Determinants of GP billing in Australia: content and time

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ABSTRACT

Objective: To examine relations between consultation length and content, and general practitioner choice of claiming level B or C when billing consultations > 20 minutes through Medicare.

Design and setting: A secondary analysis from a cross-sectional national general practice survey (1 April 2000 to 31 March 2003) of 101 112 consultations with 2811 GPs, comparing level B consultations ⩽ 20 minutes with consultations > 20 minutes (claimed as level B or C), and consultations > 20 minutes claimed as level C with those claimed as level B.

Main outcome measures: Consultation length, encounter, patient characteristics; number, type of problems managed; type and frequency of treatments provided in relation to consultation level charged.

Results: There were 80 476 level B consultations ⩽ 20 minutes and 14 893 > 20 minutes claimed as level B or C (5725 [38.4%] level B; 9168 [61.5%] level C). Longer level B+C consultations differed from shorter level B consultations in patient sex, Department of Veterans' Affairs card status, and new-patient status, and involved more reasons for encounter, problems managed, chronic problems, clinical treatments, therapeutic procedures, referrals and pathology and imaging orders. Longer consultations claimed as level C were significantly longer (0.9 minutes) than those claimed as level B and involved more reasons for encounter, problems managed (particularly new, chronic, psychosocial and gynaecological) and more clinical treatments.

Conclusions: Patient characteristics and consultation content differ at longer consultations. Consultations charged as level C are more complex than those charged as level B. GPs use both time and content when choosing item number, rather than relying only on specified time thresholds. This has implications for future restructuring of MBS attendance items.

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In 1989, the Medicare Benefits Schedule (MBS) for general practice A1 attendances in Australia changed, and content-based consultation descriptors were introduced with four levels of consultation (Box 1).[1] Level A and level B consultations are distinguished only by content, regardless of how much time is spent with the patient. However, level C and level D consultation descriptors have both minimum time and content requirements.[2]

If content requirements are met but the consultation is shorter than the specified time (level C ⩾ 20 minutes; level D ⩾ 40 minutes), or if time requirements are met but not content, then the item can only be reimbursed by Medicare at the lower rate.[3] General practitioners may "down-code" (eg, claim level B for a consultation of 30 minutes) on the basis of content, but cannot "up-code" (eg, claim level C for an 18-minute consultation) on the basis of content.

There has been little research into GPs' application of this complex system. One study reported the application of content descriptors by having GPs observe and rate videotapes of GP consultations.[4] Others looked at the qualitative content of consultations, but did not consider the application of the MBS descriptors.[5,6] There have been no studies of GPs' consideration of time and content when deciding which Medicare item number to allocate to a consultation.

The current Medicare descriptors make it clear that GPs must consider both time and content in choosing an item number. However, in 2003, the Attendance Item Restructure Working Group, which consisted of members from GP organisations and the Department of Health and Ageing (DoHA), reviewed the A1 Medicare attendance items. Although the GP organisations preferred to retain a mixture of content and time in descriptors, the DoHA preferred a seven-tier item structure based on time alone.[7]

If GPs are currently applying both content and time criteria in item number selection, modelling future costs of a seven-tier time-based item structure on the basis of current MBS claims data will provide an inaccurate cost estimate.

We examined the extent to which content relates to consultation length and Medicare itemisation, and examined factors influencing a GP's decision to bill a level B consultation when time requirements for level C are met.

METHODS

We conducted a secondary analysis of a subset of data from the Bettering the Evaluation and Care of Health (BEACH) study, a continuous national cross-sectional survey of general practice in Australia. About 1000 GPs participate each year, each providing details (on structured paper encounter forms) about 100 consecutive patient encounters. Data include payment source and, where applicable, Medicare item number.[8]

From 1 April 2000 to 31 March 2003, each GP was asked to record consultation start and finish times for 40 of their 100 encounters, samples being randomly placed in each recording pack (first 40, middle 40 or last 40). For about 200 GPs, these data elements were included on 70 forms. Regu-

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1 General practice A1 items of service: Medicare descriptors[2]

Type	Time requirements	Content requirements
A	No time requirements	Professional attendance for an obvious problem characterised by the straightforward nature of the task that requires a short patient history and, if required, limited examination and management.
B	No time requirements	Professional attendance involving taking a selective history, examination of the patient with implementation of a management plan in relation to one or more problems *OR* a professional attendance of less than 20 minutes duration involving components of a service to which the Level C descriptor applies.
C	Minimum of 20 minutes[3]	Professional attendance involving taking a detailed history, an examination of multiple systems, arranging any necessary investigations and implementing a management plan in relation to one or more problems, and lasting at least 20 minutes, *OR* a professional attendance of less than 40 minutes duration involving components of a service to which the level D descriptor applies.
D	Minimum of 40 minutes	Professional attendance involving taking an exhaustive history, a comprehensive examination of multiple systems, arranging any necessary investigations and implementing a management plan in relation to one or more complex problems, and lasting at least 40 minutes, *OR* a professional attendance of at least 40 minutes duration for implementation of a management plan.

2 Mean and median length of consultations for selected timed Medicare item groups

	Number	Mean (95% CI) length (minutes)	Median length (minutes)	Range (minutes)
Consultations claimed as level B	86 201	13.0 (12.9–13.1)	12	1–105
Shorter level B (⩽ 20 minutes)	80 476	11.9 (11.8–12.0)	11	1–20
Longer level B (> 20 minutes	5 725	28.3 (28.0–28.6)	25	21–105
Level C consultations of > 20 minutes	9 168	29.2 (28.9–29.4)	28	21–165
Level B+C consultations > 20 minutes	14 893	28.8 (28.6–29.0)	26	21–165

lar data-cleaning procedures checked outliers in calculated consultation length for data entry error and for sequential time-fit of encounters. Impossible data were eliminated. Problems managed at encounter were classified according to the International Classification of Primary Care (ICPC-2).[9] Chronic problems were selected using the ICPC-2 rubric groupings of O'Halloran et al.[10]

We examined four consultation groups:

- encounters ⩽ 20 minutes designated by the GP as Medicare level B.
- encounters > 20 minutes designated as level B or level C, and two subsets:
  - encounters > 20 minutes designated Medicare level B;
  - encounters > 20 minutes designated Medicare level C.

We compared place of consultation, characteristics of patients seen and consultation complexity (measured by number of reasons for encounter, number of problems, number of chronic problems, rates of medication, clinical treatments, pathology and imaging tests ordered, and referrals made). The distribution of problems managed across ICPC-2 chapters was also compared.[9]

Statistical analyses

Consultation length was calculated as finish time less start time, in minutes. Mean consultation length and 95% confidence intervals (adjusted for the study cluster design) were calculated using SAS.[11]

Ethics approval

Ethics committees of the University of Sydney and the Australian Institute of Health and Welfare approved the BEACH study.

RESULTS

Medicare A1 item numbers were recorded for 106 239 encounters with 2864 GPs. Of these, 101 122 encounters (95.2%) with 2811 GPs also had start and finish times recorded and were included in this analysis.

There were 80 476 level B consultations ⩽ 20 minutes, 5725 level B consultations > 20 minutes, and 9168 level C consultations > 20 minutes. These level C consultations were significantly but marginally longer (29.2 minutes) than the longer level B consultations (28.3 minutes) (Box 2).

Comparison of shorter level B and longer level B+C consultations

Compared with shorter level B consultations, the longer level B+C consultations were more often home visits; with female patients, adults rather than children, patients holding Commonwealth Department of Veterans' Affairs cards and patients new to the practice. They involved significantly more patient reasons for encounter, problems managed, new problems and chronic problems, clinical treatments (counselling/advice), therapeutic procedures, referrals, and tests. However, they resulted in significantly fewer medications (Box 3).

Comparison of longer consultations claimed as level B and level C

Compared with longer consultations claimed as level B, those claimed as level C were more often with female patients, health care card holders, and patients new to the practice. They involved more reasons for encounter, problems managed, chronic problems and problems new to the patient, more clinical treatments and pathology tests, but fewer medications and therapeutic procedures.

Comparison of problems managed at consultation

We compared the morbidity managed in each consultation group in terms of the proportional distribution (according to the ICPC-2) of total problems managed (Box 4).

The longer level B+C consultations involved relatively more neurological and endocrine/metabolic problems than shorter level B consultations, but these did not differ between consultations claimed as level B or as level C. Psychological, social and female genital problems were more frequently managed in longer consultations than in the shorter ones, and were more often managed at the consultations claimed as level C than at the longer level B consultations.

The longer consultations involved fewer respiratory, skin, eye and ear problems. Compared with longer level B consultations,

3 Comparison of characteristics of consultations, by length and item number choice

Consultation characteristics	Level B consultations ⩽ 20 minutes (*n* = 80 476)	Level B and C consultations > 20 minutes		
		Level B+C (*n* = 14 893)	Level B (*n* = 5725)	Level C (*n* = 9168)
Location (% [95% CI])				
Surgery	97.0% (96.6%–97.4%)	95.0% (94.3%–95.6%)	93.8% (92.8%–94.7%)	95.7% (94.9%–96.5%)
Home	1.4% (1.1%–1.6%)	3.2% (2.8%–3.7%)	3.9% (3.2%–4.6%)	2.8% (2.2%–3.4%)
Patient characteristics (% [95% CI])				
Male	41.5% (41.0%–42.1%)	35.2% (34.1%–36.3%)	37.6% (36.1%–39.0%)	33.8% (32.4%–35.2%)
25–44 years	24.6% (24.1%–25.1%)	27.4% (26.6%–28.5%)	26.0% (24.6%–27.3%)	28.5% (27.2%–29.8%)
45–64 years	25.4% (25.0%–25.8%)	31.1% (30.2%–31.9%)	29.9% (28.6%–31.3%)	31.8% (30.7%–32.8%)
⩾ 65 years	24.8% (24.1%–25.5%)	28.1% (27.0%–29.2%)	27.6% (26.1%–9.1%)	28.4% (27.0%–9.7%)
Health care card holder	43.0% (42.1%–43.9%)	43.1% (41.8%–44.4%)	39.3% (37.5%–41.1%)	45.5% (43.9%–47.0%)
Veterans'Affairs card holder	3.5% (3.3%–3.7%)	4.5% (4.1%–4.9%)	4.0% (3.4%–4.6%)	4.8% (4.3%–5.3%)
New to practice	8.5% (8.0%–9.0%)	11.2% (10.3%–12.0%)	9.3% (8.3%–10.3%)	12.3% (11.2%–13.5%)
Non-English-speaking background	8.6% (7.8%–9.4%)	7.9% (7.0%–8.8%)	7.7% (6.4%–9.0%)	8.1% (7.0%–9.1%)
Indigenous	1.1% (0.8%–1.3%)	1.2% (0.9%–1.5%)	1.1% (0.7%–1.5%)	1.2% (0.8%–1.5%)
Content (rate per 100 consultations [95% CI])				
Reasons for encounter	148.3 (148.2–150.3)	185.2 (183.1–187.4)	169.3 (166.4–172.1)	207.6 (204.0–210.8)
Problems managed	143.0 (142.0–144.1)	194.4 (191.9–196.9)	173.4 (170.3–176.5)	204.0 (210.8)
New problems managed	54.1 (53.2–55.0)	66.4 (64.5–68.2)	60.3 (58.0–62.7)	70.1 (67.8–72.5)
Chronic problems managed	64.2 (62.8–65.6)	118.6 (115.4–121.9)	99.1 (95.0–103.1)	130.9 (126.7–135.0)
Total problems managed	115 095	28 955	9927	19 028
Management (rate per 100 problems [95% CI])				
Chronic problems	44.9 (44.1–45.7)	61.0 (59.9–62.2)	57.1 (55.5–58.8)	63.1 (61.7–64.4)
Medications	74.1 (73.2–74.9)	61.6 (60.1–63.1)	65.1 (63.0–67.2)	59.8 (58.0–61.7)
Prescribed medications	60.9 (60.0–61.8)	51.1 (49.6–52.5)	53.5 (51.4–55.6)	49.8 (48.1–51.5)
Clinical treatments	26.8 (26.0–27.6)	32.9 (31.7–34.1)	29.3 (27.7–30.9)	34.8 (33.3–36.3)
Therapeutic procedures	8.6 (8.3–8.8)	11.6 (11.0–12.2)	12.8 (11.8–13.7)	11.0 (10.3–11.7)
Referrals	6.5 (6.3–6.6)	10.9 (10.5–11.3)	10.4 (9.8–11.1)	11.2 (10.7–11.7)
Pathology tests	19.6 (19.0–20.1)	35.5 (34.0–36.9)	29.8 (27.9–31.8)	38.4 (36.6–40.2)
Imaging tests	5.0 (4.9–5.2)	7.5 (7.1–7.9)	7.1 (6.4–7.7)	8.2 (7.6–8.7)

level C consultations involved fewer respiratory and skin problems, and similar rates of eye and ear problems.

DISCUSSION

Our study suggests that consultations > 20 minutes are more complex than shorter consultations, and that those claimed as level C are even more complex than those claimed as level B. This complexity is most strongly reflected in the number and types of problems managed at the level C encounters, but is also related to patient demand for multiple problem management, management of chronic problems, presence of psychosocial and gynaecological problems, provision of advice or counselling, and ordering pathology tests.

There are some limitations to this study. It is based on such a large sample that even relatively small quantitative differences between factors associated with level B and level C billing take on statistical significance. Further, the number of comparisons made means that some differences identified may be type 1 errors.

The participating GPs completed an encounter form at each consultation. The extent to which they included recording time (which averages about two minutes) as part of the consultation is not known. If they consistently did so, the real consultation lengths would be shorter than estimated.

We could not validate recorded start and finish times. A previous study showed a large proportion of consultations recorded as exactly 10, 15 or 20 minutes, suggestive of rounding, which casts some doubt about the study's accuracy for assessing exact length of consultation.[12]

The Medicare requirements for a level C claim include both time and content. If time were the prime factor in GP item selection, we would expect a considerable difference in duration of the level C and longer level B consultations. However, the difference was somewhat marginal, with a difference of less than 1 minute for the means and 3 minutes for the medians. Clearly, factors other than time influence GP item choice.

4 Comparative distribution of problems managed, by ICPC-2 chapter (as a percent of total problems managed)

ICPC-2 chapter or individual problem	Level B consultations ⩽ 20 minutes (% problems managed [95% CI]) (n = 115 095)	Level B and C consultations > 20 minutes (% of problems managed [95% CI])		
		Level B+C (n = 28 955)	Level B (n = 9927)	Level C (n = 9168)
Blood, blood-forming	1.0% (0.9%–1.0%)	1.0% (0.9%–1.2%)	1.2% (1.0%–1.4%)	1.0% (0.8%–1.1%)
Circulatory	11.6% (11.3%–11.8%)	11.4% (11.0%–11.9%)	11.4% (10.7%–12.1%)	11.4% (10.8%–12.0%)
Digestive	6.9% (6.7%–7.1%)	6.6% (6.2%–6.9%)	7.0% (6.4%–7.5%)	6.3% (6.0%–6.7%)
Ear	3.2% (3.1%–3.3%)	1.8% (1.6%–1.9%)	2.1% (1.8%–2.4%)	1.6% (1.4%–1.8%)
Endocrine/metabolic	7.0% (6.8%–7.3%)	8.5% (8.1%–8.9%)	8.3% (7.6%–8.9%)	8.6% (8.2%–9.1%)
Eye	1.9% (1.8%–2.0%)	1.4% (1.3%–1.5%)	1.6% (1.3%–1.8%)	1.3% (1.1%–1.5%)
Female genital	4.2% (4.1%–4.4%)	8.1% (7.6%–8.6%)	6.6% (6.0%–7.2%)	8.9% (8.3%–9.5%)
General and unspecified	10.2% (10.0%–10.5%)	10.3% (9.8%–10.7%)	10.5% (9.8%–11.1%)	10.2% (9.6%–10.7%)
Male genital	0.9% (0.8%–1.0%)	1.0% (0.8%–1.2%)	1.2% (0.9%–1.4%)	1.0% (0.8%–1.1%)
Musculoskeletal	10.8% (10.6%–11.1%)	11.3% (10.8%–11.8%)	11.8% (11.1%–12.6%)	11.1% (10.4%–11.7%)
Neurological	2.5% (2.4%–2.6%)	3.1% (2.9%–3.3%)	3.0% (2.6%–3.3%)	3.1% (2.9%–3.4%)
Pregnancy, family plan	2.6% (2.4%–2.7%)	2.5% (2.3%–2.8%)	2.6% (2.3%–3.0%)	2.5% (2.2%–2.8%)
Psychological	6.7% (6.4%–6.9%)	11.6% (11.0%–12.2%)	8.7% (8.1%–9.3%)	13.1% (12.3%–13.9%)
Respiratory	16.6% (16.2%–16.9%)	8.7% (8.4%–9.1%)	10.1% (9.4%–10.8%)	8.1% (7.6%–8.5%)
Skin	11.5% (11.2%–11.8%)	9.3% (8.9%–9.7%)	11.3% (10.5%–12.0%)	8.2% (7.8%–8.7%)
Social	0.4% (0.3%–0.4%)	1.4% (1.2%–1.6%)	0.8% (0.6%–1.0%)	1.7% (1.4%–2.1%)
Urinary	2.0% (1.9%–2.1%)	2.0% (1.8%–2.1%)	1.9% (1.7%–2.2%)	2.0% (1.8%–2.2%)
Total	100.0%	100.0%	100.0%	100.0%

Patient age and Veterans' Affairs card status are clearly related to the length of the consultation, but do not relate to the GP's choice of item number. In contrast, patient health care card status relates to choice of level B or C in longer consultations, but not to consultation length *per se*. Health care card holders have been shown to have a greater morbidity burden than other general practice patients,[13] and morbidity and age are closely linked, so these factors may be reflecting morbidity patterns rather than being independent predictors of either length of consultation or item choice. However, GPs may be less inclined to charge a patient without a health care card for a level C consultation (if they do not bulk bill them), because of the cost to the patient.

The higher proportion of female patients at longer consultations and the even higher proportion at level C consultations may reflect a mixed effect of morbidity and GP sex: women more often see female GPs,[14] whose consultation times are, on average, longer than those of male GPs,[12] and female patients have higher rates of psychosocial and genital problems.[14]

The greater proportion of patients new to the practice at longer consultations, and especially at the level C consultations, suggests that new-patient status may be independent of morbidity in predicting length and item number, as a more complex history is required. Specialist physicians have always charged more for the first consultation. There is no allowance for this in the MBS for general practice, so GPs may be more likely to charge a level C consultation for new-patient assessment.

GPs appear to be using both time and content appropriately in choosing item numbers. The differences between longer consultations billed as level B and those billed as level C indicate that considerations other than time influence billing decisions. Moreover, this does not appear to be simply down-coding (where a GP who has fulfilled the descriptor bills a lower-value item number). There appear to be valid reasons for apparent down-coding (ie, GPs appear to have a strong sense of the relative value of consultation content).

More than a third of the BEACH longer consultations were designated level B. The 2003 Medicare claims data show that practitioners claiming A2 items of service (which do not require consideration of content) billed 15% of all claimed attendances as long consultations, whereas those billing A1 items claimed 11.9% at level C.[15] If the longer level B consultations in BEACH are added to the level C consultations in BEACH, longer consultations represent 14.7% of all A1 items of service, which aligns with the pattern of A2 claims. This suggests that if future Medicare items are purely time-based, "bracket creep" will result and the pattern of claims will change, so that modelling future costs on the basis of current Medicare claims will not generate reliable cost estimates.

We plan to further investigate the relative importance of these factors and of GP characteristics in determining choice of level B or C for longer consultations. Meanwhile, this study may provide an opportunity for more educated discussion on future Medicare fee structures for GP attendances.

Implications of the study

Any review of the MBS descriptors can now be reasonably confident of GPs' ability to apply subjective ratings when selecting item numbers. Further, in an environment where peer billing patterns are the basis of Health Insurance Commission interventions, GPs can be reassured that their colleagues are apparently billing in accordance with the MBS when choosing between a level B or C item at longer consultations.

COMPETING INTERESTS

Jillann Farmer is employed by the Health Insurance Commission (HIC), which is responsible for the administration of Medicare. The opinions expressed in this article are those of the authors and not necessarily those of the HIC. There are no identified competing interests for the other authors.

REFERENCES

1 General practice in Australia: 2000. Canberra: Department of Health and Aged Care, 2000.
2 Medicare Benefits Schedule Book. Canberra: Department of Health and Ageing, 2003.
3 Medicare Benefits Schedule Book explanatory notes. Canberra: Department of Health and Ageing; 2003.
4 Mansfield BJ, Ireland M, Dickinson JA. Variability in classification of consultations by content-based descriptors. *Med J Aust* 1991; 155: 626-630.
5 Harris EA, Richardson J, Farish SJ, Saltman DC. The reliability and validity of work measurement in Australian general practice consultations. *Med J Aust* 1996; 165: 18-21.
6 Scott A, Shiell A. Do fee descriptors influence treatment choices in general practice? A multilevel discrete choice model. *J Health Econ* 1997; 16: 323-342.
7 Beilby J. Final report of the attendance item restructure working group. Melbourne and Sydney: Attendance Item Restructure Working Group, 2003. Available at: www.racgp.org.au/folder.asp?id=915 (accessed Mar 2004).
8 Britt H, Miller GC, Knox S, et al. General practice activity in Australia 2002–03. Canberra: Australian Institute of Health and Welfare; 2003.
9 Classification Committee of the World Organization of Family Doctors. ICPC-2: international classification of primary care. 2nd ed. Oxford: Oxford University Press, 1997.
10 O'Halloran J, Britt H, Valenti L, et al. Older patients attending general practice in Australia 2000–02. Canberra: Australian Institute of Health and Welfare, 2003.
11 SAS [computer program]. Proprietary software release 8.2. Cary: SAS Institute Inc, 2001.
12 Britt H, Valenti L, Miller G. Time for care. Length of general practice consultations in Australia. *Aust Fam Physician* 2002; 31: 876-880.
13 Charles J, Valenti L, Britt H. 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. *Aust Fam Physician* 2003; 32: 85-88, 94.
14 Britt H, Bhasale A, Miles DA, et al. The sex of the general practitioner: a comparison of characteristics, patients, and medical conditions managed. *Med Care* 1996; 34: 403-415.
15 Health Insurance Commission. Medicare Benefits Schedule (MBS) statistics reports [database on the Internet]. Canberra: HIC, 2003. Available at: www.hic.gov.au/providers/health_statistics/statistical_reporting/medicare.htm (accessed Mar 2004).

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