



The University of Sydney
at Westmead Hospital

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

A collaborating unit of the
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BEACH

BETTERING THE EVALUATION AND CARE OF HEALTH

SUMMARY MEDICATION REPORT for GP DIVISIONS

PPIs in general practice

Data period: April 01 – Mar 02



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Enquiries to: A/Professor Helena Britt (02) 9845 8150

A quick overview of peptic ulcers and Proton pump inhibitors from BEACH 2001-02

In this section two separate reports of GP activity are provided from the BEACH data 2001-02. The first is a summary of selected data pertaining to the relative rate of management and the GP management of peptic ulcers. The other presents selected data about Proton pump inhibitors (PPIs)

Peptic ulcers:

- were managed at a rate of 0.28 per 100 encounters, or 2.8 per 1,000 encounters.
- Extrapolated to the approximately 103 million GP-patient consultations across the country we estimate there were about 300,000 consultations that involved the management of peptic ulcer
- Medications were prescribed/advised/supplied at a rate of 82.6 per 100 contacts with peptic ulcer
- Exactly 50% of these medications were PPIs
- Extrapolated national estimate is therefore 123,900 occasions on which a GP prescribes PPIs for peptic ulcer.
- Remember when looking at the rate of prescription of triple therapy for peptic ulcer, that this rate is influenced by the one-off nature of triple therapy, compared with the continuing nature of PPI treatment.

PPIs

It is worth noting from the PPI report that:

- The National estimate of the annual number of PPI scripts from GP = 1.73 million
- Peptic ulcers accounted for only 7.2% of the problems for which PPIs were prescribed (see Table 3)
- Oesophageal disease accounted for 65% of the problems managed with PPIs.

More details in the Peptic Ulcer and PPI reports.

The details of the methods use in BEACH can be found in any of the AIHW general practice publications. These can be accessed through our web site: www.fmrc.org.au. You can click on the most recent annual report listed in the Publications page and this will link directly to the book. *Britt H, Miller GC, Knox S, Charles J, Lisa V, Henderson J, et al. 2002. General practice activity in Australia 2001-02. AIHW Cat. No. GEP 10. Canberra: Australian Institute of Health and Welfare (General Practice Series No. 10). ISBN 1 74024 217 3. ISSN 1442 3022*

Background

This report is a summary of the data collected from April 2001 to Mar 2002 inclusive. It provides information on the prescribing of PPIs

Total number of GPs participating in BEACH in this period: 983.

The total number of encounters for this period: 98,300

The participating GPs are randomly selected from the HIC list of active GPs (those who provided more than 375 GP services in the previous quarter). The research instrument used for each consultation is a single page recording form containing the following variables:

- date of encounter
- service item number/form of payment/indirect encounters (e.g. telephone consults)
- patient age and sex
- patient status to practice (new or seen before)
- health care card status of patient
- patient post code and ethnic background
- patient's reasons for encounter (up to three)
- diagnoses/problems managed (up to four)
- status of each problem to the patient (new/old)
- whether problems are work related
- medications prescribed (up to 4 per problem)
- over the counter medications recommended
- medications provided by the GP
- brand name, strength and regimen of medication
- number of repeats for medication
- medication status - new or continued
- other treatments (up to 2 per problem)
- tests and investigations ordered
- referrals and hospital admissions.

Summary medications – PPIs (ATC code: A02BC) Apr 01-Mar 02

Table 1 provides the overall prescription/supply rates of Proton Pump Inhibitor (PPIs). It includes a count of the total number of prescriptions for the selected medication during the time period and a breakdown of the number recorded by the GP as a generic name and the relative rate of prescription of each of the brand names for this generic. The prescribing rates are presented in terms of the rate per 100 BEACH encounters, the rate per 100 problems managed (all types) and the percentage of all medications that is accounted for by this medication and the percentage of all drugs in this class. The column titled “National Estimated encs” gives the estimated number of encounters in a year for Australian general practice, at which this drug is prescribed. It is calculated by multiplying the encounter rate by the number of consultations that are carried out in general practice each year about 105 million.

Results: PPIs were prescribed at a rate of 1.65 medication per 100 encounters and at a rate of 1.15 per 100 problems managed. They accounted for 1.58% of all medications prescribed for all problems. National estimates suggest a total of 1.73 million scripts/supplied medications in 2001-02 for PPIs. Omeprazole accounted for 58.1% of all the PPIs, followed by Pantoprazole (28.0%).

Table 1: Summary medications - PPIs

Drug label	n	Total per 100 encs	Total per 100 probs	Total % drugs	% PPIs	National estimated encs
Total PPIs	1598.9	1.65	1.15	1.58		1730000
Omeprazole	928.16	0.96	0.67	0.92	58.05	1010000
Pantoprazole	447.92	0.46	0.32	0.44	28.01	485000
Lansoprazole	175.26	0.18	0.13	0.17	10.96	189800
Rabeprazole	47.529	0.05	0.03	0.05	2.97	51500

Summary of database: services and patients – PPIs (ATC code: A02BC) Apr 01-Mar 02

Provides a summary of the encounters and the characteristics of the patients for whom the selected medication was prescribed/provided.

Number of observations (n), rate per 100 encounters, 95 per cent confidence interval (CI) are provided for each data point.

The confidence interval (CI) is calculated as the rate estimate \pm (1.96 x standard error). The CI is interpreted as “we are 95 per cent confident that the true population value lies between the lower and upper value”. NB: CIs may be missing where data were insufficient to calculate a meaningful estimate.

- ◆ **Encounters** define the different types of services provided by the participating GPs during the course of their recording period. Only encounters where the selected medication was prescribed are included.
 - ◆ **Indirect services** occur when the patient is not actually seen by the GP (eg. telephone) but a clinical service is provided
 - ◆ **Surgery consults** are patient encounters that take place in the GP’s surgery and are covered by Medicare consultation item numbers.
 - ◆ **Home visits** are consultations that take place in the patient’s home and are covered by a Medicare home visit item number.
 - ◆ **Hospital** encounters take place with a patient in a hospital setting, and payment is from a Medicare hospital item number.
 - ◆ **Nursing home** consultations are those services covered by the relevant Medicare nursing home item numbers.

- ◆ **Patients** describes the characteristics of the patients for whom the selected medication was prescribed at encounter
 - ◆ **Gender and age** distributions are provided. The age groupings correspond with significant trends in GP service consumption.
 - ◆ **HCC Yes:** are encounters with patients who hold a health care card (HCC).
 - ◆ **VA gold card** and **VA white card** are encounters with patients who hold a Veteran’s Affair card (the encounter may not necessarily be claimed through VA in the case of white card holders).
 - ◆ **NESB** are encounters with patients whose primary language spoken at home is not English.
 - ◆ **Aboriginal** patients are those who identify as being Aboriginal.
 - ◆ **Torres Strait Islander** patients are those who identify as being Torres Strait Islander.

Number of observations (n), rate per 100 encounters, rate per 100 problems, 95 per cent confidence intervals (CI) are provided for each data point.

- ◆ **Problems managed** are the problems managed at the encounter, for which the selected drug or drug group was prescribed/provided.
 - ◆ **New problems** are those that have never been managed before by any doctor, or are first consultations for a new episode of a recurrent problem.

- ◆ **Medications:** Provides the total count of the number of the selected medication prescribed/provided. This number will agree with that in Table 0.
 - ◆ **Prescribed**
 - ◆ **Provided**
 - ◆ **Advised**
 - provides a count of the proportion of the total selected medication that was prescribed by the GP and the proportion that were provided by the GP (e.g. samples) and (where applicable) the proportion that were advised for purchase over-the counter.

Table 2 shows that 684 of the 983 participating GPs prescribed or supplied at least one PPI during their 100 recorded encounters. PPIs were prescribed on 1,599 occasions.

Results: Nine out of ten encounters at which a PPI was prescribed/provided were conducted in the surgery. The patient receiving the PPI was male in 44.3% of cases (and this does not differ from the usual gender distribution in encounter data in Australia). Almost 40% of the patient receiving a PPI were aged between 45 and 64

years, though this age group only accounts for 26.3% of total GP encounters (i.e. they are over-represented in the PPI patient group). All other older age groups are also over represented but not to the same degree.

Health care card holders accounted for 60.3% of these encounters (compared with 41.9% of total encounters). They described more reasons for encounter than average. These two results would be related to their age distribution. One in four of the problems managed with PPIs were new to the patients (this is relatively low proportion reflecting the chronic nature of many problems for which PPIs prescribed). 85% of the PPIs were prescribed and 15% were supplied directly to the patient by the GP.

Table 2: Summary of data base: services and patients - PPIs

Data	n	Rate per 100 encs	Lower 95% CI	Upper 95% CI
General practitioners	684.82			
Encounters	1598.9			
- Indirect consults	43.895	2.96	0	14.9
- Surgery consults	1340.9	90.52	88.8	92.2
- Home visits	33.57	2.27	0	14.7
- Hospital	4.5026	0.3	0	60.6
- Nursing home	13.425	0.91	0	26.3
Patients	1598.9			
- Males	703.29	44.26	41.5	47
- Females	885.87	55.74	53.1	58.4
- Missing gender	9.6996			
- <1 year	0.9883	0.06	0	30
- 5-14 years	2.5975	0.16	0	36.5
- 15-24 years	52.198	3.29	0	15.4
- 25-44 years	296	18.65	14	23.3
- 45-64 years	609.22	38.39	35.5	41.3
- 65-74 years	317.6	20.01	16.4	23.6
- 75+ years	308.49	19.44	14.9	24
- Missing age	11.774			
- HCC Yes	887.15	60.33	57.2	63.5
- VA card	82.489	5.69	0	13.2
- NESB	151.42	9.47	0	22.1

- Aboriginal	11.074	0.76	0	28.8
- Torres Strait Islander	0.7358	0.05		
- Aboriginal & Torres Strait Is	1.7471	0.12	0	33.9
- New to practice	71.385	4.62	0	13.1
Reasons for encounter	2856.9	178.68	173.5	183.9
New problems	396.68	24.81	19.9	29.8
Medications	1598.9	100	100	100
- Prescribed	1369.7	85.67	83.6	87.7
- GP supplied	229.17	14.33	5	23.7

Most common problems managed with PPIs

Up to four problems managed at each encounter can be recorded. The problem label is the classified description of the label given by the GP for the problem being managed with the selected medication.

Table 3 presents the most frequent problems managed with the selected medication, in decreasing order of frequency. Data include: number of observations, per cent of GPs (Percentage base = total number of GPs for this time period) who prescribed/supplied the drug for that particular problem; the per cent of total problems managed with the selected medication, lower and upper confidence intervals for this per cent. The last numeric column gives you the proportion of all problems of this type that received a script/were supplied with the selected medication.

If there are asterisks in this Table they tell you that the problem label includes more than one ICPC-2 code. (For example: *Hypertension** includes both *uncomplicated hypertension* and *hypertension with complications*).

Results: Oesophageal disease accounted for the majority (65.3%) of the problems for which PPI medications were prescribed/supplied, followed by ‘stomach function disorder’ (which includes gastritis and motility etc) accounted for 7.4% . Peptic ulcers (other than duodenal) accounted for only 4.9 percent of these problems and duodenal ulcers a further 2.1%. Dyspepsia was the problem under management for 4.1% of the problems for which PPI medications were prescribed/supplied.

The far right hand column shows that almost 60% of GP contacts with oesophageal disease generated a script/supply of PPI whereas 38.6% of contacts with other peptic ulcers and 48.6% of contacts with duodenal ulcers resulted in a PPI script/supply (Table 3).

Table 3: Most common problems managed with PPIs

Problem label	n	% of GPs	% of PPIs problems	Lower 95% CI	Upper 95% CI	% of problem
Oesophagus disease	1044.	54.73	65.33	62.4	68.3	59.57
Stomach function disorder	117.6	8.04	7.36	0	16.5	28.3
Peptic ulcers, other	78.97	7.22	4.94	0	15.8	38.64
Dyspepsia/indigestion	65.63	4.27	4.1	0	19.9	32.75
Hiatus hernia	34.43	3.05	2.15	0	14.9	51.27
Duodenal ulcer	33.49	2.85	2.1	0	14.6	48.64
Pain, abdominal epigastric	22.50	1.93	1.41	0	20.5	30.5
Abdominal pain*	18.48	1.83	1.16	0	21.8	3.2

PPI Source and status

- ◆ **Source:** For the selected medication for each problem managed with that medication, this shows the number and proportion of the medication that was prescribed by the GP, the proportion advised for over-the-counter purchase and the proportion supplied by the GP (as samples etc). This is of greatest interest where the selected medication can be either prescribed or advised (e.g. paracetamol).
- ◆ **Status:** The last two columns of this Table show the number of cases where the medication was designated a new drug for this problem in this patient, and the percent of this medication –problem combination that this number represents (percentage base = the number in the corresponding row, in column 1)

Results: We know from Table 2 that 85.7% of PPIs were prescribed and the balance were supplied directly by the GP to the patient. Table 4 shows that while only 10.7% of PPIs for oesophageal disease for supplied direct to the patient (89.3% prescribed), 33.7% of those given for dyspepsia were directly supplied by the GP. Almost ¾ of the PPIs given for oesophageal disease were continuations of previous medications for this problem and 10.7% were new medications for this problem in this patient.

Table 4: PPIs medications - source and status

Problem managed	Prescribed n	% of problem	Advised n	% of problem	GP		New n	% of problem	Continued n	% of problem
					supplied n	% of problem				
Oesophagus disease	932.63	89.3			111.97	10.7	284	27.5	750	72.5
Stomach function disorder	83.307	70.8			34.323	29.2	41	41.8	57	58.2
Peptic ulcers, other	62.7	79.4			16.278	20.6	35	46.1	41	53.9
Prescription all*	59.925	92.5			4.8924	7.5	3	4.4	65	95.6
Dyspepsia/indigestion	43.537	66.3			22.094	33.7	21	38.9	33	61.1
Duodenal ulcer	31.221	93.2			2.2761	6.8	5	17.2	24	82.8
Hiatus hernia	29.513	85.7			4.9176	14.3	13	37.1	22	62.9
Pain, abdominal epigastric	17.861	79.4			4.6443	20.6	8	40	12	60
Abdominal pain*	14.125	76.4			4.3572	23.6	5	27.8	13	72.2
Heartburn	8.1194	100					2	28.6	5	71.4

Average prescribed daily dose (PDD) for the more common problem managed with PPIs (ATC code: A02BC) Apr 01-Mar 02

For each problem managed with the selected medication this table provides the mean PDD, the Median PDD, the minimum PDD and maximum PDD recorded by the GPs. The mean, median etc for all prescriptions of the selected medication is provided in the last row of the table. Note that the median is often a more reliable measure of central tendency than the mean, which is influenced by outliers.

Note “Average prescribed daily dose” includes prescribed, supplied and advised medications.

Table 5: Average prescribed daily dose - PPIs

Problem label	n	Mean	Median		Minimum	Measure	Maximum	Measure	
		PDD	Measure	PDD					Measure
Oesophagus disease	936	30.0	mg	20	mg	10	mg	120	mg
Stomach function disorder	90	29.6	mg	20	mg	20	mg	80	mg
Peptic ulcers, other	71	29.3	mg	20	mg	20	mg	80	mg
Prescription all*	61	26.9	mg	20	mg	10	mg	80	mg
Dyspepsia/indigestion	45	32.1	mg	40	mg	20	mg	40	mg
Hiatus hernia	32	35.7	mg	40	mg	20	mg	80	mg
Duodenal ulcer	26	32.0	mg	30	mg	20	mg	80	mg
Pain, abdominal epigastric	17	31.6	mg	20	mg	20	mg	80	mg
Abdominal pain*	15	30.1	mg	20	mg	20	mg	60	mg
Gastroenteritis, presumed infection	9	40.0	mg	40	mg	40	mg	40	mg

Average number of repeats for PPIs for the more common problems managed with PPIs (ATC code: A02BC) Apr 01-Mar 02

For each problem managed with the selected medication this Table provides the mean number of repeats, the median number of repeats, the minimum and maximum number of repeats. Again note that the median is often a more reliable measure of central tendency than the average which is influenced by outliers.

Table 6.: Average number of repeats - PPIs

Problem label	n	Mean	Median	Minimum	Maximum
		repeats	repeats		
Oesophagus disease	828	3.9	5.0	0	6
Stomach function disorder	65	1.9	1.0	0	5
Prescription all*	60	4.7	5.0	1	5
Peptic ulcers, other	59	3.2	5.0	0	5

Dyspepsia/indigestion	42	2.6	3.0	0	5
Hiatus hernia	22	4.7	5.0	1	5
Duodenal ulcer	21	3.8	5.0	0	5
Pain, abdominal epigastric	14	2.9	3.0	0	5
Abdominal pain*	13	2.5	1.0	0	5
Gastroenteritis, presumed infection	9	0.6	0.0	0	5

Prescribed daily dose (PDD) by generic– PPIs (ATC code: A02BC) Apr 01-Mar 02

Table 7 provides the mean PDD, the Median PDD, the minimum PDD and maximum PDD by generic level. The last column is the number of medications used for the problem managed for the first time. The mean, median etc for all prescriptions of the selected medication is provided in the last row of the table. Note that the median is often a more reliable measure of central tendency than the mean, which is influenced by outliers.

Note “Prescribed daily dose” includes prescribed medications only.

Table 7: Prescribed daily dose - PPIs

Drug	n	Mean	Median		Min	mg	Max	mg	New	
		PDD	mg	PDD						mg
Omeprazole	750	24.6	mg	20	mg	10	mg	80	mg	184
Pantoprazole	324	42.8	mg	40	mg	10	mg	120	mg	131
Lansoprazole	122	36	mg	30	mg	15	mg	90	mg	20
Rabeprazole	24	21.7	mg	20	mg	20	mg	40	mg	14
Total	1220	30.5	mg	20	mg	10	mg	120	mg	349