoskeletal conditions, with no difference in rates between the sexes³. In this study, however, male patients reported significantly higher rates of respiratory and musculoskeletal conditions than females. This suggests that while the prevalence of respiratory and musculoskeletal conditions in the community does not differ between the sexes, males present more frequently to GPs with these conditions.

The ABS found that 10 of the 18 disease categories defined as 'serious' were more prevalent in males³. These serious disease categories were not directly comparable with BEACH data. However, using the ABS definition of serious diseases (i.e. conditions with a high probability of serious complications or recurring disability, or those that may require surgical intervention)³, the most frequently managed problems from the BEACH data could be classified as either serious or minor. The results indicate that the most frequently diagnosed problems classifiable as serious (i.e. back complaints, diabetes mellitus and lipid disorders) occurred significantly more often at encounters with male patients than at those with female patients. This suggests that the conditions GPs managed for male patients in the BEACH study are more 'serious', supporting the findings of the National Health Survey.

Cardiovascular disease, in this study, was the fourth most commonly managed problem group for both male and female patients. This rate of management did not reflect its status as the highest cause of death in people of both sexes². The rate of management of cardiovascular problems was significantly higher at encounters for male patients than at those with females, which may relate to males having higher morbidity and consequently higher cardiovascular mortality². Alternatively, this higher rate of management could suggest that males are most likely to visit a GP when they are between the ages of 45 and 74 years when cardiovascular conditions are prevalent.

Management

There was no overall difference in the rate of prescriptions written for male and female patients in the current study. This did not reflect previous ABS findings, which found that women took more medications overall than men⁷⁶. However the ABS's overall medication group included vitamins and self-prescribed medications (e.g. paracetamol) in addition to medications prescribed by health professionals (including GPs). This suggests that the higher medication rates for women reported by the ABS may reflect higher rates of self-medication by women rather than higher GP prescribing rates. An earlier study by Sayer and Britt conducted in 1990-91, using similar methodology to BEACH, reported GP prescribed medications by group using both univariate and multivariate analyses⁷⁷. Similar significant findings were found when the current study was compared with this earlier work by Sayer and Britt⁷⁷. In BEACH, differences in prescribing rates for male and female patients were apparent within specific medication groups and subgroups, but these reflected differences in the types of problems managed, with male patients having higher prescription rates than female patients for cardiovascular, respiratory, and musculoskeletal conditions.

Pathology tests were ordered at a significantly lower rate at encounters with male patients, than at those with female patients. This difference is explained to a certain extent by sex-specific biological conditions to which females are more susceptible (e.g. urinary tract infections resulting in urine tests, and Pap smears to check for cervical cancer). The higher rates of thyroid function tests are related to GPs' investigations of female patients with thyroid problems and weakness/tiredness⁷⁸.

Age-related morbidity

The age-specific analysis of morbidity managed at male encounters demonstrated some interesting patterns. The morbidity of young men (15–34 years) was dominated by acute, physical conditions. This is not surprising, as young adults tend to view health in terms of physical wellbeing⁷⁹. However, alarmingly, drug abuse was one of the ten most frequently managed problems in this age group. The definition of drug abuse (in ICPC-2) and illicit drug use (used in other reports) are similar: use of those drugs that are illegal to possess or drugs that are not illegal to possess but whose inappropriate use is illicit^{2,51}. In the BEACH study, drug abuse was managed most commonly in patients aged between 25 and 34 years. This is also the age group in which the associated burden of disease is greatest⁶⁸. The 2001 National Drug Strategy Household Survey (NDSHS) found that males in every age group were more likely than females to be recent drug users (40% compared with 34%) and this peaked in the 20–29 year age group⁸⁰. The BEACH study found that from 45 years onward the management of drug abuse in males was relatively low. This drop off in older ages was also seen in the NDSHS⁸⁰. This may be because people aged over 45 years were not as exposed to drugs in the community as younger age groups are. Alternatively, the high rate of drug abuse being managed at GP encounters with young males may reflect trusting relationships with their GPs. This has been determined to be an important factor in young adults between 14 and 17 years of age seeking health care from GPs⁷⁹. Heroin addiction was the most commonly managed type of drug abuse in these young male patients in BEACH, whereas the 2001 NDSHS found that marijuana was the most commonly used illicit drug. This suggests that drug abuse was commonly managed at GP encounters because GP monitoring is needed for patients to attend methadone and other prescription drug programs. Further, it is less likely that marijuana use comes to the attention of the GP.

In 1995 the AIHW reported the ten most frequently self-reported conditions of males aged between 25 and 34 years⁸¹. The three most common conditions were sight disorders (accounting for 25% of the sample), followed by hay fever and headaches. In contrast, the problems managed most often by GPs for male patients in this age group in the BEACH study were upper respiratory tract infections, sprains and strains and depression. This suggests that the more prevalent problems identified by the AIHW are not the most likely to result in a visit to the GP. However, both the AIHW list of most prevalent conditions and the BEACH list of most common problems managed were primarily of a physical nature.

Problems managed at male age-related encounters, with the exception of general check-ups and immunisations in some age groups and cardiac check-ups in the 65–74 year old age group, were not of a preventive type. The provision of immunisation increased with age in male patients and general check-ups were provided commonly in the 25–44 and 75+ age groups. The high rates of general check-ups in male patients aged between 25 and 44 years may be partially work-related.

Males aged between 45 and 74 years were more likely have encounters with GPs than were females. This is possibly an indicator of males realising their health needs or disease symptoms later in life and presenting to the GP. In contrast, women are constantly encouraged to attend GPs for preventive care (e.g. pap smears) and they develop a relationship with GPs from an earlier age through reproductive care and the care of their children. Chapter 11 showed that the most commonly managed problems in males in the older age groups were of a chronic nature. This suggests that either the disease was more serious when males did decide to attend, or that these diseases are diagnosed later in males.

Males aged over 70 years in the community are likely to face redefinitions of their social roles and deterioration of health as they age and become more aware of their mortality as a

result of the death of their peers¹. This has the potential to result in social isolation and depression¹. The morbidity managed at encounters with men aged 65+ years has been shown to be mostly of a chronic nature, reflecting deterioration in health. Previous studies have shown depression to be under-diagnosed and under-treated in elderly males^{82,83}. In the BEACH study, male patients aged 65 years and over had depression managed at one of the lowest levels of all age groups despite the high level of social change and health deterioration occurring in this population.

Patients aged 75 years and over represent 11.2% of male encounters in the BEACH study. Within this group of male GP attenders, Jacomb⁸⁴ found that males (aged 70 years and over) who attended GPs at lower rates had better health, than high attenders and non-attenders who suffered more pain and who had less social support. In higher attenders this difference may be due to more serious morbidity being treated resulting in more GP contact. In Chapter 5 it was demonstrated that 25% of males aged 75 years and over did not attend a GP in the previous 12 months. This suggests that 25% of males aged 75+ years may have health problems equivalent to those of high users of general practice.

Work-related problems

Encounters with male patients were significantly more likely to have been claimable through workers compensation and to include the management of work-related problems (irrespective of payment source) than encounters with female patients (Chapter 4). The ABS also found that men were more likely than women to suffer from work-related injury. The high number of work-related problems managed, the large number of encounters claimable through workers compensation and the low levels of health care card holders among male patients suggest that they were more likely to be employed than female patients. Males also spend more time in the workforce and are more likely to do hazardous jobs, hence they are exposed to a greater work-related risk^{2,3,85}. Studies based on GP opinion suggest that a primary reason for males attending GPs is the need to continue working²⁰. In the BEACH sample, one in ten males aged between 25 and 44 years had a problem managed which was judged by the GP to be work-related. The most common work-related problems were prominent in the problems managed in these age groups. The results also suggest that in addition to the conditions directly related to the workplace, the most frequent problems managed include acute infections which may prevent men going to work.

Risk factors

The SAND section at the bottom of each encounter form collects health-related information on risk factors from a subsample of male and female patients aged 18 years and over. These subsamples provide patient-reported data on height and weight (to calculate BMI), patient wellbeing, smoking status and alcohol consumption.

The male patients within the BMI substudy were less likely than females to be obese; however, when the overweight and obese categories were combined, 59% of male patients and 48% of female patients were overweight or obese. Previous studies identified the same trend for males to be more obese or overweight than females (67% compared with 52%)². Males aged 65–74 years were most likely to be overweight and males aged 45–64 years were most likely to be obese. This is in contrast to the Australian diabetes, obesity and lifestyle study (AusDiab) which found that males aged between 55 and 74 years were most likely to be obese or overweight (74%) (as reported in *Australia's Health 2002*²). At encounters with both male and female patients there was potential for GPs to provide education about diet and exercise more often than they did. Both were provided at a rate of less than 4.3 per 100 encounters (Chapter 8).

Young male patients (18–24 years) were most likely to be of a normal weight, which reflects the high quality of health experienced by most young adults. Yet even in this age group 25% were overweight and this may be partially due to the fact that males between the ages of 18 and 24 years are most likely not to consume any fruit or vegetables³.

Male patients whose BMI was calculated were significantly less likely to be underweight than females (5% compared with 11%). The results of the 1999–00 AusDiab study show the same trend, but are dramatically lower than the results of this study, with less than 1% of men and less than 2% of women considered underweight (using a cut-off of BMI < 18.5, rather than < 20, used in this study)². The fact that women are more likely to be underweight than men may be due to pressures to conform to a certain body image. However, it is worth noting that males are also affected by pressures to have a certain body image⁸⁶, although conforming to this image is unlikely to result in an abnormal BMI.

The 1995 National Health Survey showed, through questions relating to eight dimensions of health, that men had a less critical view of their health than women did³. This was not directly comparable to the BEACH study which asked a single question aimed to assess the overall self-perceived wellbeing of patients at GP encounters. The current study found only one significant difference between the sexes. Males were less likely than females to rate their health as 'very good,' although this difference was small. The other categories of wellbeing showed a slight trend (although not significant) toward males rating their health more negatively than females.

Tobacco use was the leading cause of drug-related death and hospital separations in Australia in 1998^{87,88}. The current study found that 23% of adult male patients and 16% of adult females were daily smokers. The trend for more males to smoke than females supported previous data on sex-specific smoking habits, although the difference between the sexes in previous studies was smaller. The 2001 NDSHS found that 21.1% of males and 18.0% of females smoked (aged over 14 years)⁸⁰. Hill et al. found that 27.1% of males and 23.2% of females aged 18+ were current smokers of tobacco⁸⁹. The larger difference between male and female rates of smoking in BEACH may indicate that male smokers are more likely to attend GPs than female smokers. The male age-specific rates of smoking indicate that there is still a high uptake of smoking in young males. These results are in line with those for smoking uptake rates in other samples⁹⁰. Of the males whose smoking habits were surveyed, those aged between 18 and 24 years had the highest percentage of daily smokers (36.7%). This trend for younger males to have high levels of daily smoking is supported by the 2001 NDSHS which reported that 28.5% of males aged 20–29 years smoked daily⁸⁰.

Alcohol was the second leading cause of drug-related death and hospitalisation in Australia⁸⁸. The current study found that 30% of male patients (compared with 20% of female patients) were 'at-risk' drinkers. Results from the 2001 NDSHS showed the same trend, however the difference was much smaller, with 10.2% of males and 9.4% of females drinking at levels which put their health at risk in the long term. In addition 39.3% of males and 29.6% of females were found to drink (in the previous 12 months) at levels which put their health at risk in the short term. The NDSHS was not directly comparable with the BEACH data because of differences in the age groupings and alcohol guidelines used.

The prevalence of at-risk alcohol consumption in males aged 18–24 years (39.8% of the sampled population) was much higher than the alcohol consumption levels for all other male age groups in the alcohol subsample. Wechsler et al. found the same pattern of high-risk alcohol consumption in young men in a study of 17 to 25 year old college men, of whom 23% were frequent binge drinkers⁹¹, although different alcohol guidelines and age groupings were used. Although it has been shown that alcohol has a preventive effect for selected morbidities and mortalities, this has been shown to benefit people over the age of 65 years⁸⁷.

Andreasson et al.⁹² found that any alcohol consumption in men until the age of 45 years had a negative net effect on health. This highlights the fact that in young males high levels of 'at-risk' alcohol consumption have serious implications for their future health.

The BEACH study prompts GPs to ask their patients about risk factors in a structured manner. Aertgeerts et al.⁹³ showed that GPs identify only a third of patients with alcohol abuse or dependence in normal practice, which suggests that a large number of patients with serious drinking conditions are going undetected. This may be due to GPs not routinely asking patients structured questions about their alcohol consumption, as it has been found that patients are likely to be truthful about their drinking habits when questioned by GPs⁹⁴.

Overview

Differences observed across age groups in the types of problems managed and health risk behaviours provide some clues as to the ages of greatest health concern in male patients. In this study patients aged between 15 and 54 years can be identified as those of greatest concern due to low GP utilisation, high smoking rates (measured in patients aged 18+ years) and at-risk alcohol consumption (patients aged 18+ years). From around 45 years onward, although GP utilisation increases, the problems managed are mostly chronic in nature and rates of obesity/overweight peak. This suggests that the low use of GP services and health risk behaviours are resulting in negative health outcomes later in life. A longitudinal study needs to be conducted to accurately determine the relationship between these factors and other variables (such as diet, exercise level, stress and socioeconomic disadvantage) on the health of males.

In the GP-encounter population, the proportion of encounters with young people is smaller than the proportion of young people in the population, due to lower attendance rates in young males generally. This would suggest that the BEACH data under-represent the health habits of young males compared with those in the total population. This is alarming when this age group has the highest levels of at-risk alcohol consumption, daily smoking and management of drug abuse. However, health risk behaviour has become entrenched as a symbol of masculinity in Australia¹². Young men are especially susceptible to this as they struggle to find an acceptable identity as a man throughout adolescence into early adulthood¹².

This secondary analysis of BEACH data has provided information about the encounters of male patients in the general practice setting. In particular it provides information on the management of conditions in male patients in Australia where there were previously little data. It may appear that the data reported in this study have focused on the negative aspects of men's health. This reflects the fact that encounters with GPs are usually based on problems (e.g. diseases and illnesses) that require GP management and that health risk behaviours are more prevalent in males. There are many current positive initiatives being implemented for men's health in the community. This report may support these initiatives by increasing awareness of areas of concern for men's health. It may also assist in the future planning of targeted health education and interventions in the male population.

14.1 Methodological issues

A full list of methodological issues and limits relating to the BEACH project are detailed elsewhere^{49,50}. The main limitations applicable to this study are described below.

In a comparative study of this type it is important to consider the possible influence of the chosen methods on the results. To be included in the primary analysis of sex-specific GP

encounter patterns, the patient's sex had to be recorded by the GP at the encounter. Encounters with no sex recorded were excluded. For the additional analyses of male morbidity by age groups and work-related problems managed the GP was required to complete the date of birth or determine if the problem being managed was caused by the patient's work environment.

The under-representation of participating GPs under 35 years of age compared with the non-participating sample population (see Section 3.3) was validly dealt with by post-stratification weighting. This lower response rate is likely to be associated with the fact that GPs currently in the training program (or at completion of training until the beginning of the new triennium, up to 3 years) are not required to undertake quality assurance (QA) activities. This meant that the 25 QA points offered to participants of the BEACH project were of little interest to this group.

The amount of data that can be recorded at each encounter is limited by the design of the recording form. This may result in GPs not recording some health issues and their management at patient encounters if more than four problems are managed. However, this limitation applies to both sexes and so should not have an impact on comparisons within this study. The GP's ability to complete the encounter form (correctly) also limits the accuracy of the data. However this occurs randomly across GP-patient clusters.

The clustered sampling design used in BEACH is based on each GP and the cluster of encounters they manage. Each cluster has its own characteristics and this means that the resulting encounters are not a random GP-patient selection. While it would be more statistically valid to have five or six encounters recorded by every GP across Australia, this is not a cost-effective alternative⁴⁹. The sample of 1,000 GPs recording 100,000 encounters annually has been shown to be a cost-effective, valid and statistically powerful balance⁹⁵.

GP-Medicare data only include those GP services that have been billed to Medicare as A1 items of service. This means they do not include non-A1 Medicare items of service and Medicare items paid for by the Department of Veterans' Affairs. The GP-population attendance patterns in Chapter 5 (Section 5.2) are affected by these limitations of GP-Medicare data to be representative of GP services. This indicates that Medicare data are under-representative of GP activity collected by BEACH. However, the BEACH study may be under-representative of GP-Medicare encounters, because only one Medicare item number can be recorded at each encounter. At encounters that attract more than one Medicare item number GPs were instructed to include only the more general item. BEACH data also include some encounters that were not Medicare funded (e.g. those provided free of charge, paid for by other means such as State health departments or private insurance companies, or funded by workers compensation).

The BEACH study included only those GPs who were registered, working in private practice or on a fee-for-service basis. No salaried practitioners were included.

The data provided by the BEACH study are only a cross-sectional sample of activity at male GP encounters. An accurate description of long term management of male patients over time cannot be shown using BEACH data.

The morbidity patterns identified from the BEACH study include only the problems managed at the encounter, which means that any co-morbidities not managed at the GP consultation would not be counted. Prescribed, supplied and advised-over-the-counter medications were recorded at each encounter. If a medication was not prescribed, provided or recommended for a problem, this did not mean that the patient was not on medication for this problem. Similarly, the absence of a referral or procedure may indicate that this had been done at a previous encounter or would be done at a future encounter.

15 Conclusion

This secondary analysis of the BEACH data has provided the first national description of general practice encounters with male patients, their reasons for encounter, problems managed and treatment provided. Further, it has demonstrated a number of comparative differences in the characteristics of general practice encounters with male and female patients. The additional subanalyses of the management of work-related problems and age-related morbidity have provided insight into specific areas of interest or concern in the health of male patients.

The results of this study, such as the male rates of obesity/overweight, smoking, and alcohol consumption, indicate that there is reason to be concerned about the health of males in the population, especially in the younger age groups. Adolescence and young adulthood has been shown to be the period in which health behaviours are formed and general practitioners (GPs) are the health service they access, especially GPs they know and trust. The lower attendance rates of younger males suggest that when these young men do attend, GPs should try to develop a trusting relationship and use the contact to inquire about health risk behaviours. General practice provides an ideal environment in which to collect such health information, because patients expect routine questioning by GPs about health-related behaviour such as smoking habits and alcohol consumption.

Additional research is needed to determine why GPs are not better utilised by males in the community. This research could explore the extent to which cost, availability of GPs and the general practice environment influence men's use of GPs. Further, health research and policy development should not aim to equalise the attendance rates of males and females, but should determine if and why men do not use GPs for the correct reasons, at the most appropriate time for health intervention.

The relatively high proportion of male problems that were work-related is of concern especially because many of these problems are not counted in workers compensation data and would not be counted elsewhere. Further research is needed on the causes of work-related conditions not claimed through workers compensation and on the development of appropriate preventive interventions.

The study provided evidence to suggest that GPs spent less time with male patients. Hence, they are likely to miss out on the provision of preventive care. Since male patients have fewer problems managed, GPs may need to spend more time with male patients to allow for further health discussion, especially relating to risk factors.

Conducting a longitudinal study in the future would determine the long-term health effects of areas of concern raised in this study – in particular, the low GP attendance rates of males and the high levels of obesity/overweight, smoking and alcohol consumption in male patients. Such a study could also investigate the long term impact of other variables not measured by BEACH (such as diet, exercise level, stress and socioeconomic disadvantage) on the health of males. This has previously been recommended for males.

The study findings suggest that future health strategies targeting men, especially young men, should not use the GP setting as the primary place of health education and intervention because males have low attendance rates and short consultations. Places where males are more comfortable could provide a more effective venue for health information delivery. One such relevant place would be the work environment because most males work and because of health concerns raised by the numbers of male encounters associated with

work-related conditions. If men can be better educated to attend general practice on a more regular basis, particularly in their younger years, attention could then be focused on the GP-patient relationship and the provision of more regular health education and prevention.

It is widely understood that health is influenced by multiple factors. The BEACH data are unable to capture the influence of all these factors on the health of men. The literature suggests that research needs to be conducted to determine the effects of these factors, particularly the extent to which the high rates of at-risk alcohol consumption, smoking and illicit drug use in young men shown in this study are caused by psychological problems (i.e. substance use disorders) and masculinity roles. Further research also needs to be conducted to determine the influence of the masculinity role and socioeconomic status on the health of all men.

There is potential to increase life expectancy and decrease death rates for Australian males by targeting the health risk behaviours, increasing their contact with GPs, and examining the social constructs which form such male behaviours. In the future, BEACH will provide a measure of the effectiveness of any strategies introduced to improve the attendance and morbidity of male patients in general practice.

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Glossary

A1 Medicare items: Medicare item numbers 1–51, 601, 602

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 general practitioner.

Allied health professionals: Those who provide clinical and other specialised services in the management of patients, including physiotherapists, occupational therapists, dietitians and pharmacists.

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

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

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. Includes follow-up for a problem or an initial presentation of a problem previously assessed by another provider.

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 (e.g. 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:

(a) *Medicare-claimable*

- A1 items of service: MBS item numbers 1–51, 601, 602
 - *surgery consultations:* encounters identified by any one of MBS item numbers 3; 23; 36; 44

- *home visits*: encounters identified by any one of MBS item numbers 4; 24; 37; 47
- *hospital encounters*: encounters identified by any one of MBS item numbers 19; 33; 40; 50
- *nursing home visits*: encounters identified by any one of MBS item numbers 20; 35; 43; 51
- *other institutional visits*: encounters identified by any one of MBS item numbers 13; 25; 38; 40
- *other MBS encounters*: encounters identified by an MBS item number that does not identify place of encounter

(b) *Workers compensation*: encounters paid by workers compensation insurance

(c) *Other paid*: encounters paid from another source (e.g. 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).

Indigenous status: The patient identifies himself or herself as an Aboriginal person or as a Torres Strait Islander.

Medication: Medication which is prescribed, advised for over-the-counter purchase or provided by the GP at the encounter.

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.
- *Old patient*: The patient has attended the practice before.

Problem managed: See *Diagnosis*.

Provider: A person to whom a patient has access when contacting the health care 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 (RACGP) who participates in, and meets the requirements for, QA and continuing

medical education as defined in the 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. (Medicare Benefits Schedule book, 1 November 1998)

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 specialist, allied health professionals, and for hospital and nursing home admissions arising at a recorded encounter are included. Continuation referrals are not included. Multiple referrals can be recorded at any one encounter.

Torres Strait Islander: The patient identifies himself or herself as a Torres Strait Islander.

Work-related problem: A problem judged by the GP, using their clinical experience, to be work related. Irrespective of whether the encounter was claimable through workers compensation or Medicare.

Abbreviations

| | |
|-------------|---|
| ABS | Australian Bureau of Statistics |
| AIHW | Australian Institute of Health and Welfare |
| AUDIT | Alcohol Use Disorders Identification Test |
| BEACH | <u>B</u> ettering the <u>E</u> valuation <u>A</u> nd <u>C</u> are of <u>H</u> ealth |
| BMI | Body mass index |
| CAPS | Coding Atlas for Pharmaceutical Substances |
| CI | Confidence interval (in this report 95% CI is used) |
| CNS | Central nervous system |
| COPD | Chronic obstructive pulmonary disorder |
| DHAC | Commonwealth Department of Health and Aged Care (now the Commonwealth Department of Health and Ageing, DoHA) |
| DoHA | See DHAC |
| Enc | Encounter |
| FMRC | Family Medicine Research Centre, The University of Sydney |
| GP | General practitioner |
| GPSCU | General Practice Statistics and Classification Unit, University of Sydney, a collaborating unit of the Australian Institute of Health and Welfare |
| HIC | Health Insurance Commission |
| ICPC | International Classification of Primary Care |
| ICPC-2 | International Classification of Primary Care (Version 2) |
| ICPC-2 PLUS | An extended vocabulary of terms classified according to ICPC-2 |
| IHD | Ischaemic heart disease |
| LCL | Lower confidence limit |
| MBS | Medicare Benefits Schedule |
| MC&S | Microscopy culture and sensitivity |
| NDSHS | National Drug Strategy Household Survey |
| NESB | The patient reports coming from a non-English-speaking background, i.e. a language other than English is spoken at home. |
| NS | Not significant |
| NSAID | Non-steroidal anti-inflammatory medications |
| OTCs | Medications advised for over-the-counter purchase |
| OR | Odds ratio |
| p.a. | Per annum |
| QA | Quality assurance (in this case the Quality Assurance Program of the Royal Australian College of General Practitioners) |
| RACGP | Royal Australian College of General Practitioners |

| | |
|--------|--|
| RFE(s) | Reason for encounter(s) (see Glossary) |
| 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 |
| UTI | Urinary tract infection |
| WHO | World Health Organization |

Appendixes

Appendix 1: Example of a recording form

BEACH (Bettering the Evaluation And Care of Health) - Morbidity and Treatment Survey - National
DOCID

| | | | | | | | |
|---|---|--|---|--|--|---|--|
| Date of encounter ___/___/___ | Date of Birth ___/___/___ | Sex M <input type="checkbox"/> F <input type="checkbox"/> | Patient Postcode _____ | New patient..... Health Care Card holder..... NESB..... Aboriginal..... Torres Strait Islander..... Veterans Affairs Card..... White card..... Gold card..... | PATIENT SEEN Item No. _____ MBS/Vet. Affairs _____ VA paid..... Workers comp paid..... State/Other paid..... No charge/Unpaid..... | PATIENT NOT SEEN Script..... Referral..... Certificate..... Other..... | |
| Encounter Number 1. _____ 2. _____ 3. _____ | 2. Diagnosis/problem _____ _____ _____ | | | | | | |
| 1. Diagnosis/problem _____ _____ _____ | | New problem <input type="checkbox"/> Work related <input type="checkbox"/> | Medications/vaccines for this problem 1. _____ 2. _____ 3. _____ 4. _____ | | | | Strength Regimen No. of Rps ? GP Supply New Drug |
| Procedures, other treatment, counselling this consult 1. _____ 2. _____ | | New referrals, admissions 1. _____ 2. _____ | | | | New referrals, admissions 1. _____ 2. _____ | |
| 3. Diagnosis/problem _____ _____ _____ | | New problem <input type="checkbox"/> Work related <input type="checkbox"/> | Medications/vaccines for this problem 1. _____ 2. _____ 3. _____ 4. _____ | | | | Strength Regimen No. of Rps ? GP Supply New Drug |
| Procedures, other treatment, counselling this consult 1. _____ 2. _____ | | New referrals, admissions 1. _____ 2. _____ | | | | New referrals, admissions 1. _____ 2. _____ | |
| Pathology For problem(s) 1 1 2 3 4 2 1 2 3 4 3 1 2 3 4 4 1 2 3 4 5 1 2 3 4 | Imaging & other tests (+Body site) 1 1 2 3 4 2 1 2 3 4 3 1 2 3 4 4 1 2 3 4 5 1 2 3 4 | To the patient: In general would you say your health is: Excellent..... Very good..... Good..... Fair..... Poor..... | Patient's Height: _____ cm Weight: _____ | To the patient if 18+: How often do you have a drink containing alcohol? Never..... Monthly or less..... Once a week..... 2-4 times a week..... 5+ times a week..... | How many standard drinks do you have on a typical day when you are drinking? _____ | How often do you have 6 or more standard drinks on one occasion? Never..... Monthly or less..... Once a week..... 2-4 times a week..... 5+ times a week..... | |

Appendix 2: GP characteristics questionnaire



The University of Sydney
at Westmead Hospital

General Practice Statistics and Classification Unit
Family Medicine Research Centre
Department of General Practice

a collaborating unit of the
Australian Institute of Health and Welfare



Please fill in boxes or circle answers
where appropriate

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

Doctor Identification Number

1. Sex: Male / Female
2. Age
3. How many years have you spent in general practice?
4. Number of general practice sessions you usually work per week?
5. How many **full-time** (>5 sessions per week) general practitioners work with you at this practice? (Practice= shared medical records)
6. How many **part-time** (<6 sessions per week) general practitioners work with you at this practice? (Practice = shared medical records)
7. Do you conduct more than **50%** of consultations in a language other than English? Yes / No
8. What is the postcode of your major practice address?
9. Country of graduation: Aust NZ Asia UK Other:(specify)
10. General Practice training status Presently training Completed training Not Applicable
(CSCT or RACGP training programme)?
11. Do you hold FRACGP? Yes / No
12. Are you a member of any of the following organisations? AMA RACGP RDAA
13. How do you routinely instruct pharmacists on the substitution of generic drugs? No substitute allowed Substitute allowed
14. To what extent are computers used at your major practice address? (Circle as many as apply)
Not at all Billing Prescribing Medical Records Internet / Email Other Admin
15. Is this practice accredited ? Yes / No
16. What are the normal after-hours arrangements for your practice?
Practice does its own Co-operative with oth. practices Deputising service Referral to other service (eg A&E) Other None
17. Do you have your own *on-site* NATA accredited pathology lab? Yes / No
18. Which external pathology provider does your practice normally use? Name of provider.....
Provider's Postcode

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Appendix 3: Reasons for encounter and problems managed—code groups from ICPC-2 and ICPC-2 PLUS

| Group | ICPC rubric | ICPC-2 PLUS code | ICPC/ICPC-2 PLUS label |
|-----------------------|-------------|--------------------------------|---------------------------------------|
| Abdominal pain | D01 | | Pain/cramps;abdominal general |
| | D06 | | Pain;abdominal localised;other |
| Abnormal test results | A91 | | Abnormal results investigations NOS |
| | B84 | | Abnormal white cells |
| | U98 | | Abnormal urine test NOS |
| | X86 | | Abnormal Pap smear |
| Anaemia | B80 | | Iron deficiency anaemia |
| | B81 | | Anaemia;vitamin B12/folate deficiency |
| | B82 | | Anaemia other/unspecified |
| Anxiety | P01 | | Feeling anxious/nervous/tense |
| | P74 | | Anxiety disorder/anxiety state |
| Arthritis | | L70009 | Arthritis;pyogenic |
| | | L70010 | Arthritis;viral |
| | | L81003 | Arthritis;traumatic |
| | | L83010 | Arthritis;spine cervical |
| | | L84003 | Arthritis;spine |
| | | L84023 | Arthritis;spine thoracic |
| | | L84024 | Arthritis;spine lumbar |
| | | L84025 | Arthritis;lumbosacral |
| | | L84026 | Arthritis;sacroiliac |
| | | L89004 | Arthritis;hip |
| | | L90004 | Arthritis;knee |
| | | L91009 | Arthritis |
| | | L91010 | Arthritis;acute |
| | | L91011 | Arthritis;allergic |
| | | L91012 | Polyarthritis |
| | L92006 | Arthritis;shoulder | |
| | S91002 | Arthritis;psoriatic | |
| | T99063 | Arthritis;crystal (excl. gout) | |

(continued)

Appendix 3 (continued): Reasons for encounter and problems managed—code groups from ICPC-2 and ICPC-2 PLUS

| Group | ICPC rubric | ICPC-2 PLUS code | ICPC/ICPC-2 PLUS label |
|----------------------------|-------------|------------------|---|
| Back complaint | L02 | | Back symptom/complaint |
| | L03 | | Low back symptom/complaint |
| | L86 | | Back syndrome with radiating pain |
| Check-up (all) | -30 | | Medical examination/health evaluation, complete |
| | -31 | | Medical examination/health evaluation, partial |
| | X37 | | Pap smear |
| Check-up (ICPC chapter) | A30;A31 | | General |
| | B30;B31 | | Blood |
| | D30;D31 | | Digestive |
| | F30;F31 | | Eye |
| | H30;H31 | | Ear |
| | K30;K31 | | Cardiovascular |
| | L30;L31 | | Musculoskeletal |
| | N30;N31 | | Neurological |
| | P30;P31 | | Psychological |
| | R30;R31 | | Respiratory |
| | S30;S31 | | Skin |
| | T30;T31 | | Endocrine |
| | U30;U31 | | Urology |
| | W30;W31 | | Prenatal/post-natal |
| | X30;X31;X37 | | female genital |
| Y30;Y31 | | male genital | |
| Z30;Z31 | | Social | |
| Depression | P03 | | Feeling depressed |
| | P76 | | Depressive disorder |
| Diabetes (non-gestational) | T89 | | Diabetes;insulin-dependent |
| | T90 | | Diabetes;non-insulin-dependent |
| Diabetes (all) | T89 | | Diabetes;insulin-dependent |
| | T90 | | Diabetes;non-insulin-dependent |
| | W85 | | Gestational diabetes |

(continued)

Appendix 3 (continued): Reasons for encounter and problems managed – code groups from ICPC-2 and ICPC-2 PLUS

| Group | ICPC rubric | ICPC-2 PLUS code | ICPC/ICPC-2 PLUS label |
|-----------------------------|-------------|----------------------|--|
| Fracture | L72 | | Fracture;radius/ulna |
| | L73 | | Fracture;tibia/fibia |
| | L74 | | Fracture;hand/foot bone |
| | L75 | | Fracture;femur |
| | L76 | | Fracture;other |
| | | L99017 | Fracture;non-union |
| | | L99018 | Fracture;pathological |
| | | L99019 | Fracture;malunion |
| | | N80012 | Fracture;skull (base) |
| | | N80013 | Fracture;skull |
| | N80014 | Injury;head;fracture | |
| Hypertension/High BP (RFEs) | K85 | | Elevated blood pressure without hypertension |
| | K86 | | Uncomplicated hypertension |
| | K87 | | Hypertension with involvement of target organs |
| | | W81003 | Hypertension in pregnancy |
| Hypertension (for problems) | K86 | | Uncomplicated hypertension |
| | K87 | | Hypertension with involvement of target organs |
| | | W81003 | Hypertension in pregnancy |
| Immunisation | A44 | | Preventive immunisation/medication–general/unspecified |
| | D44 | | Preventive immunisation/medication;hepatitis |
| | N44 | | Preventive immunisation/medication;tetanus |
| | R44 | | Preventive immunisation/medication;influenza |
| Ischaemic heart disease | K74 | | Ischaemic heart disease without angina |
| | K76 | | Ischaemic heart disease with angina |
| Menstrual problems | X02 | | Pain;menstrual |
| | X03 | | Pain;intermenstrual |
| | X05 | | Menstruation;absent/scanty |
| | X06 | | Menstruation;excessive |
| | X07 | | Menstruation;irregular/frequent |
| | X08 | | Intermenstrual bleeding |
| | X09 | | Premenstrual symptoms/complaint |
| | X10 | | Postponement of menstruation |

(continued)

Appendix 3 (continued): Reasons for encounter and problems managed – code groups from ICPC-2 and ICPC-2 PLUS

| Group | ICPC rubric | ICPC-2 PLUS code | ICPC/ICPC-2 PLUS label | |
|-------------------------------|--------------|------------------|--|--|
| Osteoarthritis | | L83011 | Osteoarthritis;spine;cervical | |
| | | L84004 | Osteoarthritis;spine | |
| | | L84009 | Osteoarthritis;spine;thoracic | |
| | | L84010 | Osteoarthritis;spine;lumbar | |
| | | L84011 | Osteoarthritis;lumbosacral | |
| | | L84012 | Osteoarthritis;sacroiliac | |
| | | L89001 | Osteoarthritis;hip | |
| | | L90001 | Osteoarthritis;knee | |
| | | L91001 | Osteoarthritis;degenerative | |
| | | L91003 | Osteoarthritis | |
| | | L92007 | Osteoarthritis;shoulder | |
| Oral contraception | W10 | | Contraception;postcoital | |
| | W11 | | Oral contraceptive | |
| | W50 | | Medication, reproductive system | |
| Pregnancy | W01 | | Question of pregnancy | |
| | W78 | | Pregnancy | |
| | W79 | | Unwanted pregnancy | |
| Prescription | -50 | | Medication prescription/request/renewal/injection | |
| Rash | S06 | | Localised redness/erythema/rash of skin | |
| | S07 | | Generalised/multiple redness/erythema/rash skin | |
| Rheumatoid arthritis | L88 | | Rheumatoid arthritis | |
| Swelling (skin) | S04 | | Localised swelling/papules/ lump/mass/ skin/subcutaneous tissue | |
| | S05 | | Generalised swelling/papules/ lumps/mass/ skin/subcutaneous tissue | |
| Sprain/strain | | L19014 | Strain;muscle(s) | |
| | | L77 | Sprain/strain of ankle | |
| | | L78 | Sprain/strain of knee | |
| | | L79 | Sprain/strain of joint NOS | |
| | | L83023 | Sprain;neck | |
| | | L83024 | Strain;neck | |
| | | L84020 | Sprain;back | |
| | | L84021 | Strain;back | |
| | Test results | -60 | | Results test/procedures |
| | | -61 | | Results examinations/test/record/letter other provider |
| Tonsillitis | R76 | | Tonsillitis;acute | |
| | R90 | | Hypertroph;tonsils/adenoids | |
| Urinary tract infection (UTI) | U70 | | Pyelonephritis/pyelitis;acute | |
| | U71 | | Cystitis/other urinary infection;non-venereal | |

Note: -(code) signifies that the concept includes all of the specified code across all chapters of ICPC-2.

Appendix 4: Clinical treatment—code groups from ICPC-2 PLUS

| Treatment group | ICPC-2 PLUS code | ICPC-2 PLUS label |
|------------------------------|------------------|--------------------------------------|
| Advice—care of other person | A45022 | Advice;care of sick 3rd person |
| | A45023 | Advice;care of well 3rd person |
| | A58001 | Counselling;terminal care |
| Advice/education | A45002 | Advice/education |
| | B45002 | Advice/education;blood |
| | D45002 | Advice/education;digestive |
| | F45002 | Advice/education;eye |
| | H45002 | Advice/education;ear |
| | K45002 | Advice/education;cardiovascular |
| | L45002 | Advice/education;musculoskeletal |
| | N45002 | Advice/education;neurological |
| | P45001 | Advice/education;psychological |
| | R45002 | Advice/education;respiratory |
| | S45002 | Advice/education;skin |
| | T45002 | Advice/education;endocrine/metabolic |
| | U45002 | Advice/education;urology |
| | W45004 | Advice/education;reproductive |
| | X45002 | Advice/education;genital;female |
| | Y45002 | Advice/education;genital;male |
| | Z45002 | Advice/education;social |
| Advice/education—legal/other | A45017 | Advice/education;compensation |
| | Z45009 | Advice/education;legal |
| Advice/education—medication | A45015 | Advice/education;medication |
| | A48003 | Review;medication |
| | A48005 | Increased;drug dosage |
| | A48006 | Decreased;drug dosage |
| | A48007 | Change (in);drug dosage |
| | A48008 | Stop medication |
| | A48009 | Recommend medication |
| | A48010 | Change (in);medication |
| Advice/education—mothercare | A45024 | Advice;mothercare |

(continued)

Appendix 4 (continued): Clinical treatment code groups from ICPC-2 PLUS

| Treatment group | ICPC-2 PLUS code | ICPC-2 PLUS label |
|---|------------------|--------------------------------|
| Advice/education—treatment | A45016 | Advice/education;treatment |
| | A45019 | Advice;time off work |
| | A45020 | Advice;rest/fluids |
| | A45021 | Advice;naturopathic treatment |
| | A48004 | Review;treatment |
| | S45004 | Advice/education;RICE |
| | T45004 | Advice/education;diabetes |
| Consultation with primary care provider | -46 | |
| Consultation with specialist | -47 | |
| Counsel/advice—STDs | A45012 | Advice/education;STD |
| | A58008 | Counselling;STDs |
| | X58004 | Counselling;STDs;female |
| | Y58004 | Counselling;STDs;male |
| Counsel/advice—alcohol | P45005 | Advice/education;alcohol |
| | P58009 | Counselling;alcohol |
| Counsel/advice—drug abuse | P45006 | Advice/education;illicit drugs |
| | P58010 | Counselling;drug abuse |
| Counsel/advice—exercise | A45004 | Advice/education;exercise |
| | A58005 | Counselling;exercise |
| Counsel/advice—health/body | A45005 | Advice/education;health |
| | A45009 | Health promotion |
| | A45010 | Information;health |
| | A45011 | Health promotion;injury |
| | A45018 | Advice/education;body |
| | A58006 | Counselling;health |
| Counsel/advice—life style | P45008 | Advice/education;life style |
| | P58012 | Counselling;life style |
| Counsel/advice—nutrition/weight | A45006 | Advice/education;diet |
| | T45005 | Advice/education;nutritional |
| | T45007 | Advice/education;weight mgt |
| | T58002 | Counselling;weight management |
| Counsel/advice—occupational | Z45004 | Advice/education;occupation |
| | Z45010 | Advice/education;work practice |
| | Z58004 | Counselling;occupational |

(continued)

Appendix 4 (continued): Clinical treatment code groups from ICPC-2 PLUS

| Treatment group | ICPC-2 PLUS code | ICPC-2 PLUS label |
|-----------------------------|---|---|
| Counsel/advice—other | A45014 | Advice/education;travel |
| | P45009 | Advice/education;sexuality |
| | P45010 | Advice/education;life stage |
| | P58016 | Counselling;life stage |
| | Z58005 | Counselling;environment |
| Counsel/advice—pregnancy | W45009 | Advice/education;pregnancy |
| | W58004 | Counselling;prenatal |
| | W58006 | Counselling;problem;pregnancy |
| Counsel/advice—prevention | A45025 | Advice/education;immunisation |
| | A58007 | Counselling;prevention |
| | X45004 | Advice/educat;breast self exam |
| | Z45005 | Advice/education;environment |
| Counsel/advice—relationship | Z45006 | Advice/education;parenting |
| | Z45007 | Advice/education;mothering |
| | Z45008 | Advice/education;fathering |
| | Z58001 | Counselling;conjugal;partner |
| | Z58003 | Counselling;marriage/rship |
| | Z58006 | Counselling;parenting |
| | Z58007 | Counselling;mothering |
| | Z58008 | Counselling;fathering |
| | Z58009 | Counselling;family |
| Counsel/advice—relaxation | P45007 | Advice/education;relaxation |
| | P58011 | Counselling;relaxation |
| | P58017 | Counselling;stress management |
| Counsel/advice—smoking | P45004 | Advice/education;smoking |
| | P58008 | Counselling;smoking |
| Counselling—problem | A58002 | Counselling;problem |
| | A58003 | Counselling;individual |
| | B58001 | Counselling;problem;blood/blood-forming |
| | D58001 | Counselling;problem;digestive |
| | F58001 | Counselling;problem;eye |
| | H58001 | Counselling;problem;ear |
| | K58001 | Counselling;problem;cardiovascular |
| | L58001 | Counselling;problem;musculoskeletal |
| | N58001 | Counselling;problem;neurological |
| | R58001 | Counselling;problem;respiratory |
| | S58001 | Counselling;problem;skin |
| T58001 | Counselling;problem;endocrine/metabolic | |

(continued)

Appendix 4 (continued): Clinical treatment code groups from ICPC-2 PLUS

| Treatment group | ICPC-2 PLUS code | ICPC-2 PLUS label |
|---------------------------|------------------|---|
| | U58001 | Counselling;problem;urology |
| | W58003 | Counselling;problem;reproductive |
| | X58001 | Counselling;problem;genital;female |
| | X58003 | Counselling;sexual;physical;female |
| | Y58001 | Counselling;problem;genital;male |
| | Y58003 | Counselling;sexual;physical;male |
| | Z58002 | Counselling;problem;social |
| Counselling—psychological | P58001 | Counselling;psychiatric |
| | P58002 | Psychotherapy |
| | P58004 | Counselling;psychological |
| | P58005 | Counselling;sexual;psychological |
| | P58006 | Counselling;individual;psychological |
| | P58007 | Counselling;bereavement |
| | P58013 | Counselling;anger |
| | P58014 | Counselling;self esteem |
| | P58015 | Counselling;assertiveness |
| | P58018 | Therapy;group |
| Family planning | W14015 | Counselling;genetic;female |
| | W45006 | Advice/education;preconceptual |
| | W45007 | Advice/education;contraception |
| | W45008 | Advice/education;family plan;female |
| | W58001 | Counselling;abortion |
| | W58005 | Counselling;terminat pregnancy |
| | W58007 | Counselling;preconceptual |
| | W58012 | Counselling;sterilisation;female |
| | W58013 | Counselling;family planning;female |
| | Y14006 | Counselling;genetic;male |
| | Y45006 | Advice/education;family plan;male |
| | Y58005 | Counselling;sterilisation;male |
| | Y58006 | Counselling;family planning;male |
| Observe/wait | A45001 | Observe/wait |
| | B45001 | Observe/wait;blood/blood-forming organs |
| | D45001 | Observe/wait;digestive |
| | F45001 | Observe/wait;eye |
| | H45001 | Observe/wait;ear |
| | K45001 | Observe/wait;cardiovascular |
| | L45001 | Observe/wait;musculoskeletal |
| | N45001 | Observe/wait;neurological |
| | P45002 | Observe/wait;psychological |
| | R45001 | Observe/wait;respiratory |

(continued)

Appendix 4 (continued): Clinical treatment code groups from ICPC-2 PLUS

| Treatment group | ICPC-2 PLUS code | ICPC-2 PLUS label |
|----------------------------------|---|----------------------------------|
| | S45001 | Observe/wait;skin |
| | T45001 | Observe/wait;endocrine/metabolic |
| | U45001 | Observe/wait;urology |
| | W45003 | Observe/wait;reproductive |
| | X45001 | Observe/wait;genital;female |
| | Y45001 | Observe/wait;genital;male |
| | Z45001 | Observe/wait;social |
| Other admin/document | -62 excluding sickness certificate A62008 | |
| Reassurance support | A58010 | Reassurance/support |
| Sickness certificate | A62008 | Admin;certificate;sickness |
| Clinical measurements | | |
| Electrical tracings | -42 | |
| Diagnostic radiology/imaging | -41 | |
| Physical medicine/rehabilitation | -57 | |

Note: -(code) signifies that the concept includes all of the specified code across all chapters of ICPC-2.

Appendix 5: Procedural treatment code groups from ICPC-2 PLUS

| Treatment group | ICPC-2 PLUS code | ICPC-2 PLUS label |
|--|----------------------------|------------------------------------|
| Assist at operation | A69006 | Assist at operation |
| | B69002 | Assist at operation;blood |
| | D69002 | Assist at operation;digestive |
| | F69002 | Assist at operation;eye |
| | H69002 | Assist at operation;ear |
| | L69002 | Assist at operation;musculoske |
| | N69002 | Assist at operation;neurological |
| | P69002 | Assist at operation;psycho |
| | R69002 | Assist at operation;respiratory |
| | S69002 | Assist at operation;skin |
| | T69002 | Assist at operation;endo/metab |
| | U69002 | Assist at operation;urological |
| | W69002 | Assist at operation;reproduct |
| | X69002 | Assist at operation;genital;female |
| | Y69002 | Assist at operation;genital;male |
| Z69003 | Assist at operation;social | |
| Contraceptive device fit/supply/remove | W12003 | Contraception;IUD |
| | W12004 | Insertion;IUCD |
| | W12005 | Removal;IUCD |
| | W14010 | Contraception;diaphragm |
| | W14012 | Fitting (of);diaphragm |
| | W14013 | Supply;diaphragm |
| | W14014 | Removal;diaphragm |

(continued)

Appendix 5 (continued): Procedural treatment code groups from ICPC-2 PLUS

| Treatment group | ICPC-2 PLUS code | ICPC-2 PLUS label |
|---|------------------|----------------------|
| Diagnostic endoscopy | -40 | |
| Dressing/pressure/compression/ tamponade | -56 | |
| Excision/removal tissue/biopsy/ destruction/debridement/ cauterisation | -52 | |
| Incise/drainage/flushing/aspiration/ removal body fluid | -51 | |
| Instrumentation/catheterisation/ intubation/dilution | -53 | |
| Local injection/infiltration | -55 | |
| Other diagnostic procedures | -43 | |
| Other preventive procedures/high risk medication/condition | -49 | |
| Other therapeutic procedures/minor surgery NEC | -59 | |
| Pap smear | X37001 | Pap smear |
| Physical function test | -39 | |
| Pregnancy test | W33001 | Test;urine;pregnancy |
| | W33002 | Test;pregnancy |
| Repair/fixation—suture/cast/prosthetic device (apply/remove) | -54 | |
| Sensitivity test | -32 | |
| Test;glucose | T34005 | Test;glucose |
| Urine test | -35 | |

Note: -(code) signifies that the concept includes all of the specified code across all chapters of ICPC-2.