The status of Australian nurse practitioners: the first national census

Anne Gardner, Glenn E Gardner, Sandy Middleton and Phillip R Della

Abstract

A five-section questionnaire was mailed to all 234 authorised Australian nurse practitioners in late 2007. An 85% response rate was achieved (202 responses). Respondents had a mean age of 47.0 years and 84.2% were women. Only 145 nurse practitioners (72% of respondents) reported being employed in Australia at the time of the census. Emergency nurse practitioners were the most commonly employed nationally (26.9%). Nearly one third of employed nurse practitioners reported that they were still awaiting approval to prescribe medications despite this being a core legislated skill. Over 70% stated that lack of Medicare provider numbers and lack of authority to prescribe through the Pharmaceutical Benefits Scheme was extremely limiting to their practice. These findings are consistent with the international literature describing establishment of reformative health care roles.

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What is known about the topic?

The nurse practitioner role is new to Australia and distinguishable by legislation and scope of practice from other registered nurse roles. There are no population studies reporting on Australian nurse practitioners.

What does this paper add?

A survey of nurse practitioners found that there is under-utilisation of this highly experienced sector of the Australian health workforce, largely as a result of inability to prescribe medications.

What are the implications for practitioners?

The authors stress the need for more efficient utilisation of nurse practitioners, legislative restructure to enable full practice privileges and rigorous national evaluation of the roles.

Anne Gardner, RN, PhD, Professor of Nursing, Tropical Health
School of Nursing, Midwifery and Nutrition, James Cook University, Townsville, QLD.

Glenn E Gardner, RN, PhD, Professor of Clinical Nursing
School of Nursing, Queensland University of Technology and Royal Brisbane and Women's Hospital, Brisbane, QLD.

Sandy Middleton, RN, PhD, Professor of Nursing Research
School of Nursing (NSW and ACT), Australian Catholic University, Sydney, NSW.

Phillip R Della, RN, PhD, Professor of Nursing, Head of School
School of Nursing and Midwifery, Curtin University, Perth, WA.

Correspondence: Professor Anne Gardner, School of Nursing, Midwifery and Nutrition, James Cook University, Townsville Campus, Douglas, Townsville, QLD 4811.
anne.gardner@jcu.edu.au

IN 2000, the first Australian nurse practitioner was authorised in New South Wales. Currently, in 2008, most Australian jurisdictions have legal processes for nurse practitioner title protection and extended practice privileges.

In 2004, the Australian Nursing and Midwifery Council (ANMC) funded research for development of national standards for Australian nurse practitioners.[1] This was an important first step in ensuring that the nascent, state-by-state-level development of the nurse practitioner role proceeded within a nationally agreed framework for education and practice. The inception of the Australian Nurse Practitioner Association (now the Australian College of Nurse Practitioners)[2] followed soon after, as a national-level, coordinated organisation to support clinician networks and provide an authoritative voice to advise government policy at Commonwealth and state levels.

The next step in this national and research-informed approach to development of an emerging health service role is the Australian Nurse Practitioner Project (AUSPRAC). AUSPRAC is a three-phase project designed to inform health

service managers, governments, policy planners and clinicians on the profile, process and outcomes of nurse practitioner service in Australia. This paper reports the first results from the AUSPRAC study, namely the first census profiling the nurse practitioner service in Australia.

Background

The nurse practitioner role is unique and distinguishable by legislation and scope of practice from the general nursing role, the advanced practice nurse[3]and the clinical nurse specialist.[4] There is limited literature describing and evaluating the nurse practitioner role in Australia. Specific models of nurse practitioner have been studied in the Australian context but there are no population studies reporting on nurse practitioners. Often, reports are based on research undertaken with nurse practitioner candidates (not yet authorised), and therefore the full practice scope cannot be accurately reported (for example, Gardner and Gardner,[5] Allen and Fabri[6] and Nejedly et al[7]).

Internationally, the nurse practitioner has been a feature of the health workforce for over 40 years and there is an extensive body of literature describing and evaluating the role. In addition to the Australian literature, this work is primarily from the United Kingdom and North America and reports on a range of local studies that investigate individual nurse practitioner models in terms of patient and colleague satisfaction,[8] effectiveness of service compared with medical service[9] and descriptive papers on specific nurse practitioner models.[10] However, this body of literature needs to be viewed with caution when applying the findings and recommendations to nurse practitioner implementation and evaluation in Australia because there is wide international cross-border variability in operation of the nurse practitioner role.[11]

Attention to health care workforce issues is essential for effective planning of health service delivery in Australia in the 21st century,[12] and, while development in Australia is informed by national standards for nurse practitioner practice, education and legislation, this is not the situation internationally. In the UK, for example, the title nurse practitioner is not protected by legislation, and hence there are no legally defined minimum qualifications and practice standards for the nurse practitioner. Additionally, other seemingly related nursing roles and titles such as "nurse prescriber", which is focused on medicine management,[13] potentially cause confusion as they are not well differentiated from the nurse practitioner role. In the United States, the nurse practitioner title is legally protected in most states, however there is no national framework, and regulation and governance are located at state level. A recent state-by-state study of nurse practitioner regulation found wide variation existed in state regulation across the US and indications that in some areas nurse practitioners are unable to practise to their full potential.[14] Through the Canadian Nurse Practitioner Initiative,[15] Canada is moving towards national standards and regulations for nurse practitioners. A recent national survey of cardiovascular nurse practitioners in Canada[16] found that this national-level inquiry facilitated understanding of practice patterns within this service with potential to improve knowledge of workforce and patient service issues in this specialty field. Up until now there has been no national survey of Australian nurse practitioners.

The aim of this paper is to describe the current characteristics and distribution of nurse practitioners in Australia by reference to the geographical location of their workplace, their scope of practice, patterns of practice and barriers to practise. Other papers will cover the patterns of professional preparation and need for continuing education for the role in Australia.

Methods

A national census was conducted of all Australian nurse practitioners who were authorised to practise in Australia in July 2007. The population numbers were obtained from each Australian nurse registering authority.

The questionnaire

A 14-page questionnaire was developed (entitled *Nurse practitioner survey 2007*). Details of the full

questionnaire are available on request. It comprised five sections:

- Demographics
- Authorisation process
- Professional development
- Employment profile
- Clinical service patterns.

The results presented in this article relate primarily to the sections exploring demographics, employment profile and clinical service patterns. The questions in the demographic section were based on the Nursing and Midwifery Labour Force Census conducted annually by each state and territory nurse registering authority and reported by the Australian Institute of Health and Welfare (AIHW).

In the section exploring their employment profile, respondents were asked to identify the amount of time they had spent working as a nurse practitioner since authorisation, their clinical field, principal place of work and allocation of responsibilities in the role. Respondents who at the time of the census were not employed as nurse practitioners were asked to indicate what, if any, active steps they had taken to secure work as a nurse practitioner in Australia.

The section related to clinical service patterns specifically elicited information on current clinical work as a nurse practitioner. Respondents were asked to indicate if their capacity to work as a nurse practitioner was determined by clinical and medication protocols and, if so determined, whether these protocols were developed and approved at the time of the census. "Protocol" is used in this paper as a generic term because terminology related to these mechanisms to determine and govern medication usage and scope of practice varies across jurisdictions.

The same section also included questions asking nurse practitioners to indicate to whom they referred patients, to nominate the diagnostic tests relevant to their practice and to state whether they had hospital admission and discharge privileges. Nurse practitioners were also asked about the arrangements for professional indemnity insurance. The final question employed a seven-point Likert scale ranging from "not at all limiting" to "extremely limiting" to gauge the extent of limits to nurse practitioner practice. Nurse practitioners were asked for their opinions about limits to their current clinical work as a nurse practitioner. There was also an opportunity, at the end of the questionnaire, for participants to expand in free text about these issues or other factors that they believed limited their practice as a nurse practitioner.

Independent external peer review was conducted by an expert panel comprising authorised Australian nurse practitioners, researchers, senior nurses and policy makers, including an analyst from the AIHW. The panel reviewed the face and content validity of all items. The draft questionnaire was pilot tested by 30 nurse practitioner candidates enrolled in a Master of Nursing Science (Nurse Practitioner) degree in July 2007. The final questionnaire was developed following results of the pilot study and feedback from independent expert review.

Study procedure

An advance letter, signed by the Chief Executive Officer of the ANMC, was sent to all Australian nurse registering authorities identified in a report produced by the National Nursing and Nursing Education Taskforce (N3ET)[17] as having nurse practitioners within their jurisdiction. The nurse registering authorities distributed the questionnaire as requested between September and November 2007 using standardised identity protection processes. The postal mail-out process comprised three components. The first package included a covering letter explaining the purpose of the study, a plain language statement, unique identifier sheet (to enable linking of data to a planned future repeat national census), a copy of the questionnaire and a reply-paid envelope. The original mail-out was followed by two postal reminders.[18] Return of the questionnaire was regarded as consent to participate in the study.

Ethics approval was granted by Queenslands University of Technology and the Australian Catholic University. Data were analysed using the SPSS, version 14.0 (SPSS Inc, Chicago, Ill, USA). Frequencies for questionnaire responses were cal-

1 Comparison of the demographics between practising and non practising responding nurse practitioners (N = 202)

	Nurse practitioners currently employed as such (no. [%])	Nurse practitioners currently NOT employed as such (no. [%])	Total
Sex			
Men	24 (16.3)	8 (14.5)	32 (15.8)
Women	123 (83.7)	47 (85.5)	170 (84.2)
Total	147 (100.0)	55 (100.0)	202 (100.0)
Age groups (years)			
30–39	35 (23.8)	6 (10.9)	41 (20.3)
40–49	62 (42.2)	23 (41.8)	85 (42.1)
⩾ 50	50 (34.0)	26 (47.3)	76 (37.6)
Total	147 (100.0)	55 (100.0)	202 (100.0)

2 Responding nurse practitioner workplace remoteness area classification divided into metropolitan v non-metropolitan areas (*n* = 143)

State or territory	Metropolitan (no. [%])]	Non-metropolitan (no. [%])]	Total (rows)
New South Wales	48 (41.4)	19 (70.4)	67
Victoria	21 (18.1)	2 (7.4)	23
South Australia	17 (14.6)	0	17
Western Australia	16 (13.8)	6 (22.2)	22
Queensland	9 (7.8)	0	9
Australian Capital Territory	5 (4.3)	0	5
Totals (columns)	116	27	143

culated for all variables. Descriptive and comparative analyses were conducted consistent with the structure of items in the questionnaire.

Results

The first national Nurse Practitioner Survey was conducted from September to November 2007. All 238 nurse practitioners authorised at that time within Australia were included in the census. Of these, 202 completed and returned the questionnaire within the allotted timeframe (response rate 85%). Response rates ranged from 100% in Queensland to 83% in NSW. In this paper we report primarily on the demographic, employment and clinical service profiles of nurse practitioners.

Age and sex

As can be seen in Box 1, of the 202 respondents, the majority were female 84.2% (170). Respondents ranged in age from 31 to 68 years with a mean age of 47.0 years (SD, 8.2). The mean age of men (44.6 years) was similar to that of women (47.4 years). The percentage of nurse practitioners aged 50 and over was 37.7%. Age and employment status were significantly related (r = +0.157; n = 202; P = 0.0026), with the proportion not employed as nurse practitioners increasing with age, although the proportion actively looking for nurse practitioner employment was similar across all age groups.

Nurse practitioner authorisation

Nurse practitioners were formally authorised in Australia in 2000, therefore the range of years authorised in 2007 was from 0 to 7. The mean length of time nurse practitioners were authorised was 1.9 years (SD, 1.6). About one-quarter (49; 24.7%) of responding nurse practitioners had been authorised for less than 1 year. Very few nurse practitioners were authorised for 5 or more years (10; 5.0%).

Since authorisation, the average time worked as nurse practitioners was 15.2 months (SD, 16.2; n = 200). The minimum number of months worked was zero and the maximum 72. One-fifth of the respondents (44; 22.0%) had never worked as a nurse practitioner; 29% (58) had worked up to 11 months; 22% (44) had worked between 12 and 23 months; and the remaining 54 were employed for over 24 months. When those nurse practitioners who had never worked in the role were excluded, the average time worked as nurse practitioners was 19.5 months (SD, 16.0; n = 146).

3 Nurse practitioner clinical fields (*n* = 145)

Clinical field	No. (%)
Emergency	39 (26.9)
Mental health	12 (8.3)
Paediatrics	10 (6.9)
Continence/women's health	10 (6.9)
Oncology	9 (6.3)
Diabetes	7 (4.8)
Generalist/remote area	7 (4.8)
Renal	6 (4.1)
Wound management	6 (4.1)
Community/primary health	5 (3.4)
Neonatal	5 (3.4)
Aged care/rehabilitation	5 (3.4)
Cardiac	3 (2.1)
ICU liaison	3 (2.1)
Pain management	3 (2.1)
Hepatology	3 (2.1)
Other*	12 (8.3)
Total	145 (100)

*Clinical fields were: orthopaedics (2), respiratory (2), neurosurgery (2), young people's health (2), drug and alcohol (1), sexual health (1), transplantation (1) and acute care gastroenterology (1).

Two respondents were currently employed overseas as nurse practitioners. Regulation and roles are not consistent internationally, therefore these nurse practitioners were excluded from further analysis. The remaining results are based on the subset of respondents who stated that, at the time of the census, they were employed as nurse practitioners. Unless otherwise noted, this subset comprises 145 respondents (there were missing data for some items on the questionnaire).

Location of workplace

The majority of responding nurse practitioners were employed in New South Wales (Box 2). When the workplace locations were separated into metropolitan and non-metropolitan settings, most responding nurse practitioners worked in metropolitan areas (116; 81.2%). NSW had the most metropolitan-based nurse practitioners. Respondents from three states were employed in non-metropolitan areas at the time of the census; NSW, Western Australia and Victoria (Box 2).

The most common clinical fields in which nurse practitioners were employed are shown in Box 3. The Emergency Department was the most commonly reported nurse practitioner clinical field (39; 26.7%). Due to small numbers, further breakdown of clinical field by geographical location is not reported to protect respondent anonymity.

Allocation of tasks and patterns of practice

Respondents stated that the majority of their time was spent delivering direct patient care (61.5%) followed by administration (13.7%). Research (3.5%) and education of medical/allied health staff (3.3%) had the least time attributed in the prior working week (Box 4).

Almost all nurse practitioners reported referring clients to allied health services (144; 98.6%), to general practitioners (128; 87.7%) and to specialists within their own health service (126; 86.3%). Specialists outside the nurse practitioner's own health service (62; 42.5%) were reported least. Thirty-one nurse practitioners referred patients to other services including community organisations, mental health services, non-government organisations and dentists.

4 The mean percentage of time allocated to tasks within the nurse practitioner role (*n* = 145)

Task allocation	Mean % of time (SD)
Direct patient care	61.5 (21.8)
Administration	13.7 (12.6)
Patient education	9.6 (11.3)
Nurse education	6.8 (8.0)
Research	3.5 (5.6)
Medical/allied health education	3.3 (4.4)
Other, not specified	1.6 (5.5)
Total	100.0

5 Diagnostic tests relevant to responding nurse practitioners' practice (n = 145)

Diagnostic test	No. of nurse practitioners ordering (%)
Biochemistry	137 (92.3)
Haematology	132 (89.9)
Microbiology	128 (87.1)
Radiography	125 (85.0)
Ultrasound	88 (59.9)
Respiratory function	38 (38.9)
Psychological	36 (24.5)
Nuclear medicine	33 (22.4)
Cytology	30 (20.4)
Other*	20 (13.6)

* Other stated tests included electrocardiographs, electroencephalographs and pharmacological drug assays.

Box 5 provides an analysis of the type of diagnostic tests relevant to respondents' practice. The most common types of tests nurse practitioners reported as relevant to their practice were biochemistry (137; 92.3%), haematology (132; 89.9%), microbiology (128; 87.1%) and radiography (125; 85%).

Only 16 nurse practitioners (11.0%) stated that they had hospital admission privileges, although more had discharge privileges (42; 29.4%). All but 14 (9.5%) practising respondents indicated that they were covered by some form of professional indemnity insurance.

Limits to practice

The final census questions asked about limits to practice as a nurse practitioner.

One-quarter of employed nurse practitioners were still awaiting approval of some or all of their clinical protocols (34; 24.3%) and almost one-third (42; 30.4%) specifically stated that they were still awaiting approval to prescribe medications. A very high proportion of practising nurse practitioners identified considerable structural limits to their current clinical practice. Specifically, 78% (113/144) stated that not having Medicare provider numbers was extremely limiting to their practice and 71% (103/143) stated that not having authority to prescribe through the Pharmaceutical Benefits Scheme (PBS) was extremely limiting to their practice (both medians of 7 on scale of 1–7). Two-thirds of respondents (94/143; 66%) also identified that lack of legislative support limited their practice. Lack of ability to issue sick certificates and workers' compensation certification were identified as limits to practice by only 38 respondents (27.1%), but there was wide variation with the lack of these rights affecting some models much more, for example, emergency nurse practitioners, and others not at all.

Discussion

This first national census of Australian nurse practitioners has provided valuable information about a new level of health care services available to the Australian community and it has filled an important gap in workforce information. While there is a surfeit of polemical writing about health workforce issues both nationally and internationally, research on workforce issues remains sparse.[19,20] The nurse practitioner role is newly established in Australia and extends the role of the registered nurse (RN) through changes to scope of practice as well as increased rights protected through legislation. The very high census response rate has ensured that the findings provide the first reliable baseline research about the demographic profile and service patterns of Australian nurse practitioners close to the inception of this new service. Here, the census findings are critically analysed in the context of the current workforce literature. In addition, text data responses are included to support interpretation where relevant.

Comparison of the nurse practitioner profile with other authorised categories of Australian nurse

The mean age of nurse practitioners was slightly higher than that of other authorised categories (47.0 and 43.3 years, respectively).[21] This and the lack of nurse practitioners under 30 years of age reflect the

years of advanced clinical practice required for authorisation. The percentage of men authorised as nurse practitioners is twice that of men in other authorisation categories but remains low (15.8% and 8.7%, respectively).[21] Nurse practitioners are similar to other categories of the nursing workforce in that they are an older workforce that is female dominated.[21] These census results demonstrate that the most recent AIHW estimate of authorised nurse practitioners, at about 200 in 2004, was a considerable over-estimate for that time.[21]

Employment patterns

The census findings identified comparatively low employment of nurse practitioners in non-metropolitan areas (18.8%) although this is consistent with the employment distribution of all RNs.[21] There are no specific data on metropolitan and non-metropolitan RN employment ratios, but analysis of very recent national health workforce information suggests that the nursing workforce is relatively evenly distributed across major cities, regional and remote areas in contrast to the distribution of medical practitioners,[22] which is much higher in metropolitan areas.

It was disturbing to find that less than three-quarters of respondents were employed as nurse practitioners. This compares poorly with average overall RN employment of 86.3%.[21] In addition, we could find no explanation for why older nurse practitioners were less likely to be employed than their younger counterparts. Given the high level of educational preparation and clinical expertise manifest in nurse practitioners, underemployment in this highly skilled sector of the nursing workforce represents a waste of valuable human resources. Furthermore, it is not possible currently to present an accurate calculation of the resource implications of this under-usage due to the current limits to practice reported by so many nurse practitioners who are employed.

Patterns of practice and limits to practice

There has been considerable discussion in the media about the limits to nurse practitioner practice (for example, Australian Nursing Federation,[23] Cresswell,[24] and Steketee[25]). This study provides the first comprehensive national data estimating the extent and potential effects of those limits on patients, as directly reported by the nurse practitioners. It is clear that nurse practitioners are facing significant barriers to providing service in this reformative role. The barriers occur at the service level of nurse practitioner practice and the broader policy level of regulation of practice. Australian nurse practitioners are authorised through legislation at state level, to prescribe medication and to request diagnostic investigations within their specific specialty field and to refer patients to other health professionals. Furthermore, health departments around Australia have developed policy to support implementation of nurse practitioner roles. However, as this study demonstrates, application of these extended practice activities is frequently thwarted, resulting in restrictions to the effectiveness of the role.

As an example, nurse practitioners are authorised under state law to prescribe medications, but where those medications are eligible for a PBS subsidy[26] the patient will not receive a subsidy because regulation of the PBS falls under Commonwealth legislation, which does not currently recognise the nurse practitioner as a bona fide prescriber. A similar anomaly occurs with referrals for diagnostic tests or specialist consultations, since nurse practitioner referrals are not recognised by the Medicare Benefits Scheme (MBS), which also falls under Commonwealth legislation. Nurse practitioners are not currently eligible for a Medicare provider number:

> For some kinds of medical [sic] services, Medicare requires that the service be provided by a doctor who has been formally recognised as a specialist, and that another doctor has referred the patient to the specialist. If these requirements are not met, either no benefit is payable or the benefit is lower. In addition, for most pathology and diagnostic imaging services, Medicare benefits are paid only when another doctor has referred the patient to the doctor providing the pathology or imaging service.[27]

There are potential financial implications for any expansion of the list of health care profession-

als eligible to apply for PBS and MBS provider numbers. The PBS is one of the most successful pharmaceutical subsidy schemes in the world and it is important that the PBS be used responsibly. However, there is international and Australian evidence suggesting that nurse practitioners would be parsimonious in both their diagnostic and prescribing practices, but most of this research is limited to nurse practitioner candidates (for example, Nejedly et al[7]). Australian research is needed to fully test the clinical and economic outcomes of access to these Commonwealth subsidies for the patients of non-medical clinicians.

Lack of MBS and PBS provider numbers is primarily a problem for those nurse practitioners who provide health care in the community setting, since public hospitals are financed primarily through block funding not tied to particular health care practitioners. However, difficulties may arise when planning discharge or managing care across the continuum. As one participant, based in a private hospital, commented,

> [Without a provider number] I cannot make a referral or request a pathology test outside a hospital where most of the ambulatory care activities are now being conducted.

A further limitation to practice for nurse practitioners is access to approved protocols. Our results confirm that many currently employed Australian nurse practitioners still do not have approval for required protocols; a situation which has been described as controlling nurse practitioner practice.[28] Furthermore, as one respondent noted, this lack of approval has far-reaching implications for both the nurse practitioners and other health professionals with whom they work.

> Often the consultant doesn't have anything to do with my patients but an audit would show that he "ordered" the test. This raises questions of accountability and responsibility.

These restrictive practices are not confined to Australia. There are reports in the international literature that nurse practitioners are facing significant barriers to providing service in this reformative role.[17,29,30] The research literature is predominantly US based where, even in states that appear to legislate some degree of autonomous practice in prescription for certain medications for example, the requirements are often arduous and prevent or severely limit the nurse practitioner's ability to prescribe. A study by Kaplan et al[31] identified both external and internal barriers to the nurse practitioner role. These barriers were generally organisational or system generated and included employers who had additional requirements of the nurse practitioner role, thus representing organisational barriers from within the institutional setting. It is clear from the current census findings that there is considerable variation in the level of restriction across geographical and clinical boundaries in Australia too. This research provides evidence to support the extant literature on health workforce and the reform agenda[20,32] and the imperatives of the Productivity Commission.[12]

The current national public dialogue in response to initiatives such as the National Primary Health Care Strategy[33] is stimulating debate about who is the right health professional to meet a family's health care needs in a timely fashion and in the right location. As the federal Health Minister has been reported as stating:

> That may mean rethinking who the "right health professional" is in certain situations.[34]

It is important that new health care delivery models are formally evaluated to ensure both effectiveness and efficacy of practice and continued development of roles. This study has provided reliable information on which to base action and further investigation.

Limitations

Although this census had an excellent response rate, the rate of authorisation of Australian nurse practitioners is increasing rapidly, which may limit the external validity of findings from this census into the future. The census will be repeated in 2009 (that is, providing a 2-year interval since the last census) and the comparative data will provide important information about trends in the development of this new service.

Conclusions and recommendations

This is the first national census of Australian nurse practitioners which, with a response rate of 85%, provides very reliable information about this new service. At the time of the census, only two-thirds of authorised nurse practitioners were employed as such, representing considerable under-utilisation of this highly experienced sector of the health care workforce. Nurse practitioners who were employed reported that this under-utilisation continued within the role, being compounded by restrictions on practice through local and Commonwealth legislative difficulties and especially through lack of access to provider numbers for the PBS and MBS. Changes are needed urgently at all levels of governance, ranging from local health authorities to the Commonwealth Government, before meaningful studies of nurse practitioner clinical effectiveness and efficacy can be undertaken. Based on the results from this national census, interpreted in the context of current literature and planned Commonwealth health service initiatives, we recommend:

- more efficient utilisation of the current authorised nurse practitioner workforce through increased employment opportunities;
- legislative restructure to ensure concordance between state and federal laws, thus enabling nurse practitioners to practise to their full competence; and
- rigorous evaluation of the efficacy and clinical effectiveness of these new roles once fully implemented.

This study has provided new knowledge on which to base action and subsequent investigation. Further research is urgently required if the nurse practitioner, and other reformative models, are to be effective in influencing improved health service through workforce reform. Most importantly however, if the nurse practitioner role is not implemented fully then it runs the risk of being evaluated as an incomplete model and of being prematurely dismissed.

Postscript, September 2009

SINCE THE ORIGINAL SUBMISSION of this manuscript, there has been widespread national debate and federal government action addressing legislative barriers to utilising the potential of nurse practitioners and other health professionals in the Australian health care system. Such are the vagaries of the inevitable lead time between submission and publication of research in peer-reviewed journals: particularly problematic in a rapidly evolving field such as workforce reform. This additional piece bridges the findings and recommendations reported in the above paper and current developments in the field of workforce reform.

In 2009, all eight Australian jurisdictions have legislation protecting the title of "nurse practitioner", and each jurisdiction has amended legislation to facilitate extended practice privileges. When the census was undertaken in late 2007, only six jurisdictions had done so. As stated in our manuscript, these jurisdictional legislative amendments support extended practice but are not matched at the federal level, resulting in dissonance between state and federal legislation. The findings from the first census have provided empirical information for professional organisations and government departments to inform responses to senate enquiries and questions in parliament. In our paper we recommended "legislative restructure to ensure concordance between state and federal laws".

Our study finding, that emphasised serious limits to practice for employed nurse practitioners, was acknowledged by the Federal Minister for Heath, Nicola Roxon, in November 2008 at the annual conference of the Australian College of Nurse Practitioners. At the time of writing our manuscript in mid 2008, these limits to practice were also identified through debate engendered by the National Primary Health Care Strategy. Since then we have seen the National Health and Hospitals Reform Commission deliver a report that argues for removal of some of the limits to practice experienced by health professionals other than medical practitioner. The Labor Government announced, as part of the 2009–10 federal budget, that it would facilitate nurse practitioner and midwife access to provision of services funded under the Commonwealth Medicare Benefits Schedule (MBS) and to prescriptions of

medications that are subsidised under the Pharmaceutical Benefits Scheme (PBS). Finally, this access to PBS and MBS is now being introduced through the Health Legislation Amendment (Midwives and Nurse Practitioners) Bill 2009, which at the time of writing is under review by a Senate Community Affairs Legislation Committee Inquiry.

The national census reported here has recently been repeated by the research team and the data are currently being analysed. However, we can report that there has been nearly a 100% increase in the number of authorised nurse practitioners in Australia since the initial census. The rapid adoption of this workforce reform model by clinicians and health service planners indicates that current efforts by the federal government to broaden access to health service subsidies is in accord with the imperatives for equity and timely access to service delivery for the Australian health care consumer.

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Competing interests

The authors declare that they have no competing interests.

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