

Chapter 14 extract: Care of middle-aged people in general practice

General practice activity in Australia 2015–16



Bettering the Evaluation and Care of Health

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14 Care of middle-aged people in general practice

14.1 Introduction

In last year's BEACH annual report, we wrote a special feature on the care of older Australians (aged 65 years or more [65+]) in general practice¹ with main results summarised below. This year we examine 'middle-aged' patients (aged 45 to 64 years) as these patients would be prime targets for interventions to improve their future health.

The 65+ study highlighted some of the challenges facing general practice as a result of the ageing of the population. We showed that since 2000–01, patients aged 65+ consistently used a greater share of GP service resources than the proportion they accounted for in the population. Further, over the 15 years studied, this share had increased by more than their relative increase as a proportion of the population.

Patients aged 65+ used more health resources than the average Australian (1.9 times as many GP encounters and 2.4 times as many medications). When they visited a GP in 2014–15, they were about 50% more likely to be referred and about 45% more likely to have tests ordered than in 2000–01.

Nearly all patients aged 65+ at a GP consultation had one or more diagnosed chronic condition(s). In the Australian population, 90% of this older group had at least one chronic condition, the majority (57%) had three or more (multimorbidity) and almost 10% had seven or more diagnosed chronic conditions. For example, both hypertension and osteoarthritis had already been diagnosed in more than 50% of older patients sitting in front of a GP.

Our results demonstrated the level of complexity in the management of these patients. When GPs manage a single chronic condition in an older patient, they usually have to consider the implications of the presence of multiple other diagnosed chronic morbidities and the average 5.6 medications being taken for these conditions.

Considered collectively, our findings suggested that though we have some challenges ahead of us, these are mostly a by-product of the success of our health system. For example, the ageing population is partly a product of our increased longevity. We are better able to keep people alive, with increased years without disability than in the past. This allows people to extend their years as productive members of the workforce or the community. Medical advances have changed many once life-threatening health events (for example, acute coronary syndrome) into ones for which intervention (for example, stents) can solve (but not cure) the problem, though the patient may require ongoing (for example, cardiovascular) management for the rest of their lives.

The overall effect is that there are more people being diagnosed with more conditions, where each condition will be managed for a longer period of time. The resulting exponential increase in chronic condition management generates a similar growth in the number of GP visits and the number of management actions, such as prescriptions and test orders. The increased use of GP services has no doubt contributed to our increased life expectancy, and is provided at a per-person cost in line with, or less than, that of other countries.

The current feature examines the care of 'middle-aged' Australians in general practice—those aged 45–64 years. It is likely that this group of patients would be prime targets of interventions as they should be less likely to have the complex morbidity we found in older

Australians. By examining this group of patients, we may identify areas of potential improvement that could enhance patients' long term health.

14.2 Results

The share of general practice use by patients aged 45–64 years

Figure 14.1 provides an overview of change in the population and use of GP services.

- People aged 45–64 years increased from 22.8% of the population in June 2000 to 25.1% in June 2011. By June 2015, the proportion of people aged 45–64 years had decreased to 24.6%. The initial increase was likely due to the wave of younger 'baby boomers' entering this age group. The decrease from 2011 was likely to be the reverse, when a wave of older 'baby boomers' moved into the 65+ range without being replaced in the same volume by younger generations.
- GP encounters with patients aged 45–64 years increased from 25.9% of all BEACH encounters in 2000–01 to a peak of 28.9% in 2008–09. By 2015–16, it had decreased to 26.9%. The proportion of GP encounters used by 45–64 year olds follows a pattern similar to the change in the age distribution of the Australian population.
- GP face-to-face clinical consulting time spent managing patients aged 45–64 years increased from 27.4% of all clinical time in 2000–01 to 30.3% in 2008–09 and then decreased to 28.1% in 2015–16.
- Problems managed at GP encounters with patients aged 45–64 years increased from 28.1% in 2000–01 to 30.6% in 2008–09 and then decreased to 28.6% in 2015–16.
- All medications that were GP-prescribed, supplied or advised for over-the-counter (OTC) purchase for patients aged 45–64 increased from 27.6% in 2000–01 to 29.8% in 2008–09, then decreased to 28.5% in 2015–16.
- Pathology and imaging tests ordered for patients aged 45–64 increased from 33.5% of all tests in 2000–01 to 35.8% in 2008–09, then decreased to 32.2% in 2015–16.
- Referrals made by GPs that were for patients aged 45–64 years increased from 29.4% of all referrals in 2000–01 to 32.3% in 2007–08, then decreased to 29.6% in 2015–16.

In summary, as the proportion of GP encounters used by patients aged 45–64 years followed change in the age distribution of the Australian population, so too did the proportion of problems managed by GPs for this age group, and therefore the proportions of medications, tests and referrals accounted for by these middle-aged patients.

The previous feature¹ found that in 2000–01, patients aged 45–64 years accounted for more GP encounters, GP clinical time, problems managed and referrals than patients aged 65+. By 2014–15, patients aged 65+ accounted for more of all these services than patients aged 45–64 years. The exceptions were: medications, for which patients aged 65+ accounted for more across all the years studied; and tests, for which patients aged 45–64 years accounted for more across all years studied.

Figure 14.1 facilitates relative comparisons between the proportion of management actions accounted for by patients aged 45–64 years and the proportion they account for in the population. For example, in 2015–16, patients aged 45–64 years accounted for 32.2% of all tests ordered by GPs while accounting for just 24.6% of the population. By dividing the 32.2% by 24.6%, we find that people aged 45–64 on average used 31% more tests than the average Australian. Using the same approach, in 2015–16, compared with the average Australian, people aged 45–64 years had:

- 9% more GP encounters

- 14% more clinical face-to-face time with GPs
- 16% more problems managed
- 16% more medications prescribed/advised or supplied
- 31% more tests ordered
- 20% more referrals made.

While patients aged 45–64 years used more health resources than the average Australian, patients aged 65 years or older used more again. In 2015–16, compared with an average person aged 45–64 years, people aged 65+ had an average:

- 88% more GP encounters
- 102% more problems managed
- 108% more medications prescribed/advised or supplied
- 56% more tests ordered
- 76% more referrals made (results not shown).

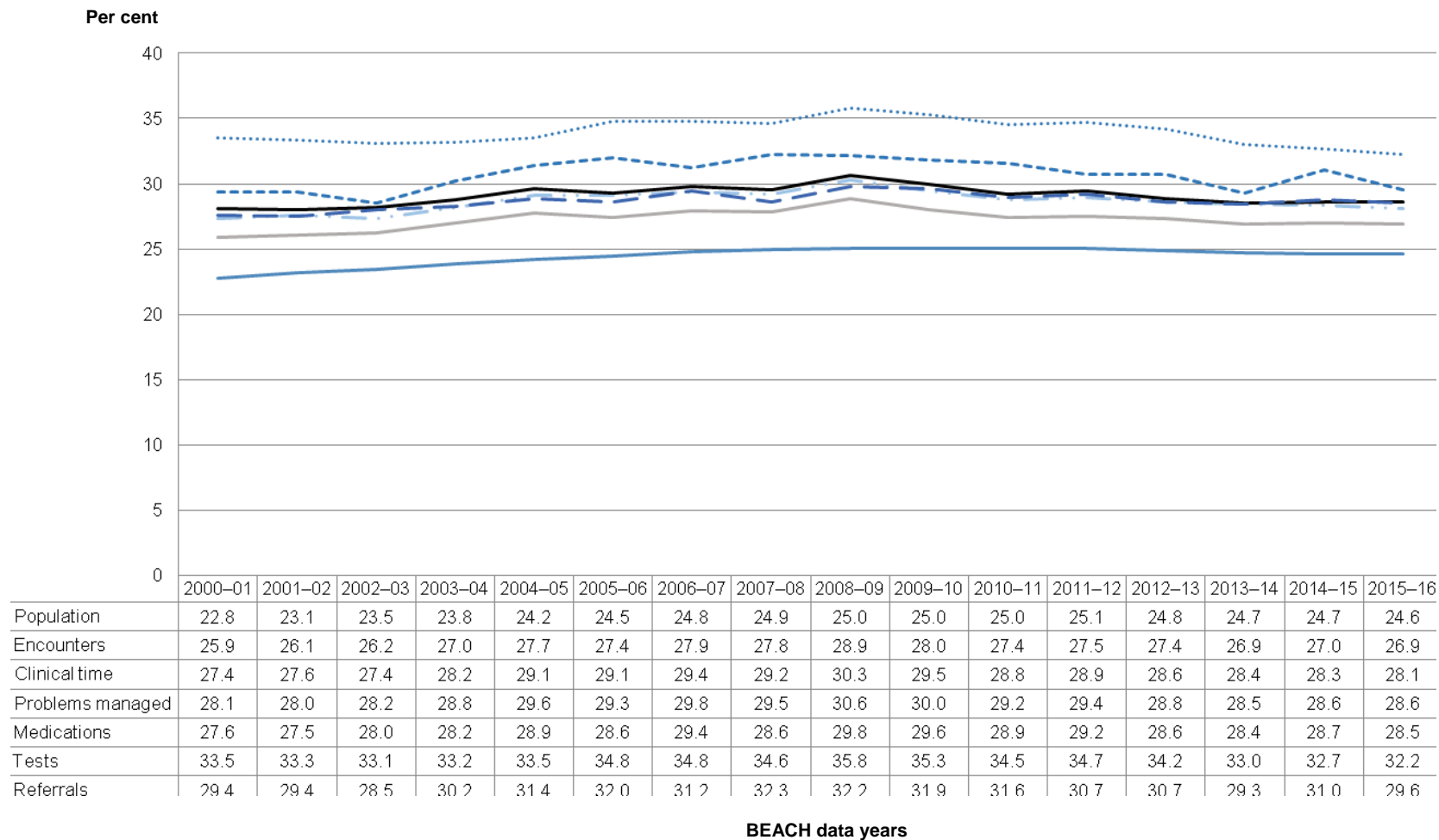
Figure 14.2 gives an idea of the content of GP encounters with patients aged 45–64 years, from 2000–01 to 2015–16. On average, for every 100 encounters with these patients:

- the number of problems managed increased by 5%
- the number of tests ordered increased by 46%
- the number of referrals (to specialists, allied health professionals, emergency departments or hospitals) increased by 53%
- the number of medications prescribed, supplied to the patient or advised for over-the-counter purchase decreased by 5%. This decrease may be due to the increasing number of combination medication products available (which now require a single prescription, when previously GPs had to prescribe the two products separately) and to the increasing numbers of medications that were previously prescription-only, but are now available for over-the-counter purchase, without the need to see a GP.

Figure 14.3 examines the age-specific rate of problems managed and management actions used per 100 encounters in 2015–16.

- The number of problems managed per 100 encounters increased significantly with age, with patients aged 65+ having 9% more problems managed than patients aged 45–64 years.
- Medications per 100 encounters also increased significantly with age; patients aged 65+ had 12% more medications prescribed/advised/supplied than patients aged 45–64 years.
- Patients aged 45–64 years had a significantly higher rate of tests ordered per 100 encounters than both younger (34% higher) and older patients (19% higher).
- Patients aged 45–64 had a significantly higher rate of referrals per 100 encounters than younger patients (18%), however there was no significant difference found between patients aged 45–64 years and older patients.

Figure 14.4 shows that patients aged 45–64 years had significantly longer average measured consultations than patients at all GP encounters across all the years studied. It also shows that the average length of consultations with patients aged 45–64 years significantly increased from 14.7 minutes in 2000–01 to 15.5 minutes in 2015–16.

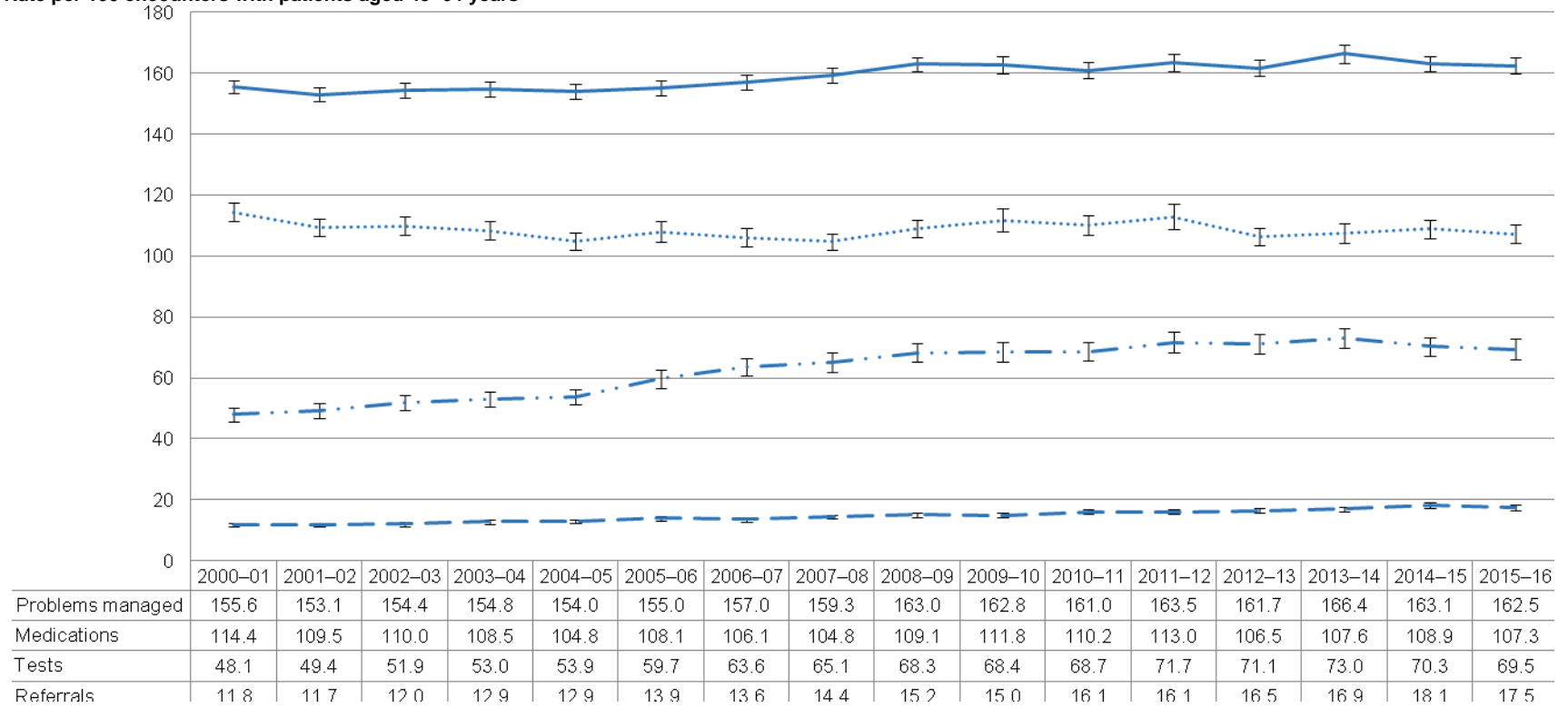


Source: Population data: ABS 3101.0 Australian Demographic Statistics, Table 59.^{2,3} Proportion and content of encounters: BEACH. Length of consultation: BEACH SAND data.

Notes: Medications include GP-prescribed, GP-supplied direct to the patient, and those advised for patient over-the-counter purchase. Tests include pathology, imaging, and other tests ordered or undertaken at the encounter. Referrals include all referrals made at the encounter (e.g. to medical specialists, allied health services, hospitals, clinics).

Figure 14.1 Proportion of population, GP encounters and management actions accounted for by people aged 45-64 years (2000-01 to 2015-16)

Rate per 100 encounters with patients aged 45–64 years



BEACH data years

Notes: Medications include GP-prescribed, GP-supplied direct to the patient, and those advised for patient over-the-counter purchase. Tests include pathology, imaging, and other tests ordered or undertaken at the encounter. Referrals include all referrals made at the encounter (e.g. to medical specialists, allied health services, hospitals, clinics).

Figure 14.2: Rate of problems managed and clinical actions used in treatment per 100 encounters with 95% confidence intervals, patients aged 45–64 years (2000–01 to 2015–16)

Rate per 100 age-specific encounters

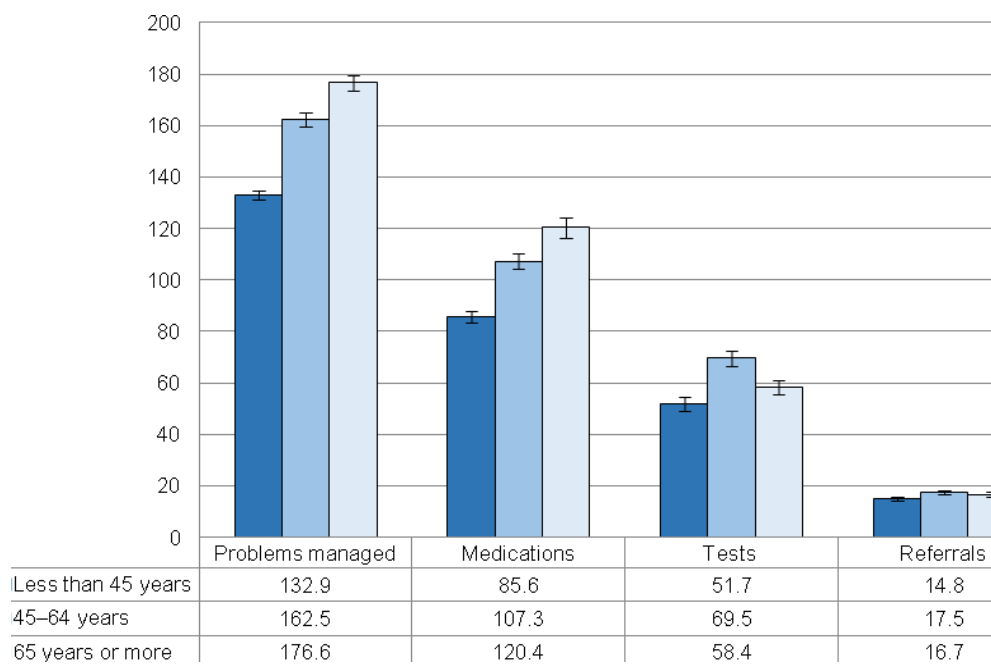


Figure 14.3 Age-specific rate of problems managed, medications, tests and referrals per 100 encounters, 2015-16 (95% confidence intervals)

Average length of consultations in minutes

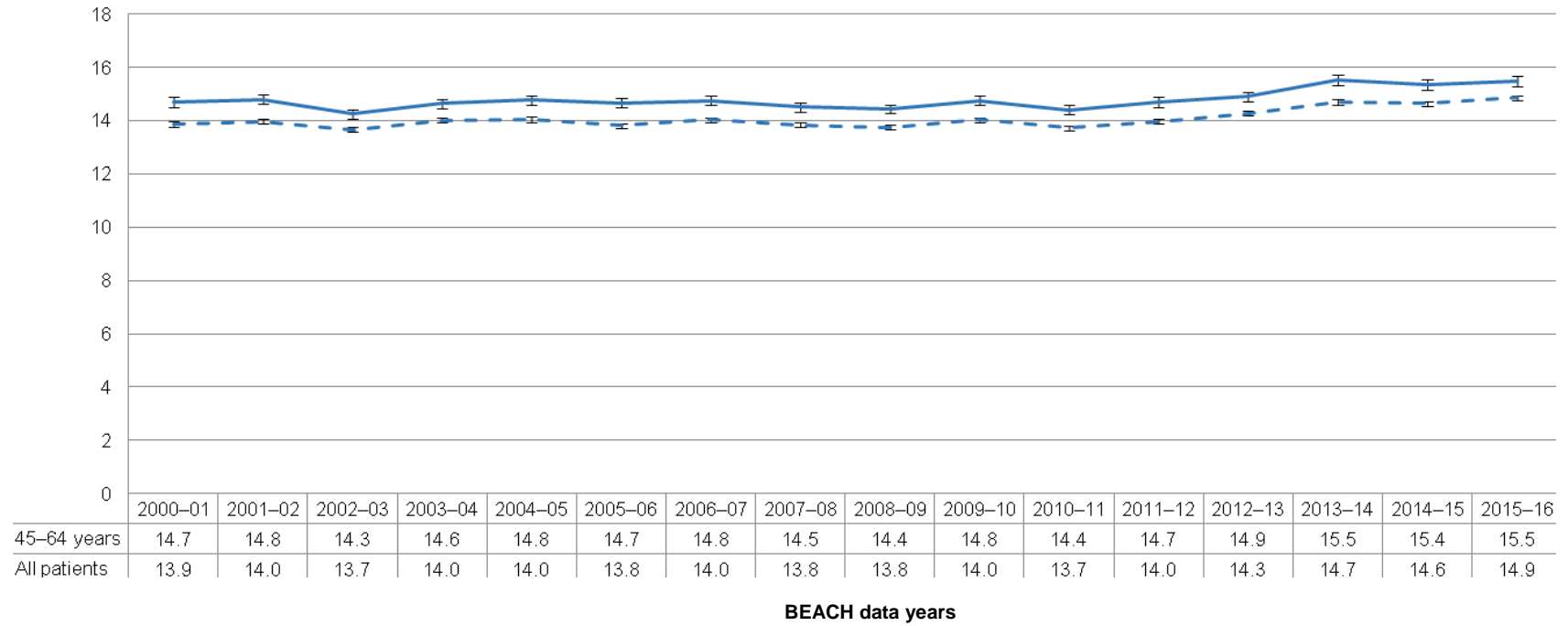


Figure 14.4: Average length of GP consultations with patients aged 45-64 years compared with all patients (2000-01 to 2015-16)

Number of chronic conditions in people aged 45–64 years

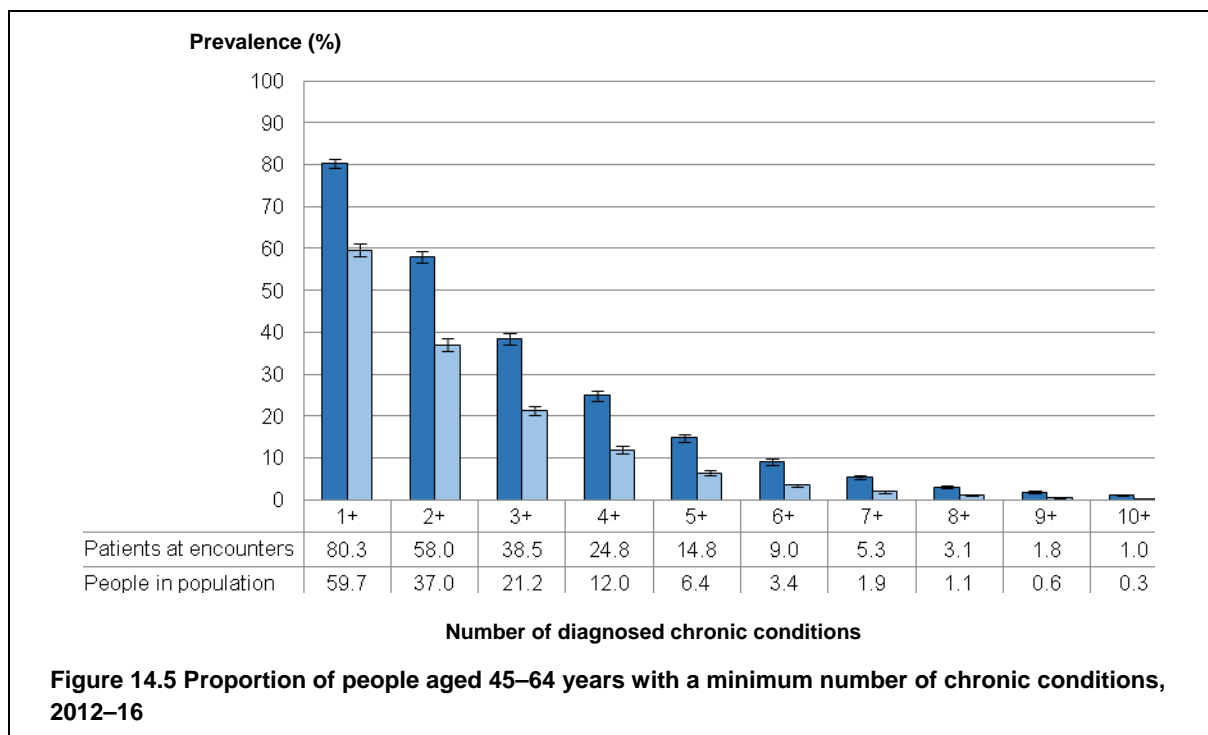
Between December 2012 and March 2016, we conducted a series of SAND substudies (see Section 2.6 for SAND methods) that examined the prevalence of diagnosed chronic conditions and multimorbidity among patients at general practice encounters. In total, information was collected from 43,531 patients, making it one of the largest nationally representative multimorbidity studies in the world. There were 11,747 patients in the sample aged 45–64 years. The study is described in more detail in SAND abstract 246 (Chapter 15).

Figure 14.5 shows that among those aged 45–64 years:

- the majority had one or more chronic conditions (80.3% of patients at GP encounters and 59.7% of people in the population). This means that only 19.7% of patients at encounters and 40.3% of people in the population aged 45–64 years had no diagnosed chronic conditions
- over one-third (38.5%) of patients at encounters and one in five (21.2%) people in the population had three or more diagnosed chronic conditions
- 9.0% of patients at encounters and 3.4% of people in the population had six or more diagnosed chronic conditions
- 1.0% of patients at encounters and 0.3% of people in the population had 10 or more diagnosed chronic conditions. Although this appears to be a very small proportion it does suggest about 19,000 middle-aged people have 10 or more diagnosed chronic conditions.

Extrapolating the proportion in the population with at least one diagnosed chronic condition (59.7%) to the number of people aged 45–64 in the population as of June 2015 (5,858,207) gives an estimated 3.5 million people aged 45–64 years with at least one chronic condition. Extrapolating last year's estimate of 89.7% of people aged 65+ having at least one diagnosed chronic condition to the number of people aged 65+ in the population in 2015 (3,569,020), gives an estimate of about 3.2 million people aged 65+ who have at least one diagnosed chronic condition. This is 300,000 less than the number of people aged 45–64 years with at least one diagnosed chronic condition.

Repeating the extrapolation for people with three or more diagnosed chronic conditions, we estimate there were about 1.2 million people aged 45–64 and 2.0 million people aged 65+ with three or more chronic conditions.



Prevalence and management of chronic conditions

Table 14.1 shows the prevalence and management rates of common chronic conditions among patients aged 45–64 years. The pattern differs markedly for individual chronic conditions.

Example 1: diagnosed hypertension

- was present in 26.4% of patients aged 45–64 years at GP–patient encounters
- was managed at 9.7% of encounters with patients aged 45–64 years, and therefore was managed at 36.6% of encounters with patients with diagnosed hypertension.

Patients aged 45–64 years with diagnosed hypertension visited a GP an average 7.9 times a year. Therefore, we can conclude that among patients with diagnosed hypertension, this condition was managed at 2.9 of their 7.9 visits a year on average.

The prevalence of diagnosed hypertension among people aged 45–64 years in the population was 17.5%. Of those people with hypertension, 70.5% had two or more other chronic conditions (that is, they had three or more diagnosed chronic conditions in total).

Example 2: diagnosed type 2 diabetes

- was present in 10.6% of patients aged 45–64 years at encounters
- was managed at 5.1% of encounters with patients aged 45–64 years
- was managed at 48.0% of GP encounters with a patient with diagnosed type 2 diabetes.

Patients aged 45–64 years with diagnosed type 2 diabetes visited 8.6 times a year on average (a little more often than patients with hypertension). This means that for these patients, their type 2 diabetes was managed 4.1 times a year on average.

The prevalence of type 2 diabetes among people aged 45–64 years in the population was 6.0%, and 78.6% of these people had two or more other diagnosed chronic conditions.

Example 3: diagnosed congestive heart failure (CHF)

- was present in 0.9% of patients aged 45–64 years at encounters
- was managed at only 0.2% of encounters with patients aged 45–64 years
- was therefore managed at 21.8% of GP visits made by a patient with diagnosed CHF.

Patients aged 45–64 years with CHF visited 12.4 times a year on average (over 50% more often than patients with hypertension). We conclude that in these patients, CHF was managed 2.7 times a year on average.

The prevalence of CHF among people aged 45–64 years in the population was 0.4% and nearly all of these people (94.5%) had two or more other chronic conditions.

Patterns of multimorbidity

We examined specific patterns of multimorbidity, and found the most common ‘pair’ of chronic conditions diagnosed among patients aged 45–64 years was hypertension and hyperlipidaemia:

- 10.3% (95% CI: 9.6–11.0) of patients surveyed at GP encounters have both
- 6.4% (95% CI: 5.9–7.0) of people in the population have both.

Of patients with both these conditions who were surveyed at encounter, 51.6% (95% CI: 49.3–53.9) had three or more other chronic conditions (i.e. five or more in total).

Hypertension and osteoarthritis was the second most prevalent pair, and both conditions were diagnosed in:

- 8.2% (95% CI: 7.6–8.8) of patients surveyed at encounter
- 4.1% (95% CI: 3.6–4.5) of people in the population.

Hyperlipidaemia and osteoarthritis was the third most common pair:

- 6.1% (95% CI: 5.5–6.6) of patients at encounters have both
- 3.2% (95% CI: 2.8–3.6) of people in the population have both.

It is therefore not surprising, that the most prevalent ‘trio’ of diagnosed chronic conditions was hypertension, hyperlipidaemia and osteoarthritis; all three conditions were diagnosed in:

- 3.8% (95% CI: 3.4–4.3) of patients at encounters
- 1.8% (95% CI: 1.5–2.0) of people in the population in this age group.

Of those patients at encounters with these three conditions, 77.4% (95% CI: 74.9–79.9) had at least two or more other conditions (5 or more diagnosed chronic conditions in total).

Table 14.1: Prevalence and management of chronic conditions among people aged 45–64 years

Diagnosed condition	Prevalence at encounters (95% CI)	Proportion of encounters where this problem was managed (95% CI)	Management ratio	Number of GP visits in previous year (95% CI)	Number of times this problem managed in general practice per year	Estimated prevalence in the population (95% CI)	Proportion of those with this condition that had 2 or more other chronic conditions (95% CI)
Hypertension	26.4% (25.4–27.3)	9.7% (9.0–10.3)	36.6%	7.9 (7.7–8.1)	2.9	17.5% (16.6–18.4)	70.5% (69.0–72.1)
Depression	22.0% (21.1–22.9)	5.6% (5.2–6.0)	25.4%	7.9 (7.6–8.1)	2.0	12.2% (11.5–13.0)	60.1% (58.2–62.1)
Osteoarthritis	20.5% (19.5–21.5)	3.9% (3.6–4.2)	19.1%	8.7 (8.5–9.0)	1.7	12.1% (11.2–12.9)	75.7% (74.2–77.3)
Hyperlipidaemia	18.8% (17.8–19.8)	4.7% (4.2–5.1)	24.9%	7.6 (7.4–7.8)	1.9	13.4% (12.5–14.2)	75.1% (73.3–76.8)
Anxiety	14.3% (13.5–15.1)	2.3% (2.1–2.6)	16.3%	7.9 (7.6–8.2)	1.3	7.8% (7.2–8.4)	59.9% (57.4–62.3)
Chronic back pain	11.9% (11.2–12.7)	2.2% (1.9–2.4)	18.2%	9.1 (8.7–9.5)	1.6	6.4% (5.7–7.0)	70.2% (67.5–72.8)
Gastro-oesophageal reflux disease	11.6% (10.8–12.3)	3.1% (2.8–3.4)	26.8%	8.6 (8.3–8.9)	2.3	7.0% (6.4–7.6)	74.9% (72.6–77.2)
Type 2 diabetes	10.6% (10.0–11.3)	5.1% (4.7–5.5)	48.0%	8.6 (8.3–8.9)	4.1	6.0% (5.5–6.5)	78.6% (76.5–80.6)
Asthma	8.8% (8.2–9.3)	2.0% (1.8–2.3)	23.1%	6.4 (6.1–6.7)	1.5	5.7% (5.1–6.2)	42.6% (40.1–45.1)
Malignant neoplasm	5.4% (4.9–5.8)	2.3% (2.0–2.3)	42.5%	8.1 (7.8–8.4)	3.4	3.5% (3.1–3.9)	63.4% (60.4–66.3)
Hypothyroidism	5.4% (4.9–5.8)	1.5% (1.3–1.7)	28.3%	7.3 (6.9–7.6)	2.1	3.6% (3.2–3.9)	60.6% (57.1–64.1)
Ischaemic heart disease	4.9% (4.4–5.3)	0.9% (0.7–1.0)	17.7%	9.9 (9.6–10.3)	1.8	2.6% (2.3–2.9)	88.3% (86.3–90.2)
Insomnia	4.4% (3.9–4.9)	1.3% (1.1–1.5)	30.2%	9.5 (8.8–10.1)	2.9	2.3% (1.9–2.7)	83.1% (79.5–86.8)

(continued)

Table 14.1 (continued): Prevalence and management of chronic conditions among people aged 45–64 years

Diagnosed condition	Prevalence at encounters (95% CI)	Proportion of encounters where this problem was managed (95% CI)	Management ratio	Number of GP visits in previous year (95% CI)	Number of times this problem managed in general practice per year	Estimated prevalence in the population (95% CI)	Proportion of those with this condition that had 2 or more other chronic conditions (95% CI)
Chronic obstructive pulmonary disease	3.7% (3.4–4.1)	0.8% (0.7–0.9)	20.9%	10.3 (9.8–10.8)	2.1	1.8% (1.5–2.0)	84.7% (82.2–87.2)
Sleep apnoea	3.1% (2.8–3.5)	0.6% (0.5–0.7)	19.1%	8.8 (8.2–9.4)	1.7	1.7% (1.5–2.0)	80.3% (75.6–85.1)
Other arthritis	2.9% (2.6–3.3)	0.2% (0.1–0.3)	6.7%	7.6 (7.0–8.2)	0.5	1.8% (1.5–2.2)	67.6% (62.4–72.7)
Osteoporosis	2.7% (2.4–3.0)	0.6% (0.5–0.8)	23.2%	9.7 (9.3–10.1)	2.3	1.6% (1.3–1.8)	81.4% (78.7–84.1)
Rheumatoid arthritis	1.7% (1.4–1.9)	0.7% (0.5–0.8)	39.2%	8.9 (8.0–9.8)	3.5	0.9% (0.7–1.1)	60.7% (54.7–66.6)
Atrial fibrillation	1.6% (1.4–1.9)	0.7% (0.5–0.8)	42.8%	11.3 (10.6–11.9)	4.8	0.9% (0.7–1.0)	86.0% (83.3–88.8)
Stroke/cerebrovascular accident	1.5% (1.2–1.7)	0.3% (0.2–0.4)	19.8%	10.1 (9.5–10.7)	2.0	0.7% (0.6–0.9)	89.0% (86.0–91.9)
Chronic renal failure	1.4% (1.1–1.6)	0.3% (0.2–0.4)	23.6%	11.3 (10.5–12.0)	2.7	0.7% (0.5–0.9)	87.6% (83.2–92.0)
Type 1 diabetes	1.0% (0.9–1.2)	0.3% (0.2–0.3)	24.3%	7.2 (6.4–7.9)	1.7	0.6% (0.5–0.8)	55.3% (47.6–63.0)
Congestive heart failure	0.9% (0.7–1.1)	0.2% (0.1–0.3)	21.8%	12.4 (11.7–13.2)	2.7	0.4% (0.3–0.5)	94.5% (92.6–96.4)
Peripheral vascular disease	0.9% (0.7–1.1)	0.1% (0.1–0.2)	16.1%	12.0 (11.3–12.7)	1.9	0.4% (0.3–0.5)	91.0% (87.8–94.2)
Hyperthyroidism	0.7% (0.6–0.9)	0.2% (0.2–0.3)	33.0%	7.0 (6.0–7.9)	2.3	0.6% (0.4–0.8)	59.9% (50.9–68.9)
Glaucoma	0.5% (0.4–0.6)	0.1% (0.1–0.1)	18.5%	8.8 (8.1–9.5)	1.6	0.4% (0.2–0.5)	77.6% (72.0–83.3)
Dementia (including Alzheimer's disease)	0.3 (0.2–0.5)	0.1 (0.1–0.2)	31.1%	10.5 (9.6–11.5)	3.3	0.1 (0.1–0.2)	82.2 (78.0–86.5)

Notes: CI: confidence intervals. Sources and calculation methods for results presented in Table 14.1 are provided in Appendix 5.

Lifestyle risk factors in patients aged 45–64 years

While age is an important contributing factor for many chronic conditions, lifestyle risk factors are also contributors. Patient weight, smoking status and level of alcohol consumption were all studied in SAND subsamples in each BEACH year. The SAND methods are described in Section 2.6, and Chapter 13 examines the prevalence of risk factors among all adult patients at GP encounters.

Body Mass Index

For samples from each year 2000–01 to 2015–16, the number of patients aged 45–64 years for whom BMI could be calculated ranged from 9,858 to 10,995.

Using the WHO definitions of BMI⁴, Figure 14.6 shows that between 2000–01 and 2015–16, the proportion of sampled patients aged 45–64 years who were:

- underweight stayed relatively constant at around 1.4%
- classed as ‘normal’ weight decreased from 33.1% to 27.4%
- considered ‘overweight’ decreased from 39.3% to 35.4%
- classed as ‘obese’ increased by 37% from 26.1% to 35.8%
 - classed as ‘Class III obesity’ or ‘morbidly obese’ more than doubled from 2.7% to 5.7%.

This increase in the proportion of patients considered to be obese is a concern as it is expected to increase the prevalence of related health problems (such as diabetes and cardiovascular disease) and escalate health care costs in future.⁵

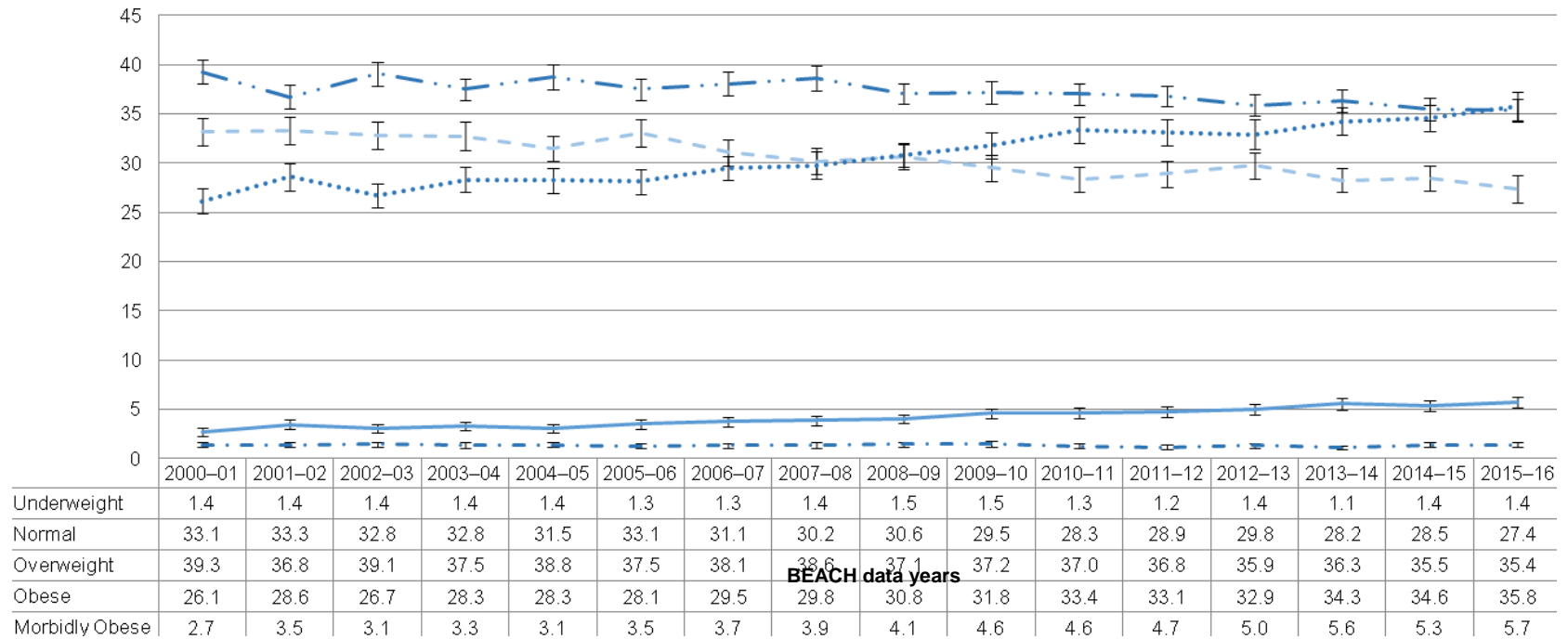
Smoking status & alcohol consumption

As discussed in Chapter 13, tobacco smoking is the leading cause of ill health, drug-related death and hospital separations in Australia.⁶

Figure 14.7 shows that between 2000–01 and 2015–16, there was no significant change in the proportion of patients aged 45–64 years who were daily smokers, staying steady at around 18% of patients.

Figure 14.7 also shows there was no significant change in the proportion of patients aged 45–64 years at GP encounters who were ‘hazardous drinkers’ of alcohol (defined as ‘at risk’ drinkers in Chapter 13), around one-quarter of 45–64 year olds.

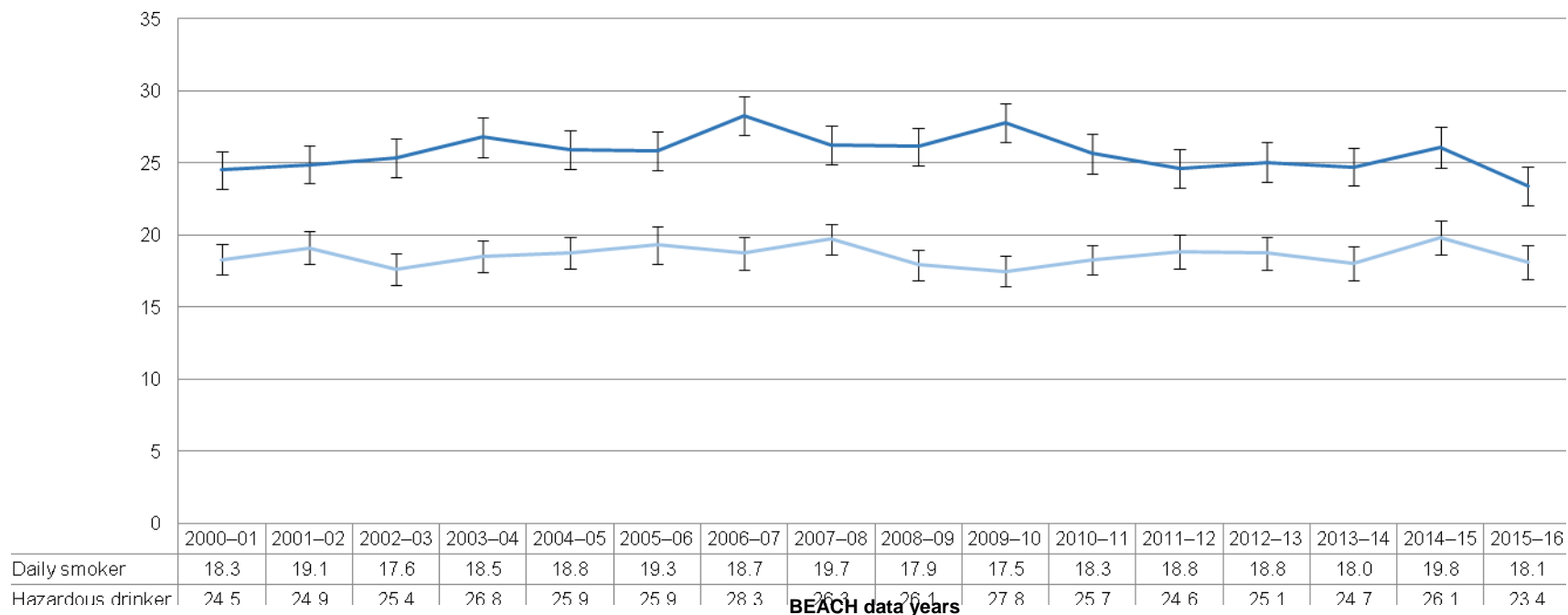
Per cent



Note: BMI – body mass index. Underweight – BMI <18.5, normal – BMI 18.5–24.99, overweight – BMI 25.0–29.99, obese – BMI 30, morbidly obese – BMI 40+. Columns will not total to 100% as the obesity category includes morbid obesity.

Figure 14.6: Proportion of patients at encounters aged 45–64 years in each body mass index group with 95% confidence intervals (2000–01 to 2015–16)

Per cent



Note: Hazardous drinker is defined in Chapter 13

Figure 14.7: Proportion of patients at encounters aged 45-64 years who were daily smokers and hazardous drinkers with 95% confidence intervals (2000-01 to 2015-16)

14.3 Discussion

This study has highlighted areas in which the health of people aged 45–64 years differs significantly from that of people in other age groups. However, like their older counterparts (those aged 65+), middle-aged patients use more health resources than average, have high rates of morbidity and have shown no improvement in their lifestyle risk factor profile over the 16 years of this study.

Patients aged 45–64 years, account for a significant proportion of GP resources. In 2000–01, they accounted for more GP encounters, GP clinical time, problems managed and referrals than older patients aged 65+. However, by 2014–15, patients aged 65+ accounted for more of all these services than those aged 45–64 years. Our results suggest that this change in proportional GP resource use by 45–64 year olds reflected their changed proportion of the population. This trend is likely to continue as more baby boomers progress into the 65+ cohort.

In November 2006, a new item number (item 717) was added to the MBS for a ‘well person’s health check’ (one check per person) for people aged 45–49 years attending general practice⁷ who have one or more identifiable risk factors for chronic disease. In theory, the health assessment at this age could help patients make lifestyle changes to prevent or delay the onset of chronic disease. Risk factors for consideration included lifestyle factors (smoking, physical activity, poor nutrition and alcohol consumption), biomedical factors (high cholesterol, high blood pressure, impaired glucose metabolism or excess weight), and family history of chronic disease.⁷ In 2008 an additional item number was added to the MBS, covering a check once every 3 years for patients aged 40–49 years, with diabetes health risk factors.⁸

The rate of test ordering at encounters with 45–64 year olds was higher than average among all patients, and higher than that for those 65+, but was relatively consistent over the study period. Some of this may be due to screening of ‘well persons’ but considering the age of these patients and the number of already diagnosed chronic conditions, much of this testing may well be associated with monitoring, with the aim of secondary prevention. In fact, the growth in test ordering for the 45–64 year olds was less (46%) than it was for patients at all encounters (57%). Further, compared with the 8% growth of the population aged 45–64 years, the proportion of tests they accounted for actually decreased by 4%.

Earlier diagnosis of chronic conditions and their subsequent ongoing management is likely to mean more encounters in general practice, because chronic conditions usually require lifelong management. However, the extra associated costs should improve patients’ overall health and potentially reduce the number of avoidable hospitalisations which generally incur far greater costs than the extra care provided in general practice.

Almost 60% of the population in this age group have one or more diagnosed chronic problems. Given the focus of the 45–49 health check was to prevent or delay the onset of chronic disease, and the focus of the diabetes check was prevention and/or early diagnosis, it is highly possible that some of these chronic conditions were diagnosed as a result of these checks.

Our results suggest there are about 300,000 more people aged 45–64 years (3.5 million) than aged 65+ years (3.2 million) with at least one diagnosed chronic condition. While people aged 65+ are far more likely than middle-aged patients to have multiple diagnosed chronic conditions, we estimate that about 1.2 million 45–64 year olds have three or more. Counting those in each age group with three or more chronic conditions results in 4.2 million Australians aged 45 years or older with at least three diagnosed chronic health problems. Since these conditions will generally continue to be treated over the patient’s lifetime, and people with multiple diagnosed chronic conditions visit the GP more often than average, this

has implications for future visit rates in general practice, and for the costs associated with the care of these patients as they age.

One in five 45–64 year olds, already had three or more diagnosed chronic conditions, the most common combination being hypertension + hyperlipidaemia + osteoarthritis. The most common ‘pair’ of diagnosed chronic conditions in this age group was hypertension + hyperlipidaemia: 1 in 10 surveyed patients and 1 in 15 of the population have both.

By 2015–16, over 70% of surveyed 45–64 year old patients were either overweight or obese, with the proportion who were morbidly obese more than doubling over the study period. Our results indicate that over the 16 year study period, there was a steady pattern of people moving ‘up the obesity scale’. This does not augur well for their future health as they move into the 65+ cohort. Further, if the sharp decrease observed in the proportion of normal weight patients since 2000–01 continues, in another 16 years we will have very few normal weight 45–64 year old patients at general practice encounters in Australia. Obesity is a problem being faced by most OECD countries and, as yet, none have found a solution to this ever-growing ‘epidemic’.⁵

While the proportions of patients who were daily smokers and hazardous drinkers decreased significantly among all adult patients at encounters (Chapter 13), there was no change in these risk behaviours for patients in the 45–64 year age group. Around 1 in 5 were daily smokers and 1 in 4 drank alcohol at hazardous levels. Despite interventions to address lifestyle risk factors, this age group is increasingly more likely to be overweight or obese, and there has been no measurable change in smoking and hazardous alcohol consumption for patients at GP encounters.

The Federal Government’s ‘Health Care Homes’ initiative currently proposes to target people with multiple chronic conditions,⁹ to improve the coordination of care of these people. However, our study suggests there will be middle-aged patients who do not have multiple chronic conditions, but who do have potentially modifiable lifestyle risk factors who would benefit from a ‘Health Care Home’ environment that enables greater access to allied health professionals.

We have reported on the 45–64 age group of patients because this is the group where early diagnosis of chronic conditions and the institution of secondary prevention measures could have a large long-term impact on both longevity and the number of quality-adjusted life years that will be enjoyed by future elder Australians. These early primary care interventions could significantly reduce the need for secondary and tertiary services (and associated costs) as the population continues to age. The study demonstrates that GPs are rising to the challenge of early diagnosis and management in middle-aged people.

This chapter contains unpublished methods that form part of Christopher Harrison’s thesis for his candidature for Doctor of Philosophy in Medicine.

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Appendix 5: Calculation methods for Table 14.1

Attending population weight

On the SAND recording form (see Appendix 1), there was a question asking the number of times the patient had seen a GP in the previous 12 months (including the current visit). An attending population weight was created by weighting each surveyed patient by their chance of being in our sample. The chance of being in our sample is based on how many times they had visited a GP in the previous year. A weight of $X/(\text{number of GP visits})$ was applied to each patient.

Management ratios

The management ratio was calculated by dividing the proportion of encounters at which the chronic condition was managed, by the prevalence of the condition among patients at general practice encounters.

Number of GP visits in previous 12 months

The average number of times patients aged 65+ with a certain chronic condition had seen a GP in the previous year was calculated using the attending population weight (described above).

Number of times condition was managed in general practice

The number of times a condition was managed in general practice was calculated by multiplying the management ratio by the average number of times patients with the selected chronic condition had visited a GP in the previous 12 months.

Population prevalence

Population prevalence was calculated by first applying the attending population weight to the data. A second weight was created so that when applied to the attending population weight, the proportion of surveyed patients in each age–sex group matched the proportion represented by that age–sex group in the Australian population.

The numerator of whether a patient had a specific chronic condition (1 = patient has chronic condition, 0 = patient does not have condition) was weighted by the proportion of people in that age–sex group that saw a GP at least once in the previous year. This adjusted the data for those who did not see a GP, who we assumed had not been diagnosed with that chronic condition.

Proportion of patients with a selected condition, who had 2 or more other chronic conditions

The proportion of people aged 65+ with a selected condition who had two or more other diagnosed chronic conditions was calculated using the attending population weight. This means that the results are representative of people in the population who have the selected diagnosed condition.

