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A collaborating unit of the
Australian Institute of Health and Welfare



BEACH

BETTERING THE EVALUATION AND CARE OF HEALTH

SUMMARY MEDICATION REPORT for GP DIVISIONS

Statins in general practice

Data period: April 01 – Mar 02



February 2003

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The details of the methods used 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. . The latest BEACH report is *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 represents a brief summary of the data collected from April 2001 to Mar 2002 inclusive. It provides information on the prescribing of Statins
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 – Statins (ATC code: C10AA) Apr 01-Mar 02

Table 1 provides the overall prescription/supply rate of statins. 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 for each generic within this medication group. 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: Statins were prescribed at a rate of 2.46 medications per 100 encounters and at a rate of 1.72 per 100 problems managed. They accounted for 2.36% of all medications prescribed for all problems. National estimates suggest a total of 2.59 million scripts/supplied medications in 2001-02 for statins.

Simvastatin accounted for 40% of all the statins, followed by Pravastatin (14.4%).

Table 1: Summary medications - Statins

Drug label	n	Total per 100 encs	Total per 100 probs	Total % drugs	% Statins	National estimated encs
Total Statins	2390.3	2.46	1.72	2.36		2590000
Simvastatin	952.72	0.98	0.68	0.94	39.86	1030000
Pravastatin	343.97	0.35	0.25	0.34	14.39	372400
Fluvastatin	17.78	0.02	0.01	0.02	0.74	19300
Atorvastatin	1051.4	1.08	0.76	1.04	43.98	1140000
Cerivastatin	24.477	0.03	0.02	0.02	1.02	26500

Summary of database: services and patients – statins (ATC code: C10AA) Apr 01-Mar 02

Table 2 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 Affairs 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 776 of the 983 participating GPs prescribed or supplied at least one statin during their 100 recorded encounters. A statin was prescribed on 2,387 occasions.

Results: Ninety four percent of encounters at which a statin was prescribed/provided were conducted in the surgery. The patient receiving the statin was more likely to be male (50.8%, 95% CI 48.3-53.3) when compared with the usual gender distribution in encounter data in Australia (42.6, 95% CI 41.43.3). 95% of the patients at encounters generating a Statin script were over 45 years, 42% being 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 statin group). All other older age groups are also over represented but not to the same degree.

Health care cardholders were also over-represented in this Statin sample, accounting for 62.3% of these encounters (compared with 41.9% of total encounters). Patients receiving a statin at the encounter described more reasons for encounter than average. These two results would be related to their age distribution.

Very few of these patients were new patients to the practice. Only 7.5% of the problems managed with a statin were new problems to the patients. Ninety five percent of the statins were prescribed and 5% were supplied by the GP direct to the patient (Table 2).

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

Data	n	Rate per 100 encls	Lower 95% CI	Upper 95% CI
General practitioners	775.52			
Encounters	2386.5			
- Indirect consults	42.513	1.92	0	10.7
- Surgery consults	2082.8	94.0	93.1	94.9
- Home visits	17.072	0.77	0	9.3
- Hospital	0.8202	0.04		
- Nursing home	7.4614	0.34	0	118.5
- Worker's comp	10.426	0.47	0	18.3
- Other paid	18.59	0.84	0	29.2
- No charge	2.9041	0.13	0	28.9
- Other Medicare items	33.115	1.49	0	14.6
- Missing	170.76			
Patients	2386.5			
- Males	1199.9	50.77	48.3	53.3
- Females	1163.3	49.23	46.9	51.6
- Missing gender	23.221			
- 5-14 years	1.4365	0.06	0	59.4
- 15-24 years	2.3871	0.1	0	27.5
- 25-44 years	124.66	5.27	0.2	10.3
- 45-64 years	998.27	42.16	39.5	44.8
- 65-74 years	775.26	32.74	30.2	35.3
- 75+ years	465.65	19.67	16.4	22.9
- Missing age	18.799			
- HCC Yes	1377.9	62.33	59.5	65.1
- VA card	109.41	5.04	0.1	10
- NESB	302.45	12.67	1.2	24.2
- Aboriginal	18.523	0.85	0	31.5
- Torres Strait Islander	2.2622	0.1		
- Aboriginal & Torres Strait Is	0.7555	0.03		
- New to practice	47.067	2.08	0	10.6

Reasons for encounter	4438.4	185.98	180.7	191.3
Problems managed	2388.3			
- New problems	179.04	7.5	3.2	11.8
Medications	2390.3	100.09	100	100.2
- Prescribed	2263.6	94.78	93.8	95.8
- GP supplied	126.75	5.31	0	16

Most common problems managed with statins (ATC code: C10AA) April 2001-March 2002

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: “Lipid disorder” was the most common problem for which statins were prescribed/supplied (75.2%) and the remaining 25% of morbidity managed with statins included a very broad range of problems with low relative frequency rates of specific conditions. IHD accounted for 5.7% of the problems for which statins were prescribed/supplied, hypertension 4.2% and diabetes 1.3%.

The far right hand column shows that 63% of GP contacts with the problem ‘lipid disorder’ generated a script/supply of a statin whereas only 11.18% of contacts with ischaemic heart disease and 1.14% of contacts with hypertension resulted in a statin script/supply (Table 3).

Table 3: Most common problems managed with Statins

Problem label	n	% of GPs	% of Statins problems	Lower 95% CI	Upper 95% CI	% of problem
Lipid disorder	1794.8	68.67	75.15	72.7	77.6	63.17
Prescription all*	160.1	11.8	6.7	0	14.7	8.87
Ischaemic Heart Disease*	136.34	10.48	5.71	0	12.1	11.18
Hypertension*	99.292	8.24	4.16	0	10.8	1.14
Blood test endocrine/metabolic	32.165	2.64	1.35	0	17.2	14.24
Diabetes*	31.152	2.95	1.3	0	14	1.04
Test results*	14.556	1.32	0.61	0	25.4	1.42
Atrial fibrillation/flutter	10.053	0.81	0.42	0	20.9	1.54
Cardiac check-up*	9.5767	1.22	0.4	0	22.2	0.88
General check-up*	7.2981	0.71	0.31	0	27.2	0.42
Endocrinology check-up*	6.1165	0.41	0.26	0	32.5	4.61
Other reason for encounter NEC NOS	5.503	0.41	0.23	0	26.7	2.13
Stroke/cerebrovascular accident	5.2156	0.51	0.22	0	25.1	2.86
Atherosclerosis/peripheral vascular disease	4.8051	0.81	0.2	0	29	2.36
Transient cerebral ischaemia	4.4305	0.41	0.19	0	19.7	2.4
Acute myocardial infarction	3.968	0.51	0.17	0	20.6	9.14
Heart failure	3.9032	0.41	0.16	0	38.3	0.56
Total problems	2388.3		100	100	100	

Statins (ATC code: C10AA) –Source and status April 2001-March 2002

- ◆ **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 95% of statins were prescribed and the balance were supplied directly by the GP to the patient. Table 4 shows that there appeared no relationship between those statins supplied directly to the GP and the problem that was being managed. Almost all the statins were provided as part of continued therapy. .

New problems being managed with statins were more commonly labelled as ‘lipid disorder’ or ‘test result’ (Table 4).

Table 4: Statins medications - source and status for the more common problems managed with statins

Problem managed	Prescribed		Advised		GP supplied		New		Continued	
	n	% of problem	n	% of problem	n	% of problem	n	% of problem	n	% of problem
Lipid disorder	1708.3	95.1			88.577	4.9	. 229	13.2	1500	86.8
Prescription all*	153.04	95.6			7.0568	4.4	. 1	0.7	152	99.3
Ischaemic Heart Disease*	128.14	94			8.1969	6	. 13	8.9	133	91.1
Hypertension*	92.677	93.3			6.6155	6.7	. 3	2.9	101	97.1
Blood test endocrine/metabolic	29.55	91.9			2.6153	8.1	. 6	18.2	27	81.8
Diabetes*	28.689	92.1			2.4625	7.9	. 4	12.5	28	87.5
Test results*	13.491	92.7			1.0649	7.3	. 4	28.6	10	71.4
	=====		=====		=====		===		=====	
	2263.6		0		126.75		284		2059	

Average prescribed daily dose (PDD) for the more common problems managed with statins (ATC code: C10AA) 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 prescribed/supplied statins 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 and supplied medications.

Table 5: Average prescribed daily dose (PDD) for the more common problem managed with statins Apr 01-Mar 02

Problem label	n	PDD	Measure	PDD	Measure	Minimum	Measure	Maximum	Measure
Lipid disorder	1574	23.5	mg	20	mg	0.20	mg	120	mg
Prescription all*	129	20.9	mg	20	mg	0.30	mg	80	mg
Ischaemic Heart Disease*	125	26.6	mg	20	mg	0.30	mg	80	mg
Hypertension*	90	21.8	mg	20	mg	5.00	mg	40	mg
Blood test endocrine/metabolic	30	25.3	mg	20	mg	0.40	mg	80	mg
Diabetes*	26	24.4	mg	20	mg	0.05	mg	80	mg
Test results*	14	19.5	mg	15	mg	0.40	mg	80	mg
Cardiac check-up*	11	17.7	mg	20	mg	0.40	mg	40	mg
Atherosclerosis/peripheral vascular disease	8	33.1	mg	30	mg	0.60	mg	80	mg
Atrial fibrillation/flutter	7	17.6	mg	20	mg	10.00	mg	20	mg
General check-up*	6	11.8	mg	10	mg	10.00	mg	40	mg

Average number of repeats for statins for the more common problems managed with statins (ATC code: C10AA) 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 - Statins

Problem label	n	Mean repeats	Median repeats	Minimum	Maximum
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Lipid disorder	1370	4.4	5.0	0	5
Prescription all*	131	4.4	5.0	1	5
Ischaemic Heart Disease*	117	4.4	5.0	0	5
Hypertension*	76	4.4	5.0	0	5
Blood test endocrine/metabolic	29	4.6	5.0	2	5
Diabetes*	25	4.7	5.0	1	5
Cardiac check-up*	12	4.6	5.0	2	5
Test results*	12	3.7	5.0	0	5
Atrial fibrillation/flutter	7	3.5	5.0	1	5
General check-up*	6	4.9	5.0	2	5

Prescribed daily dose (PDD) by generic– statins (ATC code: C10AA) 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 - Statins

Drug	n	Mean		Median		Min	mg	Max	mg	New
		PDD	mg	PDD	mg					
Simvastatin	823	23.8	mg	20	mg	5	mg	120	mg	80
Pravastatin	274	25.9	mg	20	mg	2	mg	120	mg	45
Fluvastatin	16	36.3	mg	40	mg	20	mg	80	mg	1
Atorvastatin	851	22.2	mg	20	mg	5	mg	80	mg	108
Cerivastatin	24	0.4	mg	0.3	mg	0.05	mg	1.2	mg	5
Total	1988	23.2	mg	20	mg	0.05	mg	120	mg	239