

11 Changes in morbidity and management over time

Background

In the last decade, various changes have occurred in both the profile of the population aged 65 years or more and in the pattern of conditions requiring management by GPs. In 1991, the proportion of the Australian population aged 65 years or more was 11.3%, rising to 12.4% in 2001.¹ This increase has been reflected in the proportion of older people attending doctors (GPs and specialists). In 1989–90, 32.2% of 65–74 year olds, and 37.1% of those aged 75 years or more, consulted a doctor in the fortnight prior to interview. These figures rose to 40.1% (65–74) and 45.7% (75+) in 2001.⁴⁵

A large-scale national study of general practice activity with methods similar to the BEACH study was conducted in 1990–91, the Australian Morbidity and Treatment Survey (AMTS).⁹⁴ The methods used in the AMTS provided the foundation for the BEACH methods, and some data collected in the studies are directly comparable. Comparing data between the two surveys highlights changes that have occurred during this period in the management of older patients in general practice. These changes take the form of numbers and types of problems managed, and the types of treatments provided to patients.

Objectives

The objectives of this chapter are:

- to describe changes in the most frequently managed problems between 1990–91 and 2000–02 in patients aged 65 years and over, in those aged 65–74 years, and in those aged 75 years and over
- to describe changes that have occurred between 1990–91 and 2000–02 in the management of patients aged 65 years or more.

Method

Like BEACH, the AMTS was a national paper-based survey where a sample of GPs collected encounter information from clusters of patients. There were 495 GPs who participated in the AMTS. The sample was random, and stratified by state. As in BEACH, the sample population was determined by the number of Medicare claims made for general practice items of service. The minimum number of claims allowing inclusion in the survey was 1,500 over the most recent 12-month period (encompassing the year 1989).⁹⁴ The recruitment method used in the AMTS was identical to that used in BEACH. To ensure that state-based comparisons were valid, it was necessary to have a minimum of 4,000 encounters from each state. Thus the smaller states, Tasmania, the Australian Capital Territory and the Northern Territory, were oversampled to provide a minimum of 20 GP participants.

In the AMTS, the participating GPs recorded all consultations that occurred either in the surgery or in the patient's home for two periods of one week, six months apart. Post-stratification weighting corrected for the overrepresentation of the smaller states to provide national estimates. This led to a complete national dataset of 98,796 patient encounters.⁹⁴

The form used to collect encounter information is shown at Appendix 5. The AMTS and BEACH encounter forms are very similar. However, in BEACH more detailed information about management, particularly pharmaceuticals, is captured.

In the comparative analysis conducted for this report, some steps have been taken to ensure comparability between the surveys. The BEACH dataset has been reduced to exclude all indirect consultations and encounters at residential aged care facilities, as these types of encounters were not recorded in the AMTS. Also, BEACH allows greater specificity in the recording of treatments, especially in pathology and imaging. Tests, investigations and referrals can only be compared by reporting the number of these management techniques managed 'at least once' during the encounter.

In the AMTS, only those medications prescribed or supplied by the GP were recorded on the encounter form. Thus, in the reduced BEACH dataset, advised over-the-counter medications have been excluded from the analysis.

Statistical methods to incorporate the single-stage cluster design of both surveys have been incorporated into the analysis. Where specific comparisons are made, statistical significance has been determined by non-overlapping confidence intervals (CI).

11.1 Changes over time in the morbidity and management of patients aged 65 years and over

In the AMTS, there were 492 GPs who recorded 24,156 encounters with patients aged 65 years and over in 1990–91 and, in BEACH, 1,880 GPs recorded 41,040 encounters with this age group during 2000–02. A comparison of these encounters (Table 11.1) shows that RFEs were recorded at a significantly higher rate in BEACH than in the AMTS (164.9 per 100 encounters compared with 159.5 per 100 encounters). This difference did not generate a higher rate of problems managed in BEACH than in the earlier survey, with 174.4 problems managed per 100 encounters in both studies. Despite this similarity, the rate of new problems was significantly higher in data collected through the AMTS (48.2 per 100 encounters) than in BEACH (41.1 per 100 encounters).

At least one treatment was given at 85.5% of encounters in BEACH, a significantly higher proportion than the 82.6% recorded in the AMTS. Non-pharmacological treatments were recorded at a greater proportion of encounters in BEACH than in the AMTS (49.5 per 100 encounters compared with 34.5 per 100). This result was reflected in the proportion of encounters where clinical treatments were recorded (32.8 per 100 encounters compared with 19.5 per 100).

Referrals were given to patients aged 65+ significantly more often at encounters recorded in BEACH (11.9 per 100 encounters) compared with those recorded in the AMTS (10.4 per 100). At least one referral to a specialist was given at a significantly higher rate in BEACH (8.1% of encounters generating at least one) compared with the AMTS (6.6%). Also, at least one pathology test was ordered at a significantly greater proportion of encounters in BEACH than in the AMTS (16.0% of 100 encounters compared with 12.3%). The likelihood of encounters resulting in medications prescribed or supplied by the GP, at least one referral to allied health services or hospital/emergency departments, or at least one order for an imaging test, did not change over the decade (Table 11.1).

Table 11.1: Summary of morbidity and management in patients aged 65 years and over (AMTS compared with BEACH)

Rates	AMTS 1990–91 (n = 24,156)				BEACH 2000–02 (n = 41,040)			
	Number	Rate per 100 encounters	95% LCL	95% UCL	Number	Rate per 100 encounters	95% LCL	95% UCL
General practitioners	492	—	—	—	1,880	—	—	—
Encounters (N)	24,156	—	—	—	41,040	—	—	—
Reasons for encounter	38,527	159.5	156.8	162.2	67,668	164.9	163.2	166.6
Problems managed	42,129	174.4	170.7	178.1	71,565	174.4	172.4	176.4
New problems	11,643	48.2	46.7	49.7	16,846	41.1	39.9	42.2
Medications	31,018	128.4	123.7	133.1	53,307	129.9	127.0	132.8
Non-pharmacological treatments	8,339	34.5	32.4	36.6	20,296	49.5	47.6	51.3
Clinical treatments	4,715	19.5	17.7	21.3	13,439	32.8	31.1	34.4
Therapeutic procedures	3,624	15.0	14.0	16.0	6,857	16.7	15.9	17.5
Referrals	2,506	10.4	9.8	11.0	4,895	11.9	11.5	12.4
Occurrences—at least one	Number	Per cent	95% LCL	95% UCL	Number	Per cent	95% LCL	95% UCL
At least one treatment type	19,952	82.6	81.5	83.7	35,106	85.5	85.0	86.1
At least one referral to specialist	1,584	6.6	6.1	7.0	3,317	8.1	7.7	8.5
At least one referral to allied health	522	2.2	1.9	2.4	986	2.4	2.0	2.8
At least one referral to hospital or an emergency department	343	1.4	1.1	1.7	291	0.7	0.1	1.4
At least one pathology order	2,971	12.3	11.6	13.0	6,578	16.0	15.5	16.6
At least one imaging order or other investigation	1,676	6.9	6.4	7.4	3,070	7.5	7.1	7.9

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

11.2 Problems managed in patients aged 65+

Hypertension was the most frequently managed problem in general practice encounters with patients aged 65 years and over in both the AMTS and BEACH studies. There was no significant change in its rate of management, being managed at a rate of 20.7 per 100 encounters in the AMTS, and 21.1 per 100 encounters in BEACH (Table 11.2).

The second most frequently managed problem in both studies was osteoarthritis. However, the rate of management for this problem increased significantly from 6.6 contacts per 100 encounters in the AMTS to 7.5 per 100 encounters in BEACH.

There was a significant decline in the management rate of ischaemic heart disease in this age group over the decade. Ischaemic heart disease was the third most common problem managed in the AMTS, managed at an average rate of 6.1 per 100 encounters. In comparison, it was the sixth most frequently managed problem in BEACH, at an average rate of 3.9 per 100 encounters.

Heart failure was significantly more often managed in the AMTS (6.0 per 100 encounters) than in BEACH (2.6 per 100 encounters). While diabetes was among the top five most common problems managed in both datasets, it was managed significantly more often in 2000–02 than in 1990–91 (6.2 per 100 encounters compared with 4.4 per 100 encounters).

There were a number of other significant differences when comparing general practice encounters from 1990–91 to encounters recorded between 2000 and 2002. Those problems managed at a higher rate in the earlier study include:

- chronic obstructive pulmonary disease, managed at an average rate of 3.6 per 100 encounters, compared with 2.2 per 100 encounters in BEACH
- anxiety, managed at a rate of 3.3 per 100 encounters in the AMTS, a significantly higher rate than in BEACH, where its management rate was 1.9 per 100 encounters
- anaemia, managed at an average rate of 2.2 per 100 encounters in the AMTS, compared with 1.3 per 100 encounters in BEACH (Table 11.2).

Other conditions were managed at a significantly higher rate in the BEACH study than in the AMTS.

- Immunisation was recorded twice as frequently in BEACH (6.6 per 100 encounters) than in the AMTS (3.2 per 100 encounters)
- Lipid disorders were managed significantly more often in BEACH than in the AMTS (5.2 per 100 encounters compared with 2.2 per 100 encounters). This is highlighted in the relative ranks of each. Lipid disorders ranked the fifth most common problem managed in BEACH, whereas it ranked seventeenth in the AMTS
- ‘Prescriptions’ were recorded as the problem being managed at an average rate of 3.4 per 100 encounters in BEACH, compared with 1.0 per 100 encounters in the AMTS
- The management rate of oesophageal disease was significantly higher in BEACH, at a rate of 2.9 per 100 encounters, compared with 1.1 per 100 encounters in the AMTS
- Atrial fibrillation/flutter was managed at 2.2 per 100 encounters in BEACH, a significantly higher rate than in the AMTS, where the rate of management was 1.1 per 100 encounters (Table 11.2).

Table 11.2: Most frequent individual problems managed at encounters with the 65+ patient age group—AMTS (1990–91) compared with BEACH (2000–02)

Problem managed	AMTS 1990–91 (n = 24,156)				BEACH 2000–02 (n = 41,040)			
	Rank	Rate per 100 encs ^(a)	95% LCL	95% UCL	Rank	Rate per 100 encs ^(a)	95% LCL	95% UCL
Hypertension*	1	20.7	19.7	21.7	1	21.1	20.4	21.9
Osteoarthritis*	2	6.6	6.1	7.1	2	7.5	7.2	7.9
Ischaemic heart disease*	3	6.1	5.6	6.6	6	3.9	3.6	4.3
Heart failure	4	6.0	5.4	6.5	11	2.6	2.2	2.9
Diabetes*	5	4.4	4.0	4.8	4	6.2	5.8	6.6
Sleep disturbance	6	3.8	3.3	4.3	8	3.2	2.7	3.6
Chronic obstructive pulmonary disease	7	3.6	3.2	4.0	19	2.2	1.9	2.6
Acute bronchitis/bronchiolitis	8	3.3	2.9	3.6	12	2.6	2.2	2.9
Anxiety*	9	3.3	2.9	3.7	24	1.9	1.5	2.3
Immunisation all*	10	3.2	2.1	4.2	3	6.6	4.9	8.3
Skin texture symptom/complaint	11	2.8	2.5	3.2	13	2.5	2.0	2.9
Upper respiratory infection, acute	12	2.7	2.4	3.0	20	2.2	1.8	2.6
Asthma	13	2.7	2.4	3.0	17	2.3	1.9	2.6
Depression*	14	2.7	2.4	3.0	10	2.8	2.5	3.2
Chronic ulcer skin	15	2.4	2.0	2.8	26	1.8	1.4	2.2
UTI*	16	2.3	2.1	2.5	22	2.0	1.7	2.3
Lipid disorder	17	2.2	1.8	2.6	5	5.2	4.8	5.6
Malignant neoplasm, skin	18	2.2	1.8	2.7	23	1.9	1.4	2.4
Anaemia*	19	2.2	1.8	2.5	27	1.3	1.0	1.7
Dermatitis, contact/allergic	20	2.0	1.8	2.3	25	1.8	1.5	2.1
Back syndrome without radiating pain	21	1.9	1.6	2.3	29	1.3	0.8	1.7
Back complaint*	22	1.8	1.4	2.0	16	2.3	2.0	2.7
Joint symptom/complaint NOS	23	1.6	0.9	2.2	136	0.3	0.0	1.0
Musculoskeletal disease, other	24	1.5	1.2	1.8	31	1.1	0.6	1.4
General check-up*	25	1.5	1.0	2.0	15	2.4	1.9	2.8
Prescription all*	40	1.0	0.0	2.1	7	3.4	2.6	4.1
Oesophageal disease	36	1.1	0.8	1.4	9	2.9	2.6	3.2
Cardiac check-up*	29	1.4	0.8	1.9	14	2.4	1.6	3.1
Atrial fibrillation/flutter	34	1.1	0.8	1.4	18	2.2	1.8	2.6
Osteoporosis	28	1.4	1.0	1.8	21	2.1	1.7	2.4
<i>Subtotal (n, %)</i>	—	100	57.1%	—	—	102	57.6%	—
Total problems	—	174.4	170.7	178.1	—	177.0	174.9	179.1

(a) Figures do not total 100.0 as more than one problem can be managed at each encounter.

* Includes multiple ICPC–2 and ICPC–2 PLUS codes.

Note: Shading indicates statistically significant differences between age groups. Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit; UTI—urinary tract infection.

11.3 Comparison of problems managed in the 65–74 year age group—AMTS and BEACH

As in the total 65 years and over population, hypertension was the most frequently managed problem in both the AMTS and BEACH studies, at rates of 22.2 per 100 encounters (95% CI: 21.1–23.4) and 21.4 per 100 encounters (95% CI: 20.6–22.3) respectively (result not shown). There was no significant change in the rates of management for this problem over the time period examined. This was followed by osteoarthritis, managed at a significantly higher rate in general practice patients in 2000–02 (7.3 per 100 encounters) than in 1990–91 (5.8 per 100 encounters) (Table 11.3).

Table 11.3 provides the comparative results from the two studies for morbidities which showed significant change over the period. In this age group, ischaemic heart disease was managed more often in the AMTS than in BEACH (5.5 per 100 encounters compared with 3.4), as was heart failure (3.2 per 100 encounters in the AMTS and 1.5 in BEACH).

In contrast, diabetes and lipid disorders were managed less often in 1990–91 than in 2000–02. The management rate of diabetes increased from 4.5 to 7.2 per 100 encounters, while that of lipid disorder rose from 3.5 to 7.0 per 100 encounters. Oesophageal disease was also managed, on average, more often in BEACH, at a rate of 3.1 per 100 encounters, significantly higher than the 1.2 per 100 recorded in the AMTS. In contrast, anxiety was managed twice as frequently in 1990–91 (3.6 per 100 encounters) than in 2000–02 (1.8 per 100).

Table 11.3: Significant differences in problems managed between the AMTS and BEACH in the 65–74 year patient group

Problem managed	AMTS 1990–91 (n = 13,249)				BEACH 2000–02 (n = 20,577)			
	Rank	Rate per 100 encs	95% LCL	95% UCL	Rank	Rate per 100 encs	95% LCL	95% UCL
Osteoarthritis*	2	5.8	5.3	6.4	2	7.3	6.8	7.8
Ischaemic heart disease*	3	5.5	4.9	6.1	6	3.4	2.7	4.0
Diabetes*	4	4.5	4.0	5.1	4	7.2	6.5	7.8
Anxiety*	6	3.6	3.1	4.1	19	1.8	1.0	2.6
Lipid disorder	7	3.5	2.8	4.1	5	7.0	6.4	7.7
Heart failure	10	3.2	2.7	3.7	25	1.5	0.5	2.5
Immunisation all*	11	3.2	2.0	4.5	3	7.2	5.0	9.3
Oesophageal disease	32	1.2	0.8	1.7	8	3.1	2.5	3.8
<i>Subtotal (n, %)</i>	—	31	17.6%	—	—	39	21.9%	—
Total problems	—	173.0	169.3	176.8	—	175.9	173.7	178.0

* Includes multiple ICPC–2 and ICPC–2 PLUS codes.

Note: Rank indicates relative position of rate of management of all problems in the study. Shading indicates statistically significant differences between age groups. Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit.

11.4 Comparison of problems managed in the 75+ age group—AMTS and BEACH

There were fewer significant differences exhibited when data from the AMTS and BEACH studies were examined for patients aged 75 years and over (Table 11.4). Hypertension was

again the most frequently managed problem, at a rate of 18.9 per 100 encounters in the AMTS (95% CI: 17.6–20.1) and 20.8 per 100 encounters in BEACH (95% CI: 19.9–21.7). There was no significant difference between these rates.

Heart failure was managed at encounters with this age group in the AMTS at almost three times the rate recorded in the BEACH study (9.3 per 100 encounters compared with 3.7 per 100). Ischaemic heart disease was also managed at a significantly higher rate in the earlier study, at a rate of 6.8 per 100 encounters compared with 4.5 per 100 in BEACH.

Lipid disorders were managed at almost five times the rate in BEACH than in the AMTS (3.4 per 100 encounters compared with 0.7 per 100 encounters). The management rate of atrial fibrillation also increased from 1.3 per 100 encounters in the AMTS to 2.8 per 100 in BEACH, while the rate for oesophageal disease rose from 1.0 per 100 encounters for 2.7 per 100.

Table 11.4: Most frequent individual problems managed at encounters with the 75+ patient age group—AMTS (1990–91) compared with BEACH (2000–02)

Problem managed	AMTS 1990–91 (n = 10,907)				BEACH 2000–02 (n = 20,463)			
	Rank	Rate per 100 encs	95% LCL	95% UCL	Rank	Rate per 100 encs	95% LCL	95% UCL
Heart failure	2	9.3	8.4	10.2	7	3.7	3.1	4.2
Ischaemic heart disease*	4	6.8	6.1	7.6	5	4.5	3.9	5.1
Lipid disorder	48	0.7	0.0	1.7	9	3.4	2.7	4.1
Atrial fibrillation/flutter	31	1.3	0.6	2.0	11	2.8	2.2	3.5
Oesophageal disease	42	1.0	0.2	1.7	12	2.7	2.1	3.3
<i>Subtotal (n, %)</i>	—	19	10.8%	—	—	17	9.6%	—
Total problems	—	176.1	172.0	180.2	—	178.2	175.7	180.6

* Includes multiple ICPC–2 and ICPC–2 PLUS codes.

Note: Rank indicates relative position of rate of management of all problems in the study. Shading indicates statistically significant differences between age groups. Encs—encounters; LCL—lower confidence limit; UCL—upper confidence limit.

Summary

This chapter demonstrates that there have been a number of changes over the last decade both in the conditions managed in older patients, and in the methods of management in general practice. Specifically, it is interesting to note the patterns of change that have occurred. For example, there have been significant changes in the management of cardiovascular conditions over the last decade. During this period, the rates of management for ischaemic heart disease and heart failure have declined, while the rates for atrial fibrillation and lipid disorders have increased. However, the management rate of hypertension has not changed over the study period. Further, no individual form of treatment was managed at significantly higher rates in the AMTS in 1990–91 than in BEACH 2000–02. These issues will be discussed in greater detail in Chapter 14 Discussion.