

GP visits by health care card holders

A secondary analysis of data from Bettering the Evaluation and Care of Health (BEACH), a national study of general practice activity in Australia

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BACKGROUND Patients of low socioeconomic status are more likely to hold a commonwealth government health care card. Card holders are recipients of age, disability, unemployment or other low income pensions.

OBJECTIVE To compare the general practice managed morbidity of health care card holders with noncard holders.

METHOD Data from one year of the continuous Australian national survey of general practice activity (comprising 98 000 encounters from 980 general practitioners) were used to compare patient and encounter characteristics and the problems managed for health care card holders and noncard holders. Logistic regression adjusted for patient confounders (age and sex, practice size, comorbidity and measured social factors) to describe morbidity associated with health care card status.

RESULTS Health care card holders were more likely to have respiratory, circulatory, musculoskeletal, psychological, neurological, endocrine, digestive, urinary and social problems managed. They were more likely to have chronic and psychosocial problems managed and to receive prescriptions. Female card holders were less likely to have a genital check up (including Pap smear).

CONCLUSION This analysis supports a relationship between socioeconomic status and health. Those from a low socioeconomic status (health care card holders) experience worse psychosocial health and more chronic health problems, have more medications prescribed and receive less preventive care.

Sociodemographics may influence the type of morbidity which patients present to general practitioners and the treatments they receive. These include age and sex of patient,¹ family background and socioeconomic status (SES).²⁻⁶ The link between state of health, use of health services and SES is complex.^{3,4,7-10}

In Australia, adults with low income have higher rates of arthritis, asthma, hypertension, bronchitis/emphysema and ulcers, but a lower rate of cholesterol

problems, dermatitis and hayfever, are less likely to make use of preventive services, (in particular Pap smears and immunisation) and visit the doctor more often.²

A proxy for socioeconomic status is entitlement to a commonwealth government health care card (HCC), which allows the holder prescription medicines for themselves and their dependants at greatly reduced cost, free after a cost threshold is reached. The cards form part

of a package of benefits such as educational, recreational and transport concessions provided by federal and state governments to people on limited incomes (the unemployed, aged pensioners and recipients of special benefits or allowances).¹¹ In 1998, government health care cards were held by one-third of the 14 million Australians aged 15 years and over.¹² We wondered whether health care card status influenced morbidity managed in general practice, and if so, how.

Method

We analysed the 1998–1999 data from the Bettering the Evaluation and Care of Health (BEACH) program, a continuous national cross sectional survey of general practice. Approximately 1000 GPs participate every year, each providing details (on structured encounter forms) of approximately 100 consecutive patient encounters.¹³ Data included GP and patient characteristics (including whether or not the patient held a commonwealth government health care card), problems managed and treatments provided. We examined 98 000 encounters from 980 GPs. Health care card status was recorded for 88 331 encounters. Morbidity managed at encounters with card holders (excluding those with a Department of Veterans' Affairs card only) and noncard holders was compared in terms of chapter (one of the 17 main divisions, which mainly represent body systems of the International Classification of Primary Care, ICPC-2), and in terms of the most common individual problems.¹⁴

We compared age specific rates of health care card holders in BEACH with those in the Australian Bureau of Statistics (ABS) population survey to assess the extent to which BEACH represents all health care card holders in the population.¹²

Statistical analysis

We used SAS^{®15} to describe comparative rates of problems per 100 encounters and STATA^{®16} for the logistic regression with HCC status as the outcome. The model controlled for the confounding influence of patient age and sex (evident from the descriptive analyses) and for related social factors, practice size and the cluster effect of the GP. Socioeconomic status, defined using SEIFA index,¹⁷ was not included in the model because collinearity with health care card status could overwhelm other relationships that may exist. Adjusted odds ratios (health care card

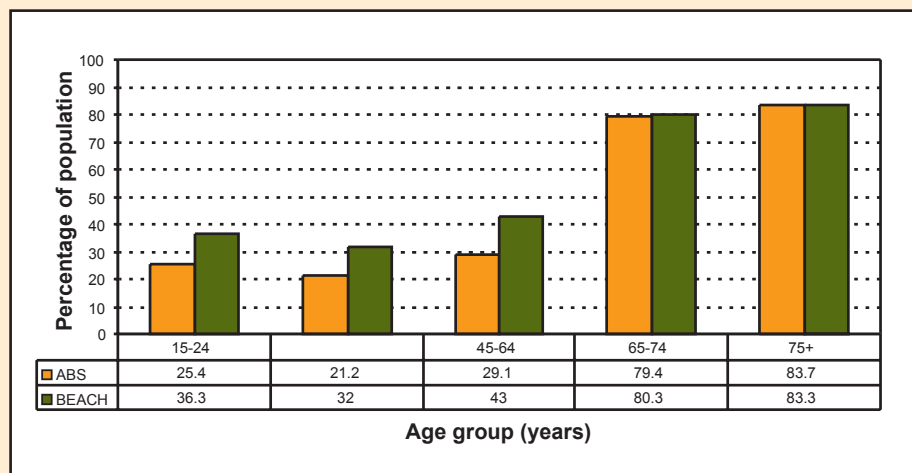


Figure 1. Age specific rate of HCC holders in the Australian population and at BEACH encounters

No: Yes) and 95% confidence intervals were calculated with nonhealth care card holders as the reference group.

Results

Comparison of two data sources – BEACH and ABS

Of all encounters with patients aged 15–24 years, 36% were with health care card holders. The percentage was slightly lower in the 25–44 years age group, but then increased with age to peak at 83% for those over 75 years of age. Data from the 1998 ABS survey showed a similar pattern, although there was a lower proportion of health care card holders from 15–64 years of age in the ABS survey, suggesting a higher GP visiting rate among health care card holders in this age group. This was particularly evident in the 45–64 age group where 29% of the Australian population were health care card holders compared to 43% of the patients seen by GPs in BEACH (Figure 1).

Patient and service characteristics

Health care card holders were more likely to be female, older and of lower socioeconomic status than nonhealth care card holders. They received home visits more often and were less likely to be new patients to the practice. They came to the GP with more reasons for encounter and

had more problems managed. They were prescribed more medications per encounter than their noncard holding counterparts (Table 1). All listed differences were significant.

Morbidity managed

Respiratory, circulatory, musculoskeletal, psychological, endocrine, digestive, neurological, urinary and social problems were all managed significantly more often for card holders, with psychological problems managed at almost double the rate of noncard holders. Female and male genital problems were significantly less likely to be managed for card holders than for noncard holders (Table 2).

More specifically, hypertension, diabetes, osteoarthritis, heart failure and chronic obstructive pulmonary disease were among the problems managed more often for card holders, as were depression, sleep disturbance and anxiety. However, sprains and strains, and female genital check up (eg. Pap smears) were managed less frequently for health care card holders.

After adjusting for patient age and sex, size of practice, measured social factors and significant comorbidity, health care card holders remained significantly more likely than noncard holders to have problems managed that were of a

Table 1. Significant differences in patient and services characteristics for health care card and nonhealth care card holders

	Health care card holders (n=41 748)	Nonhealth care card holders (n=46 583)
	Percent (95% CI)	Percent (95% CI)
Patient characteristics		
Male	39.6 (38.8–40.5)	43.8 (42.9–44.7)
Mean age	51.2 (50.1–52.3)	35.6 (35.1–36.2)
New to practice	7.0 (6.3–7.8)	11.1 (10.4–11.9)
Low SES*	32.7 (29.0–36.4)	20.5 (17.8–23.2)
Service characteristics		
Medicare claimable	93.4 (92.5–94.3)	88.9 (87.7–90.1)
Home visits	2.8 (1.9–3.8)	0.7 (0.0–1.8)
Workers' compensation	0.5 (0.0–1.0)	2.9 (2.4–3.3)
Encounter characteristics	Rate per 100 encounters	Rate per 100 encounters
Reasons per encounter	151.5 (149.5–153.7)	141.7 (140.0–143.4)
Problems managed	154.3 (151.8–156.7)	136.5 (134.8–138.1)
New problems	49.5 (47.7–51.3)	61.2 (59.6–62.8)
Medications prescribed	109.2 (106.0–112.4)	78.4 (76.2–80.5)

*SEIFA index quantiles 1, 2, 3

Table 2. Significant differences in problems managed grouped by ICPC chapter for health care card and nonhealth care card holders*

ICPC chapter	Descriptive analysis		Multivariate analysis
	Rate per 100 encounters**		Adjusted odds ratio
	HCC†	NonHCC	No: Yes
	(95% CI)	(95% CI)	(95% CI)
	(n=41 748)	(n=46 583)	
Respiratory	23.6 (22.7–24.6)	25.0 (24.2–25.9)	1.12 (1.06–1.19)
Circulatory	22.1 (21.0–23.1)	10.2 (9.6–10.7)	1.25 (1.17–1.33)
Musculoskeletal	18.6 (17.8–19.3)	15.3 (14.5–16.0)	1.23 (1.16–1.30)
Psychological	13.5 (12.8–14.2)	7.5 (7.1–7.9)	2.18 (2.02–2.37)
Endocrine and metabolic	10.8 (10.2–11.4)	7.0 (6.5–7.5)	1.22 (1.13–1.33)
Digestive	10.5 (10.0–10.9)	10.0 (9.7–10.4)	1.13 (1.06–1.21)
Female genital	5.0 (4.7–5.4)	7.5 (7.0–8.0)	0.84 (0.77–0.91)
Neurological	4.6 (4.3–4.9)	3.5 (3.3–3.7)	1.48 (1.34–1.63)
Urinary	3.3 (3.0–3.5)	2.5 (2.3–2.6)	1.19 (1.06–1.33)
Male genital	1.3 (1.1–1.5)	1.4 (1.1–1.7)	0.84 (0.71–0.98)
Social	0.9 (0.5–1.2)	0.7 (0.3–1.0)	1.58 (1.30–1.93)

* Morbidity was included as % of encounters at which an ICPC chapter or individual problem was managed at least once

** Number of problems in this chapter divided by total encounters x 100

† Health care card holders

psychological or social nature, or associated with the respiratory, circulatory, musculoskeletal, endocrine, digestive or neurological systems (Table 2). The difference was particularly apparent in the rate of psychological problems (OR: 2.18). Card holders were significantly less likely to have problems relating to the male and female genital systems managed.

In terms of the top individual problems, after adjustment, card holders were significantly more likely than noncard holders to have chronic problems such as hypertension, ischaemic heart disease, heart failure and diabetes; chronic obstructive pulmonary disease, asthma and oesophageal disease; osteoarthritis, arthritis and back complaint managed at the encounter. They were also more likely to have psychological problems such as sleep disturbance, depression and anxiety, as well as headache (including migraine) managed. Female card holders were significantly less likely to have a genital check up managed (Table 3).

Discussion

We have confirmed that health care card holders have more psychological problems, more chronic disease and relatively fewer Pap smears managed in general practice. Although these differences remained after adjustment for all confounding factors for which we had data, differences may be due to some other unmeasured variable.

The over-representation of encounters with the 15–64 years age group confirmed that many people on low incomes (although not the elderly) visit the GP more often.² We also found higher rates of hypertension, asthma and arthritis² among health care card holders, but no difference in the management rates of minor illness between card holders and noncard holders.

The list of common problems managed at significantly higher levels for card holders paints a picture of more serious

Table 3. Differences in problems managed for health care card and nonhealth care card holders

ICPC rubric	Descriptive analysis		Multivariate analysis
	Rate per 100 encounters**		Adjusted odds ratio
	(95% CI)		(95%CI)
	HCC†	Non-HCC	No: Yes
	(n=41 748)	(n=46 583)	
Hypertension*	11.4 (10.7–12.0)	5.4 (5.1–5.8)	1.20 (1.11–1.29)
Depression*	4.2 (3.8–4.5)	2.9 (2.6–3.1)	1.80 (1.61–2.00)
Diabetes*	3.9 (3.5–4.2)	1.3 (1.1–1.6)	1.77 (1.55–2.02)
Osteoarthritis*	3.3 (3.0–3.7)	1.1 (0.9–1.4)	1.67 (1.46–1.90)
Asthma	3.3 (2.9–3.6)	3.1 (2.8–3.3)	1.28 (1.14–1.44)
Back complaint*	2.9 (2.6–3.2)	2.4 (1.9–3.0)	1.37 (1.21–1.54)
Sleep disturbance	2.4 (2.0–2.7)	0.9 (0.5–1.2)	1.74 (1.47–2.05)
Ischaemic heart disease*	2.4 (2.0–2.7)	0.7 (0.3–1.0)	1.39 (1.15–1.66)
Anxiety*	2.1 (1.8–2.4)	1.3 (1.0–1.5)	1.60 (1.37–1.86)
Oesophageal disease	1.9 (1.6–2.1)	1.1 (0.8–1.3)	1.39 (1.19–1.62)
Sprain/strain*	1.4 (0.8–1.9)	2.3 (1.9–2.7)	0.82 (0.69–0.97)
Female genital check*	1.0 (0.6–1.4)	2.2 (1.8–2.6)	0.60 (0.52–0.70)
Headache/migraine*	1.7 (1.4–2.0)	1.8 (1.5–2.0)	1.26 (1.09–1.46)
Prescription all*	1.8 (1.1–2.5)	1.0 (0.5–1.4)	1.40 (1.15–1.70)
Arthritis*	1.1 (0.6–1.5)	0.5 (0.0–0.9)	1.34 (1.03–1.73)
Heart failure	1.4 (1.1–1.8)	0.3 (0.0–0.8)	1.51 (1.13–2.02)
COPD	1.3 (0.9–1.6)	0.3 (0.0–0.8)	2.05 (1.51–2.78)

* Made up of multiple ICPC rubrics

** Number of problems in this ICPC rubric divided by total encounters x 100

† Health care card holders

illness being dealt with by GPs for this section of the community, with higher rates of ischaemic heart disease, heart failure, diabetes, chronic obstructive pulmonary disease and oesophageal disease. The high rates of psychological problems (sleep disturbance, depression and anxiety) managed for card holders is notable, and because the multivariate model is adjusted for comorbidity, the influence of coexisting disease is not reflected. The relatively high use of medical services can be better understood in the context of card holders' greater physical and psychological illness.

Card holders' health could be supported more vigorously. The government

could address the high level of psychological problems as part of its mental health policy. General practitioner awareness of the higher likelihood of psychological problems and need for preventive care for health care card holders may be helpful.

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Conflict of interest: This article was researched, analysed and written as an

independent analysis of data from Bettering the Evaluation and Care of Health (BEACH) study. There was no conflict of interest for the authors in the preparation of this article.

Implications of this study for general practice

- Health care card holders have more psychological and other serious problems managed.
- They have more problems managed per encounter.
- Female card holders are less likely to have a genital check up (including Pap smear).

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