Acupuncture in Australian general practice: trends in reimbursed acupuncture services from 1995 to 2011

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ABSTRACT

Objectives To ascertain the extent of and trends in the use of acupuncture in Australian general practice and the characteristics of patients receiving publicly subsidised acupuncture services from general practitioners (GPs).

Design Secondary analysis of national patient Medicare data for claims by all non-specialist medical practitioners for Medicare Benefits Schedule items for an attendance where acupuncture was performed by a medical practitioner from 1995 to 2011.

Main outcome measures Use of acupuncture by GPs, patients’ sex and age and the socioeconomic disadvantage index of GP’s practice.

Results There has been a 47.7% decline in the number of acupuncture claims by GPs per 100 000 population in the period from 1995 to 2011. Acupuncture claims were made by 3.4% of GPs in 2011. Women were almost twice as likely to receive acupuncture from a GP as men, and patients in urban areas were more than twice as likely to receive acupuncture from a GP as patients in rural areas. Acupuncture claims were highest in areas that were socioeconomically advantaged.

Conclusions Claims for reimbursement for acupuncture by GPs have declined significantly in Australian general practice even though the use of acupuncture by the Australian public has increased. This may be due to increased use of referrals or use of non-medical practitioners, barriers to acupuncture practice in general practice or non-specific factors affecting reimbursement for non-vocationally registered GPs.

INTRODUCTION

Complementary and alternative medicines (CAM)—a range of practices and products not traditionally associated with the medical profession or medical curriculum—are used in some form by the majority of Australians, with some studies suggesting CAM may account for over half of all out-of-pocket health expenditure by patients. There has been significant debate recently regarding the role of general practitioners (GPs) in providing CAM to patients, although there does seem to be a substantial level of support for some CAM among Australian GPs. However, most research on CAM in Australia focuses on patient consumption or risks associated with consumption, and there is little critical examination or quantification of how Australian GPs use CAM in their practice.

Acupuncture is a significant CAM discipline in the Australian setting, with studies indicating utilisation rates of 4.2–9.2%. In Australia, GPs have been able to provide publicly reimbursed acupuncture services since 1984 through a publicly subsidised rebate under Medicare, Australia’s national health insurance system (item number 980 until 1990; item number 173 thereafter; item numbers 193, 195 and 199 added for GPs with postgraduate acupuncture training). Analysis of medical practitioner use of this rebate provides an excellent opportunity for observing trends in CAM practice by Australian GPs as it provides a useful dataset of a standardised CAM intervention over a number of decades. In 1986 a Victorian government review of complementary medicine practices found that 21% of GPs responding to their survey had personally used acupuncture in practice, and in 1988 a National Health and Medical Research Council
Audit of Australian Health Insurance Commission data suggested that approximately 10% of GPs used Medicare rebates for acupuncture, though some only infrequently. Analysis of Medicare rebates in the 1990s suggested that acupuncture was practised by 14% of Australian GPs and made up 0.5% of all GP-related Medicare claims.

In 1998 and 2003, new Medicare item numbers (193, 195, 197 and 199) for acupuncture were introduced for providing subsidies for acupuncture services by the government that were restricted to GPs with accredited training in acupuncture, although non-accredited GPs were still allowed to claim the reduced reimbursement under item number 173. To date, there has been no formal examination of the impact of this increased training requirement on acupuncture provision by Australian GPs. This article examines the trends in acupuncture provision by Australian GPs from 1995 to 2011.

METHODS
Medicare, the Australian public health insurer, collects data on services provided by recognised health providers. These administrative data are used to reimburse health practitioners for services provided in Australia’s fee-for-service public health system. National patient Medicare data for all acupuncture items (item numbers 173 from January 1995, item numbers 193 and 195 from November 1998 and item numbers 199 from May 2003) were analysed from the periods of their introduction up until December 2011. These data included frequency of acupuncture items, frequency of non-acupuncture items (total) and patient gender and age groupings. Medicare claims data with provider location were analysed for the 3 years between January 2009 and December 2011 to ascertain current demographic and geographical patterns of acupuncture provision for analysis.

Location data (statistical local area) were used to assign an Index of Relative Social Disadvantage (IRSD) score to each location of acupuncture service provision, derived from Australian Bureau of Statistics data. IRSD was used as a proxy of socioeconomic status. Logistic regression models were constructed using the statistical software Stata. Reference categories for analysis were set at the same values as previous studies of Australian acupuncture in general practice. Due to the large sample size, statistical significance was set at p<0.001.

Note that location data for 162,408 services (14.9% of services) were not able to be provided to preserve practitioner anonymity and were therefore excluded from the analysis. Data were reported by the Division of General Practice as smaller geographical areas were not able to be analysed to ensure practitioner and patient anonymity.

Assembled data for a 12-month period between January and December 2011 were imported into a geographic information system (GIS) for spatial visualisation and the number of services and GP locations were linked to a map of Divisions of General Practice using ArcGIS V10 (http://www.esri.com/software/arcgis).

RESULTS
In the period between January 1995 and December 2011, 11,874,936 acupuncture services were claimed in Australia. There were 2401 acupuncture claims per 100,000 population in 2011 (a 47.7% decline from 5033 per 100,000 in 1995), representing 0.26% of GP Medicare general practice claims and 0.16% of Medicare general practice expenditure.

Claims for acupuncture steadily decreased across all states and territories after an initial rise in 1995–6, with this decrease being particularly pronounced in most states and territories between 1996 and 2003. Claims in South Australia, Tasmania and the
Australian Capital have remained relatively consistent since 1995. There has been a consistent increase in claims in the Northern Territory since 2006 and in Queensland from 2009 (see figure 1).

There has also been a steady decline in acupuncture services as a proportion of total Medicare claims for professional attendances, again with a particularly pronounced drop between 1996 and 2003, this time in all states and territories except South Australia (see figure 2). Acupuncture claims were made by 3.4% of Australian GPs in the period between January 2011 and December 2011. The maps shown in figures 3 and 4 illustrate where uptake of acupuncture services by patients is most prevalent (claims per capita) and where uptake of acupuncture practice by GPs is most prevalent (percentage of total GPs who make claims for acupuncture).

Women were almost twice as likely as men to receive acupuncture from a GP (table 1). Women
made up between 60% and 70% of all claims in most states and territories throughout the entire period, except in the Northern Territory (before 2005) when women made up between 35% and 55% of all claims and in Western Australia after 2010 where women make up 75% of GP acupuncture claims. The proportion of claims nationally for acupuncture made by women has been consistently rising from 64% in 1995 to 68% in 2011.

Acupuncture claims increased linearly with patient age to the 55–64-year age group and then declined from age 65 and beyond (table 1). Acupuncture claims were also highest in areas that are relatively the most socioeconomically advantaged, with GPs practising in divisions in the highest quintile of the IRSD being nearly 50% more likely to claim for acupuncture than those in divisions with average or low IRSDs. However, those in disadvantaged areas are not less likely than those in non-disadvantaged areas to claim for acupuncture, as there was no significant difference between claims in areas with average or low IRSDs (table 1).

**DISCUSSION**

Our analysis shows that, over the past few decades, Medicare Benefits Schedule (MBS) acupuncture claims by Australian GPs have significantly decreased. This decline may be due to a number of factors, including increasing requirements for medical practitioners to claim rebates and the growth in referral to non-medical practitioners using acupuncture. The introduction of new Medicare item numbers and stricter requirements for accessing these item numbers seems to have had some impact on provision of acupuncture by GPs. The period directly following the introduction of new item numbers requiring extra training (the second half of 1998) saw a sharp decrease in the total number of acupuncture claims. These requirements were further compounded by increased professionalisation in the Australian GP workforce in the 1990s, where full reimbursement for many item numbers were only made available to practitioners with specialised training in general practice or those who were grandfathered into vocational registration. In the first full year of the introduction of new item numbers, item 173 (not requiring accreditation) made up 54% of all acupuncture claims, falling to 14% of all acupuncture claims by 2011.

Some of this decline may be due to monetary factors. Easthope et al noted that, in 1998, an acupuncture visit was $2.55 less than a standard consultation. Our analysis shows that, in 2012, this gap had widened considerably. Although reimbursement for item 193...
Table 1  Demographic factors affecting Medicare Benefits Schedule (MBS) acupuncture claims for MBS item numbers 173, 193, 195, 197 and 199 between January 2010 and December 2011

<table>
<thead>
<tr>
<th></th>
<th>N (%)</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (n=1086623)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>345854 (31.8)</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>740769 (68.2)</td>
<td>1.82 (1.75 to 1.92)*</td>
</tr>
<tr>
<td>Age (n=1086623)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–4</td>
<td>2595 (0.2)</td>
<td>0.07 (0.05 to 0.11)*</td>
</tr>
<tr>
<td>5–14</td>
<td>10229 (0.9)</td>
<td>0.30 (0.25 to 0.37)*</td>
</tr>
<tr>
<td>15–24</td>
<td>26924 (2.5)</td>
<td>0.58 (0.50 to 0.68)*</td>
</tr>
<tr>
<td>25–34</td>
<td>60460 (5.6)</td>
<td>1.00</td>
</tr>
<tr>
<td>35–44</td>
<td>120655 (11.1)</td>
<td>1.82 (1.65 to 2.00)*</td>
</tr>
<tr>
<td>45–54</td>
<td>204771 (18.8)</td>
<td>2.69 (2.45 to 2.95)*</td>
</tr>
<tr>
<td>55–64</td>
<td>252545 (23.2)</td>
<td>3.08 (2.81 to 3.36)*</td>
</tr>
<tr>
<td>65–74</td>
<td>226085 (20.8)</td>
<td>3.00 (2.74 to 3.28)*</td>
</tr>
<tr>
<td>75–84</td>
<td>154483 (14.2)</td>
<td>2.52 (2.29 to 2.77)*</td>
</tr>
<tr>
<td>Over 85</td>
<td>27876 (2.6)</td>
<td>1.20 (1.04 to 1.38)*</td>
</tr>
<tr>
<td>Socioeconomic (IRSD)† (n=924215)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st quintile</td>
<td>105360 (11.4)</td>
<td>0.98 (0.84 to 1.13)</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>103513 (11.2)</td>
<td>0.90 (0.77 to 1.04)</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>153420 (16.6)</td>
<td>1.00</td>
</tr>
<tr>
<td>4th quintile</td>
<td>249538 (27.0)</td>
<td>1.34 (1.18 to 1.51)*</td>
</tr>
<tr>
<td>5th quintile</td>
<td>312384 (33.8)</td>
<td>1.47 (1.31 to 1.66)*</td>
</tr>
<tr>
<td>Rurality (n=924215)†</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban division</td>
<td>842585 (91.2)</td>
<td>1.00</td>
</tr>
<tr>
<td>Rural division</td>
<td>81630 (8.8)</td>
<td>0.45 (0.34 to 0.60)*</td>
</tr>
</tbody>
</table>

*p<0.001.
†Data are based on practice location in which the procedure was performed, not on the local residence of the patient.
IRSD, Index of Relative Social Disadvantage.

(which requires postgraduate training in acupuncture) is equivalent to a standard consultation ($35.60), reimbursement for item 173 (a consultation where acupuncture is performed by a GP not specifically accredited in acupuncture) is only $21.65 ($13.95 less than a standard consultation). For specialist medical practitioners providing acupuncture services, the gap in reimbursement may be even more pronounced.

The changes in MBS item numbers for reimbursement of acupuncture may provide two major disincentives for GPs to practice acupuncture: (1) the financial costs borne by lower rebates; and (2) the opportunity and time costs associated with requirement for extensive postgraduate training to access higher reimbursement rates for acupuncture. These disincentives may result in GPs preferring to refer their patients to third parties for acupuncture services rather than performing acupuncture services personally. It is also possible that medical practitioners are continuing to perform acupuncture in clinical practice but not claiming acupuncture item numbers. This may not be policed because dry needling is allowed, has no item number and the normal fee can be charged for a medical visit. This hypothesis would support the difference between MBS claims for use of acupuncture and self-reported prevalence of acupuncture use in practice observed in national surveys of Australian GPs, which in 2005 was reported as 18%. Continually, these findings may indicate inefficiencies in the current reimbursement mechanisms for acupuncture services provided by medical practitioners in Australia.

It is also noteworthy that reimbursed GP practice of acupuncture has decreased despite high support for acupuncture among the GP population with 84% of GPs indicating they thought acupuncture was moderately or highly effective in a survey published in 2005. Continuing high support for acupuncture combined with declining personal use may indicate that GPs are increasingly referring to third party providers for acupuncture services. This appears to be the experience in New Zealand where the practice of CAM by GPs has decreased over the same period while referral to third party providers of complementary care has increased concurrently.

The mere presence of more non-medical acupuncture providers may also mean that referral options now exist that may not have existed in previous decades. For example, in 1988 it was estimated that there were only 90–400 non-medical acupuncturists in Australia (compared with >2800 GPs providing acupuncture services), which increased to >3000 in 2009. The use of acupuncture services is also increasing among the Australian population, and non-medical acupuncturists are increasing their presence in all parts of Australia. Additionally, the standards of non-medical acupuncturists have increased considerably with the registration of Chinese medicine practitioners and the advent of 5-year university training for acupuncturists. This, combined with the increasing utilisation of acupuncture by other professions (such as physiotherapists), may mean that GPs are more comfortable with third party providers of acupuncture services in recent years than they were previously.

The interpretation of our findings needs to be taken in light of several limitations. Previous explorations of acupuncture in Australian general practice were able to access Health Insurance Commission data at the individual patient level and practitioner level, which was not available for our study. Instead, data were gathered based on the location of each item number being performed. There are challenges to comparing our analysis and data with that from previous research in this area due to changes in data collection and access policies by Australia’s national public health insurance agency. This may help to explain some differences in the results seen in this study from those in a previous examination by Easthope et al of Australian Medicare data, which used a random sample rather than the entirety of claims data as analysed in our study. Nevertheless, the 16 years of data analysed in our study provides a comprehensive overview of trends in GP provision of acupuncture services in Australia and...
shows significant changes in the way that GPs manage patient access to acupuncture services.

CONCLUSION

Acupuncture remains a significant part of general practice in Australia although personal use by GPs appears to be declining. This decline is inconsistent with the continuing high level of support for acupuncture among the Australian GP community and the wider community, and may be due to a number of factors limiting the provision of acupuncture by medical practitioners such as increased referrals and increased barriers to entry for Medicare rebates for acupuncture services. The practice and policy implications of GPs’ declining acupuncture use warrants further investigation. Issues such as the increasing non-medical practitioner provision of services previously performed by medical practitioners and the increasing role that CAM practitioners appear to play in health service delivery in Australia require further research attention and are important areas for future public health and health services research consideration.

Summary points

- National patient Medicare (Australian public health insurer) data for all acupuncture items were analysed from the periods of their introduction up until December 2011.
- Claims for acupuncture steadily decreased across all states and territories after an initial rise in 1995–6.
- Women made up between 60% and 70% of all claims in most states and territories throughout the entire period.
- Acupuncture remains a significant part of general practice in Australia although personal use by GPs appears to be declining.

Contributors

JLW was involved with conception and design of the study, procuring and preparation of the data for analysis, analysing and interpreting the data, spatial visualisation of the data and drafting and revising the manuscript. JA was involved with conception and design of the study, analysing and interpreting the data and drafting and revising the manuscript. DWS was involved in analysing and interpreting the data and drafting and revising the manuscript. All authors read and approved the final manuscript.

Competing interests

None.

Provenance and peer review

Not commissioned; externally peer reviewed.

Data sharing statement

This is a secondary analysis of a publicly available dataset.

REFERENCES

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