

16 Gastro-oesophageal reflux disease

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16.1 Background, policies and initiatives

Although gastro-oesophageal reflux disease (GORD) has not been declared a National Health Priority Area, it causes a well documented high disease burden on the Australian community, and large health expenditures for both health services and pharmaceuticals.

- Knox et al. (2008) estimate the prevalence of GP-diagnosed gastro-oesophageal reflux disease in Australia to be 10.4% (95% CI: 9.3–11.5) of patients attending GPs and 9.2% (95% CI: 8.2–10.1) of the Australian population.¹ This equates to approximately 2 million Australians with GORD. The prevalence of GORD in the Australian community is similar to that of osteoarthritis, asthma or depression.¹
- A systematic review by Dent et al. in 2005, using strict criteria for disease definition in population-based studies of GORD, found a prevalence varying from 20% in the United States and the United Kingdom to 5% in China.²
- Dent et al. reviewed the management of GORD, and found that it has a significant impact on quality of life, and that lifestyle modification measures are of low efficacy.³
- The hospital admission rate for GORD is also significant with 60,064 admissions to Australian hospitals with GORD with or without oesophagitis in 1998–00 and 61,049 in 2006–07.⁴
- In 1992, proton pump inhibitor (PPI) pharmaceuticals were introduced onto the Pharmaceutical Benefits Scheme (PBS) for the treatment of oesophagitis due to GORD. This was accompanied by a requirement that the diagnosis had to be proven by endoscopy, x-ray or surgery before PPIs were prescribed. This restriction was removed in 2001.⁵
- The number of Medicare-funded upper gastrointestinal endoscopy services rose from 163,963 in 1994 to 231,179 in 2001, and fell to 219,415 in 2002 (after the requirement for endoscopy was removed), before increasing steadily again to 258,357 in 2007.⁶
- In 2006–07, the cost to the Pharmaceutical Benefits Scheme of prescribed proton pump inhibitor medications was more than \$400 million.⁷

16.2 Prevalence in general practice patients

Several BEACH SAND⁸ substudies have investigated the prevalence and management of GORD. Prevalence estimates from those studies are shown in Table 16.1. The first study (GORD 1 1998) reported the prevalence of reflux symptoms/heartburn in the preceding 12 months. The GORD SAND 2, 3 and 4 studies reported the prevalence of GORD diagnosed at the current or a previous patient encounter. These three studies produced comparable results that did not statistically differ. The last study (GORD 5 2006) used GORD symptoms (similar to those used in GORD 1) that may have occurred at any time in the past and may have resolved, and found a much higher prevalence rate of 29.5% compared with the previous three studies. However of the 828 patients with symptoms of GORD in GORD

SAND 5, 46.1% had current symptoms and 30.8% had symptoms in the previous 12 months which would be similar to the findings in GORD 2–4.^{9,10}

These results equate well with the systematic review by Dent referred to above² but are significantly higher than the prevalence reported by Knox. The latter reported patients with GORD currently under management, a method that would have underestimated the total GORD prevalence in patients attending general practice, as it excluded those patients with GORD who had not sought medical care for their problem.¹

Table 16.1: GORD prevalence estimates from SAND studies 1998 to 2006

SAND study ^{9,10}	Abstract number	Study year	Patients	Prevalence (per cent)	95% CI
GORD 1	Chapter 8	1998	3,368	12.5	10.5–14.5
GORD 2	Abstract 24	2001	2,767	15.7	13.3–18.0
GORD 3	Abstract 34	2001–02	3,018	19.9	16.8–22.9
GORD 4	Abstract 60	2003	2,538	16.2	14.1–18.4
GORD 5	Abstract 100	2006	2,801	29.5	26.4–32.6

Note: CI—confidence limit. Chapter 8 refers to Chapter 8 of AIHW publication, *Measures of health and health care delivery in general practice in Australia 2000*.

16.3 Multimorbidity occurring with GORD

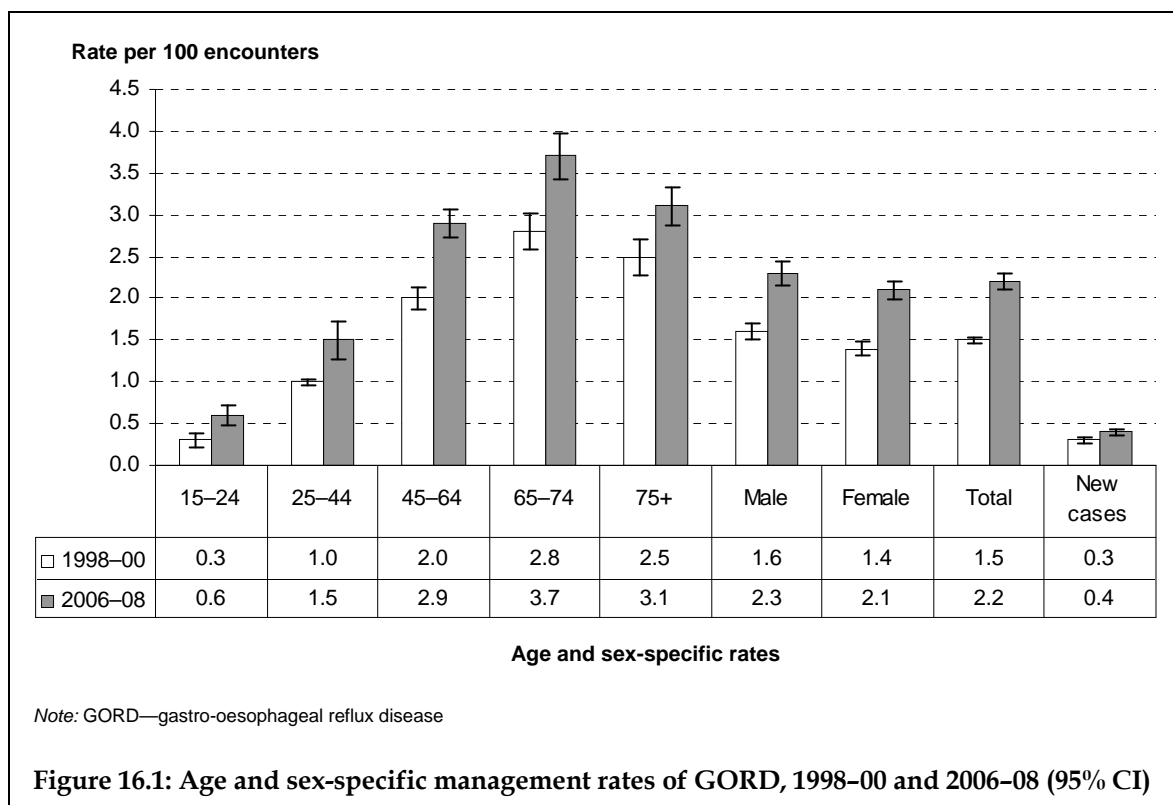
Britt et al. investigated the occurrence of multimorbidity in patients with GORD using data from another BEACH SAND substudy in 2005.¹¹ The Cumulative Illness Rating Scale was used to group chronic illnesses into domains according to the method described by Fortin et al.¹² For patients with GORD the most common associated morbidity was vascular disease, this combination occurring in 5.0% of the Australian population. Of those patients with GORD and vascular disease, 25.1% had a morbidity in a third domain and 63.7% had two or more additional morbidities.

GORD patients with one or more additional morbidity domains constituted 9.1% of the population (estimated to be 1.9 million patients nationally), 4.9% had three or more morbidity domains (more than 1 million patients) and 3.2% had four or more morbidity domains (estimated to be 672,000 patients).

16.4 Management in general practice

As shown in Figure 16.1, since 1998–00 there has been about a 45% increase in the management rate of GORD in general practice, from 1.5 per 100 encounters in 1998–00 (95% CI: 1.4–1.6) to 2.2 per 100 encounters in 2006–08 (95% CI: 2.1–2.3). This change was reflected in all age groups of 15 years and over and in both sexes.

There has also been a significant increase of 46% in the rate of new diagnoses of GORD, from 0.26 per 100 encounters in 1998–00 (95% CI: 0.23–0.28) to 0.38 per 100 encounters in 2006–08 (95% CI: 0.35–0.41) (Figure 16.1).



Pathology test ordering

In the coding of pathology tests, a different system was used in 1998-00 to that used in subsequent years. Pathology orders have therefore been compared between 2000-02 and 2006-08.

There was no significant change in the likelihood of at least one pathology test for GORD being ordered, for 4.3 % of GORD problems in 2000-02 and 4.7 in 2006-08. Total pathology orders for GORD also showed no significant change from 8.1 (95% CI: 6.4-9.8) per 100 GORD problems in 2000-02 to 10.6 (95% CI: 8.7-12.5) in 2006-08.

The most commonly ordered test, that for full blood count, remained constant at about 1.8 per 100 GORD problems. H. Pylori testing also remained constant at about 1.7 per 100 GORD problems. In 2006-08, the H. Pylori testing rate was 1.8 (95% CI: 1.3-2.2) per 100 total GORD problems, while for new cases of GORD the test rate was significantly higher at 4.3 (95% CI: 2.8-5.8) per 100 new GORD problems.

Imaging orders

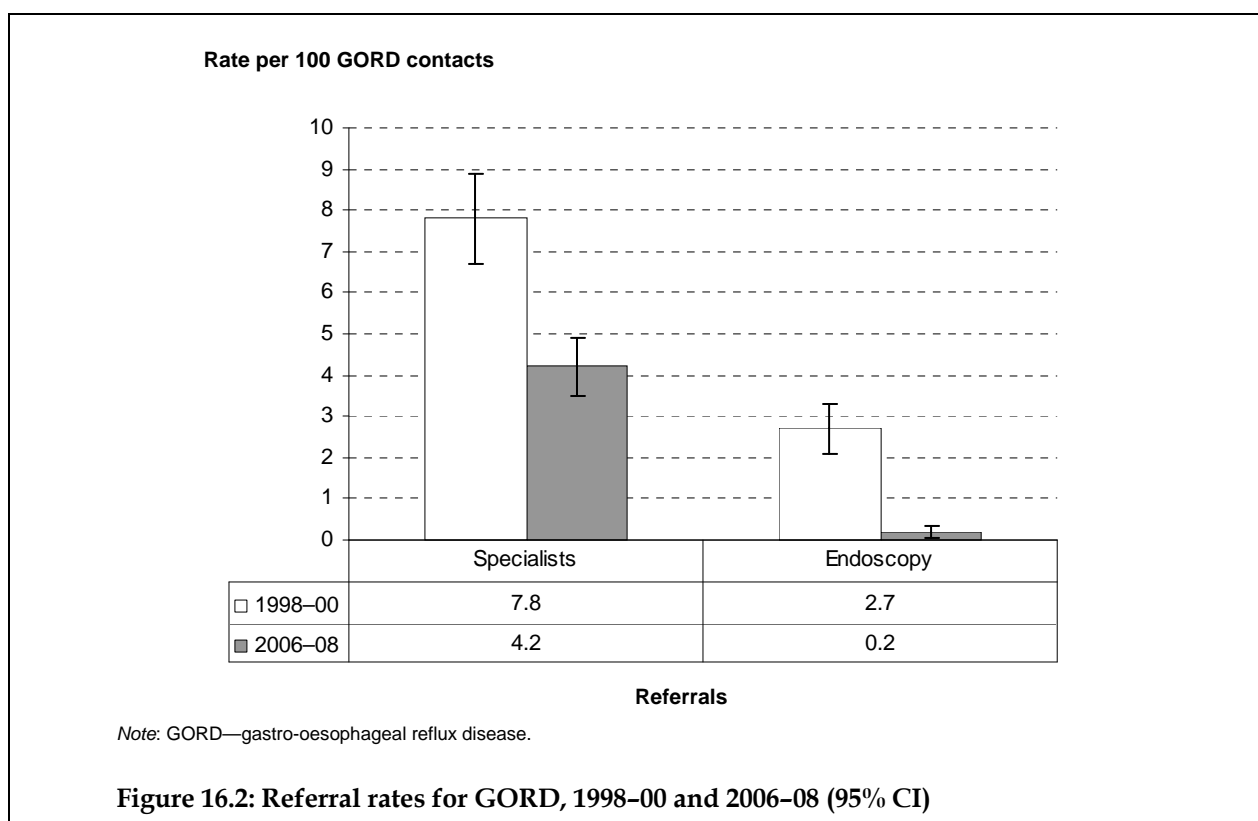
In the coding of imaging orders, a different coding system was used in BEACH in 1998-00 to that used in subsequent years. Imaging orders have therefore been compared between 2000-02 and 2006-08.

Imaging orders occurred at the low level of just over 2 per 100 GORD contacts in 2000-02, and were unchanged in 2006-08. This compares to just over six imaging orders per 100 problem contacts in the overall BEACH data.¹³

Referrals

The rate at which patients were referred to specialists (including for endoscopy), for GORD halved over the study period, from 7.8 (95% CI: 6.7–8.9) per 100 GORD problems in 1998–00 to 4.2 (95% CI: 3.5–4.8) in 2006–08.

Referrals for endoscopy reduced substantially from 2.7 (95% CI: 2.1–3.3) per 100 GORD contacts in 1998–00 to 0.2 (95% CI: 0.0–0.3) per 100 contacts in 2006–08 (Figure 16.2).



16.5 Therapeutic management

Medications

There was no significant change in total medication rates (prescribed, supplied and advised) per 100 GORD problems managed between 1998–00 and 2006–08, at 95.5 (95% CI: 93.7–97.4) medications per 100 GORD problems in 1998–00 and 94.5 (95% CI: 93.3–95.7) in 2006–08. This is significantly higher than the medication rate in BEACH patients in 2006–08 of 65.7 (95% CI: 64.8–66.6) medications per 100 problems.

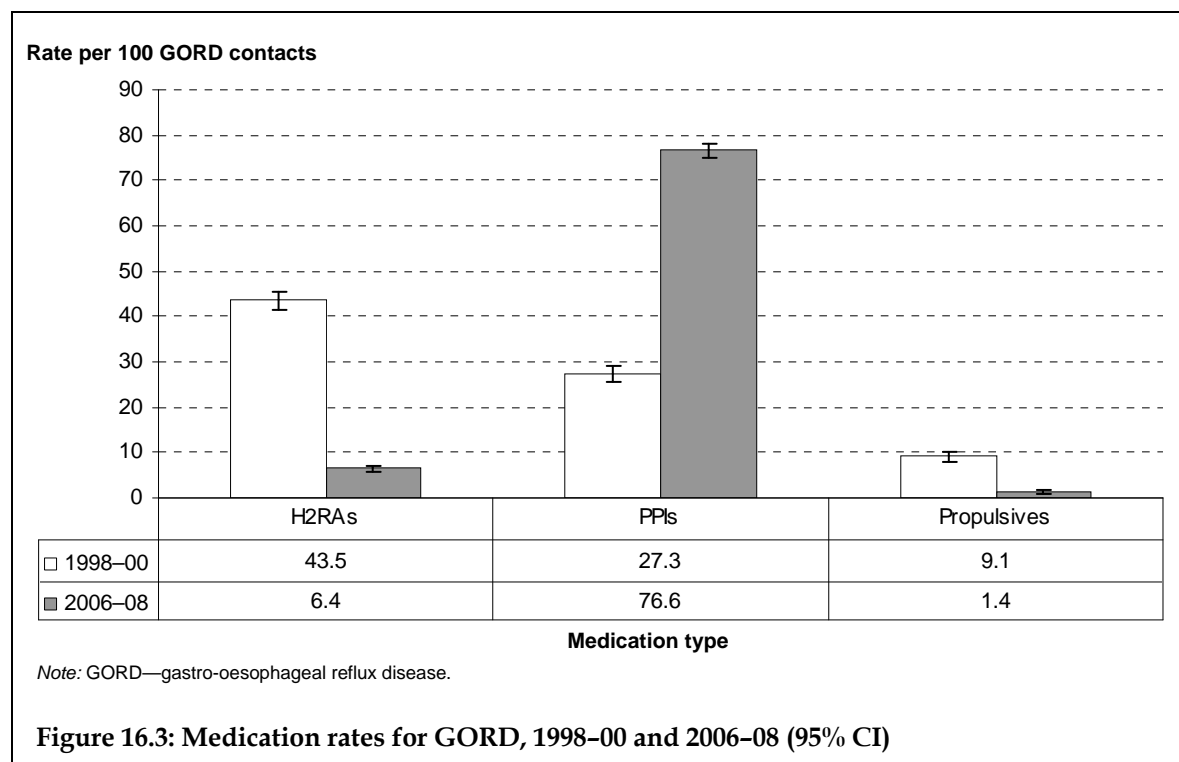
The majority of medications recorded for the management of patients' GORD were the acid suppressant agents, H₂ receptor antagonists (H₂RA) and proton pump inhibitors. Acid suppressant medications as a group showed no change in rate during the study period.

There was however a major shift in use between H₂RAs and proton pump inhibitors between 1998–00 and 2006–08. H₂RAs decreased massively in frequency of use from

43.5 (95% CI: 41.6–45.5) per 100 GORD problems in 1998–00 to 6.4 (95% CI: 5.5–7.2) in 2006–08. Proton pump inhibitors, on the other hand, increased from 27.3 (95% CI: 25.5–29.0) per 100 GORD problems in 1998–00 to 76.6 (95% CI: 75.1–78.1) in 2006–08 (Figure 16.3).

The second most frequently recorded medication group were propulsives, which decreased sharply in use from 9.1 (95% CI: 7.9–10.2) per 100 GORD problems in 1998–00 to 1.4 (95% CI: 1.1–1.8) in 2006–08.

Other therapies such as antacids, and antiregurgitants are now prescribed, advised or supplied at very low levels.



Other treatments

There was no significant change in the level of clinical treatments such as advice and counselling between 1998–00 and 2006–08 which occurred at a rate of about 15 per 100 GORD problems managed. Clinical treatments were provided for new cases of GORD at about 26 per 100 new GORD problems managed, remaining unchanged over the period. Procedural treatments remained constant at about one procedure per 100 GORD problems.

16.6 Overview of management of GORD in 2006–08

Figure 16.4 provides an overview of the management of GORD at GP encounters during 2006–08. GORD was managed in BEACH 4,100 times in the 2 years from April 2006 to March 2008, at a rate of 2.2 per 100 encounters. This represents about 2.3 million encounters per year at which GORD is managed in general practice nationally. Some problem and concept labels in this section include grouped ICPC-2 and ICPC-2 PLUS codes (see Chapter 2). A full list of code groups is provided in Appendix 3.

Age and sex of patients

Of encounters at which GORD was managed (GORD encounters), 60% were with female patients, which is similar to the distribution for all BEACH encounters. The sex-specific rates showed similar GORD management rates of 2.3 per 100 total encounters with males and 2.1 per 100 encounters with females. The age distribution of patients at GORD encounters showed significant differences from the total BEACH data. There were higher than average proportions of patients aged 45–64 years (36.6%), 65–74 years (21.1%) and 75 years and over (21.3%). Age-specific management rates were highest among those age groups.

Reasons for encounter

Request for prescription was the most common reason for encounter stated by patients (38.2 per 100 of these encounters). Oesophageal disease was the reason given by patients for attendance at 19.5 per 100 GORD encounters.

Other problems managed

Hypertension problems were the most commonly managed problems with GORD, at a rate of 19.8 per 100 of these encounters, followed by lipid disorders at 8.9 per 100 GORD encounters. Depression and osteoarthritis (at 5.3 and 4.8 per 100 GORD encounters, respectively) were managed at significantly higher than average rates for BEACH.

Specialist referrals

Patients with GORD were referred at a rate of 4.2 per 100 problems, half the rate for all BEACH encounters.¹³ Referrals were made most frequently to gastroenterologists.

Pathology and imaging orders

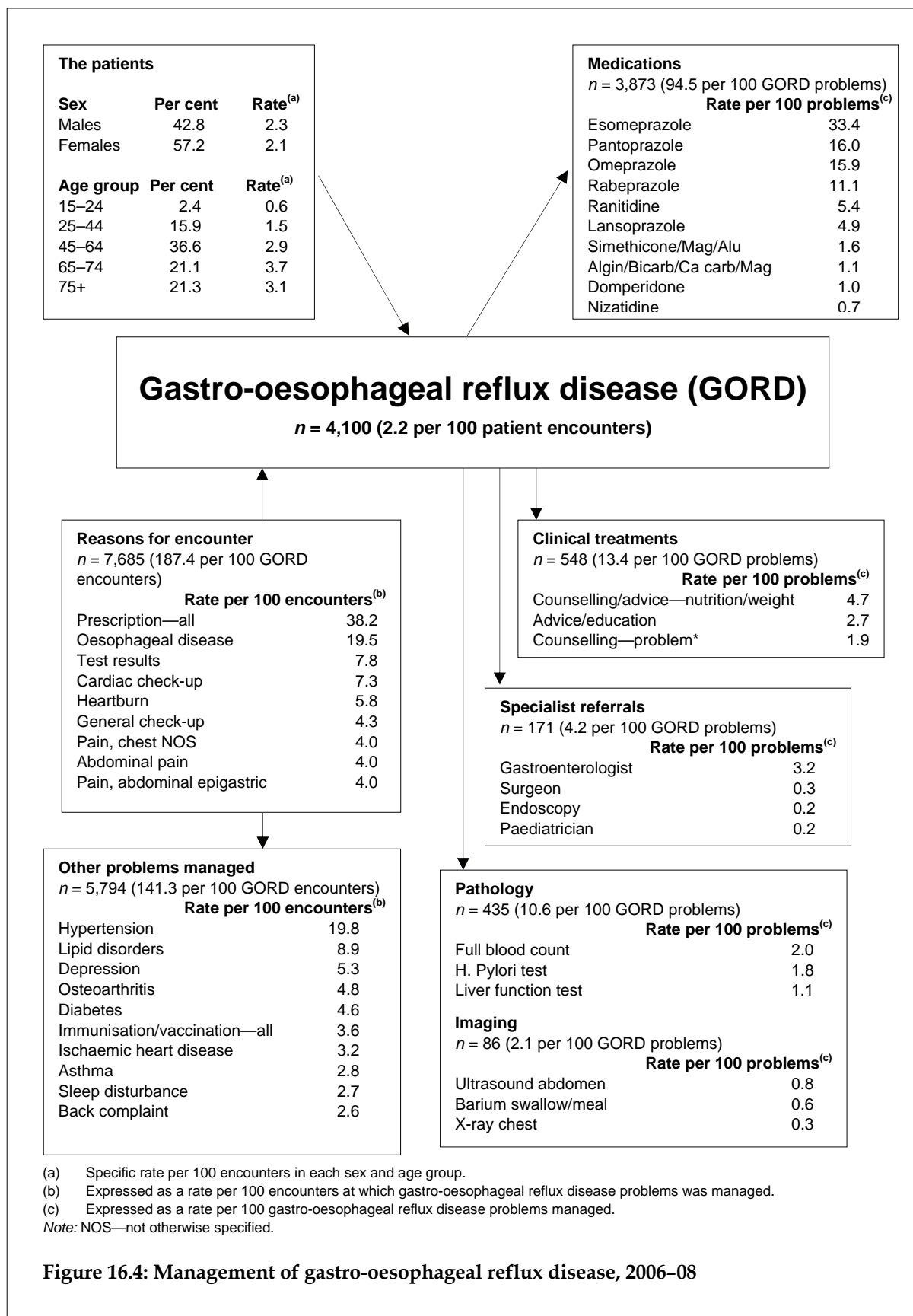
The pathology ordering rate of 10.6 (95% CI: 8.7–12.5) per 100 GORD problems was a third of the average for BEACH 30.3 (95% CI: 29.6–31.0). Full blood count was the most commonly ordered test, at a rate of 2.0 per 100 problems. Imaging ordering rates were also below average (2.1 per 100 GORD problems), the most common being ultrasound of the abdomen.

Medications

The rate of medications prescribed/supplied or advised was well above the BEACH average at 94.5 per 100 GORD problems managed. Esomeprazole was the medication most frequently prescribed, at a rate of 33.4 per 100 GORD problems managed. The proton pump inhibitors in the top 10 medications were together prescribed at a rate of 81.3 per 100 GORD problems, accounting for 87.3% of all medications prescribed for GORD.

Clinical treatments

The rate of other treatments provided, 13.4 per 100 of these problems, was significantly lower than the average for BEACH. Most commonly the treatment was Counselling/advice—nutrition/weight, provided at a rate of 4.7 per 100 GORD problems managed. Advice/education was provided for 2.7 per 100 GORD problems.



16.7 Discussion

There is wide variance in the estimates of prevalence of GORD in the community reported in the literature. In recent unpublished studies prevalence of up to 63% are estimated (personal communication Prof T D Bolin). The variation in prevalence between studies seems to be due mainly to differences in the definition of GORD used in the studies.² Higher prevalence occurs particularly in developed countries, and may be associated with the reduction in H. Pylori colonisation of the gastric mucosa associated with better hygiene and greater use of antibiotics.¹⁴ Within Australia, the lower prevalence estimated from GP encounter data¹ than that of community-based studies may indicate a significant level of unmet need for management of this condition in the Australian community. Therefore it may be expected that the management rate will continue to rise in the future.

GORD occurs commonly with other chronic problems, particularly with older patients.¹¹ As shown in Figure 16.4, conjoint management is quite common. The frequent occurrence of multimorbidity with GORD has significant implications for its management, and for the development of guidelines for best practice care in complex patients.

The Digestive Heart Foundation's *Gastro-oesophageal reflux disease in adults: guidelines for clinicians, 4th edition 2008* provides a guide to the investigation and management of GORD.¹⁵ United States guidelines for 'Initial management of dyspepsia and GERD'¹⁶, also provide a useful algorithm for management of GORD.

Both sets of guidelines suggest that it is inappropriate to undertake endoscopy on every patient with suspected GORD, and that this should only be carried out if alarm features are present. Australian GPs seem to be following this pattern of investigation since removal of the requirement to undertake endoscopy to confirm the presence of oesophagitis before prescribing proton pump inhibitors. The recent increase in Medicare-funded upper gastrointestinal endoscopy does not appear to be related to the investigation of GORD. The United States guidelines suggest that patients aged 50 years and older and with symptoms for 10 years or more should be considered for endoscopy. This may be an area in which a change in current management could be considered, given the increasing incidence of oesophageal cancer.^{17,18}

The Australian guideline does not mention testing for H. Pylori and the United States guideline suggests that it is not indicated. However, patients may present with a mixed picture of GORD and dyspepsia which may reasonably lead to H. Pylori testing. The H. Pylori test rate of 1.8 per 100 GORD problems is not an unexpected response to uncertainty over the diagnosis. Patients with new presentations of GORD were tested at a higher rate of 4.3 per 100 new cases of GORD. As these are encounter rates, the per patient rate would be much higher (see Chapter 2).

Both the Australian and United States guidelines suggest the superiority of proton pump inhibitors in a therapeutic trial to establish diagnosis and in long-term therapy. The shift from H2RAs and other medications to proton pump inhibitors is consistent with current guidelines for the management of GORD.

16.8 Conclusion

In common with other developed countries, the prevalence of GORD is increasing in Australia. This increase in prevalence may be due to decreasing gastric colonisation by *H. Pylori*; however, the increasing frequency of overweight and obesity in the community may also be a contributing factor.

GORD causes significant impairment of quality of life unless effectively treated, and the financial burden of treatment is high.

GORD is a chronic problem requiring long-term drug therapy or endoscopic interventions, which are only appropriate for a small minority of patients who are not controlled on acid suppression.^{15,16}

General practitioners appear to be managing almost all of the diagnosed instances of GORD; however, there appears to be a large pool of patients with probable GORD in the community not under current medical management.

General practitioner management of GORD appears consistent with both Australian and United States guidelines.^{15,16}

Suggested chapter citation

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