

## The status of Australian nurse practitioners: the second national census

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### Abstract

**Objectives.** To profile Australian nurse practitioners and their practice in 2009 and compare results with a similar 2007 census.

**Methods.** Self-administered questionnaire.

**Results.** A total of 293 nurse practitioners responded (response rate 76.3%). The majority were female ( $n = 229$ , 81.2%); mean age was 47.3 years (s.d. = 8.1). As in 2007, emergency nurse practitioners represented the largest clinical specialty ( $n = 63$ , 30.3%). A majority practiced in a metropolitan area ( $n = 133$ , 64.3%); a decrease from 2007. Consistent with 2007, only 71.5% ( $n = 208$ ) were employed as a nurse practitioner and 22.8% ( $n = 46$ ) were awaiting approval for some or all of their clinical protocols. Demographic data, allocations of tasks, and patterns of practice remained consistent with 2007 results. 'No Medicare provider number' ( $n = 182$ , 91.0%), 'no authority to prescribe using the Pharmaceutical Benefits Scheme' ( $n = 182$ , 89.6%) and 'lack of organisational support' ( $n = 105$ , 52.2%) were reported as 'limiting' or 'extremely limiting' to practice.

**Conclusions.** Our results demonstrate less than satisfactory uptake of the nurse practitioner role despite authorisation. Barriers constraining nurse practitioner practice reduced but remained unacceptably high. Adequate professional and political support is necessary to ensure the efficacy and sustainability of this clinical role.

**What is known about the topic?** The nurse practitioner is a developing new model of healthcare delivery that performs an advanced clinical role and is becoming increasingly important in the overburdened Australian healthcare system. Our census conducted in 2007 indicated that nurse practitioners perceived many barriers to their practice and were underutilised in the Australian healthcare workforce, specifically because of their inability to prescribe medications.

**What does this paper add?** This paper provides a second census of Australian nurse practitioners in 2009. Similar to the results in 2007, the study indicates that nurse practitioners remain underutilised, with many unable to perform roles within their defined scope of practice because of limitations, such as inability to prescribe medications, lack of a Medicare provider number and awaiting approval for clinical protocols. Lack of support from within healthcare organisations and the nursing profession also were found.

**What are the implications for practitioners?** Nurse practitioners are not being utilised to their maximum clinical capacity despite increasing pressures on the health system. Many of the barriers to nurse practitioner practice that were flagged in 2007

remained issues in 2009. It is hoped the current legislative reform through the *Health Legislation Amendment (Midwives and Nurse Practitioners) Act 2010 (Cth)* will adequately address these issues.

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## Introduction

Nurse practitioners play an increasingly important part in the delivery of modern healthcare. In 2009, the Australian Federal Government committed AU\$59.7 million to expand the role of the nurse practitioner within the Australian healthcare system.<sup>1</sup> Such an investment highlights the urgent need for a clearer understanding of the evolution of nurse practitioner practice in Australia.

A nurse practitioner is an advanced clinical role that has responsibility for assessment and management of clients, including the direct referral of patients, prescribing medications and ordering diagnostic investigations in both an autonomous and collaborative context (ANMC 2009, p. 4).<sup>2</sup> The first nurse practitioner was authorised in New South Wales in 2000; to date eight States and Territories in Australia have nurse practitioners. All States in Australia now have legislation protecting the title of nurse practitioner and their associated extended practice privileges.

The Australian Nurse Practitioner Project (AUSPRAC) was a three-phased project designed to inform Government, health service managers and clinicians on the status of the nurse practitioner service in Australia. The project aimed to address the dearth of information about authorised nurse practitioners and their practice in Australia.<sup>3</sup> Phase One of AUSPRAC comprised two national surveys, the first of which was undertaken in late 2007 and was the first national census exploring the demography, scope of practice and barriers to nurse practitioner service throughout Australia.<sup>4,5</sup> The second phase involved undertaking work sampling and case studies to investigate the intersection of the nurse practitioner role in the healthcare team and examine work patterns.<sup>6,7</sup> Phase three of the study has examined patient outcomes after nurse practitioner intervention.

Key findings arising from the first national census of nurse practitioners highlighted the under-utilisation of authorised nurse practitioners in the healthcare workforce and, in particular, the under-utilisation of their advanced practiced skills for their patients. Less than three-quarters of authorised nurse practitioners (72.0%) were employed as nurse practitioners; older authorised nurse practitioners were significantly less likely to be employed compared to their younger colleagues and the majority (81.2%) of authorised nurse practitioners were employed in metropolitan areas. It was unclear from the census why 28% of authorised nurse practitioners were not working as nurse practitioners. However, results in general suggested a squandering of a highly experienced and expensive -to-train sector of the Australian healthcare workforce.<sup>4</sup>

In 2007, employed nurse practitioners considered their practice to be extremely limited by not having access to a Medicare Benefits Scheme provider number (78%) and not having access to rebates for medications under the Pharmaceutical Benefits Scheme (71%). Despite having State authority to autonomously

prescribe medications and order diagnostic tests (within their defined scope of practice), without participation in these federal schemes, the cost to the patient can be very expensive and may have limited the nurse practitioner prescribing medications or ordering tests.<sup>4</sup> This suggested their capacity to care for patients to the full extent of the nurse practitioner role as defined by legislation may have been seriously compromised.

In 2008, the newly elected federal Labor Government established the National Health and Hospitals Reform Commission (NHHRC) to review Australia's healthcare delivery systems. The aim of the NHHRC was to 'develop a long-term health reform plan for Australia'.<sup>8</sup> The NHHRC report was released in June 2009 and consisted of 123 recommendations; two of which concerned the practice and regulation of nurse practitioners. First, the NHHRC supported national registration for healthcare professions (including nurse practitioners), replacing regulation and legislation at the State level. The NHHRC saw this as leading to more nationally consistent standard of practices. Second, and more importantly, the NHHRC recommended that Medicare rebates and PBS subsidies should apply to nurse practitioners consistent with their defined scopes of practice. To access these benefits, the NHHRC recommended nurse practitioners demonstrate they work in collaborative team models of care with general practitioners, specialists or obstetricians (NHHRC, June 2009).<sup>8</sup>

The *Health Legislation (Midwives and Nurse Practitioners) Bill 2009* was introduced to Federal Parliament for consideration in the same month the NHHRC report was released.<sup>9</sup> This Bill aimed to act on the NHHRC recommendations enabling nurse practitioners access to Medicare rebates and Pharmaceutical Benefits Scheme (PBS) subsidies. Given that lack of access to these schemes were identified as significant limitations to their practice by nurse practitioners in the first national census, the proposed legislation will be particularly welcomed and relevant.<sup>4</sup> This Bill was passed by the Senate on the 16 March 2010 with amendments that specified nurse practitioners are required to demonstrate collaborative arrangements with medical practitioners in order to access the new proposed arrangements.<sup>10</sup>

This paper reports results from a repeat of the 2007 national nurse practitioner census undertaken in 2009 as part of the AUSPRAC suite of studies. The second national census aimed to profile nurse practitioners and their practice in Australia in 2009 and to descriptively compare these to the data from 2007.

## Method

The second national census was conducted from May 2009 to July 2009. All Australian nurse practitioners who were authorised to practice in Australia at that time were eligible to participate. As in the 2007 survey,<sup>4</sup> the registering authorities were asked to distribute the survey package on behalf of the researchers. The population numbers were obtained separately from each Australian nurse registering authority and used to calculate the study

response rate. In South Australia, the registering authority were unable to distribute the surveys on behalf of the researchers, hence nurse practitioners in South Australia were recruited by advertisements placed on the Australian College of Nurse Practitioners website and by word-of-mouth (Snowballing technique).<sup>11</sup> Interested nurse practitioners from South Australia then contacted the researchers to request a survey package.

The initial survey package contained a covering letter explaining the purpose of the study, a plain language statement, a copy of the questionnaire and a reply-paid envelope. The second survey package contained reminder letters and were sent 14 days after the initial survey. The third survey packages were sent 14 days after the reminder letters.

Ethical approval was granted by Queensland University of Technology, James Cook University and the Australian Catholic University.

### Instrument

Our study used the instrument developed and previously described in full in the first national census.<sup>4</sup> Some minor changes to six items in the original 2007 questionnaire were made to aid clarity as a result of the unanticipated responses during the first census. These changes have been described elsewhere.<sup>6</sup>

In brief, the 14-page, self-administered questionnaire first requested demographic data, which were based on the Nursing and Midwifery Labour Force Census conducted annually by each State and Territory nurse registering authority (9 questions).<sup>12</sup> Next, nurse practitioners were asked about general nurse registration and nurse practitioner authorisation (9 questions). Following this, we examined the nurse practitioner employment profile asking about their principal place of work, clinical fields and time spent on role responsibilities (16 questions). Next, we requested information about nurse practitioner's clinical practice, specifically, whether practice was determined by protocols; nurse practitioner referral patterns, the diagnostic tests ordered, whether they had hospital admission and discharge privileges and their arrangements for professional indemnity insurance (12 questions). Finally, using a seven-point Likert scale ranging from 'not at all limiting' to 'extremely limiting', we examined limitations to current practice (8 questions).

### Data analysis

Data were analysed using SPSS 17.0 (SPSS Inc., Chicago, IL). Frequencies were calculated for key variables to examine the current profile of nurse practitioners. As a sub-group of nurse practitioners completed both 2009 and 2007 survey, significance testing to evaluate changes over time and thus treating these results as independent samples, was precluded.

### Results

#### Current profile of Australian nurse practitioners

There were 408 questionnaires distributed to nurse practitioners in the current study. Of these, 24 were returned to sender. Questionnaires were received from 293 participants, resulting in a response rate of 76.3%. Approximately half the participants in the current survey ( $n = 149$ , 50.9%) entered the study in 2009 and did not participate in the 2007 census.

### Demographics

There were 202 nurse practitioners who participated in the 2007 census. Of these, 144 (71.3%) also completed the current survey. Of those who completed the 2007 census, there was no statistical difference between responders and non-responders to the 2009 census for age, sex, years since becoming a registered nurse, years authorised as a nurse practitioner, whether they had worked as a nurse practitioner in the previous week or pathway to authorisation. However, a statistically significant difference was found for State of residence ( $\chi^2_3 = 10.38$ ,  $P = 0.016$ ) and State first authorised as a nurse practitioner ( $\chi^2_3 = 9.96$ ,  $P = 0.019$ ). Specifically, 58% ( $n = 11$ ) of 2007 survey participants from South Australia did not respond to the second survey, which was more than twice the attrition rate demonstrated in any other State; however, the absolute numbers involved were small.

The majority of participants were female ( $n = 232$ , 81.4%). The mean age of participants was 47.3 years of age (s.d. = 8.1) with 37.7% ( $n = 107$ ) aged over 50. Approximately one-third of nurse practitioners resided in NSW ( $n = 88$ , 30.8%), with Western Australia ( $n = 66$ , 23.1%) and Queensland ( $n = 66$ , 23.1%) the next most common States in which nurse practitioners resided. In contrast to 2007, there was nurse practitioner representation from the Northern Territory ( $n = 6$ , 2.1%). Almost two-thirds of the total 2009 participants were employed in a metropolitan area ( $n = 133$ , 64.3%); however, this was a decrease from 2007 in which 81.8% ( $n = 117$ ) of participants reported working in a metropolitan area (Table 1). Thirteen participants (6.4%) reported being authorised in two States.

### Authorisation

Participating nurse practitioners had worked a mean of 22.5 years (s.d. = 8.2) as a registered nurse or nurse practitioner (in comparison an average of 22.3 years (s.d. = 8.0) in 2007).

**Table 1. Nurse practitioner demographics and authorisation**

	2007 <i>n</i> (%)	2009 <i>n</i> (%)
Sex	<i>n</i> = 202	<i>n</i> = 285
Male	32 (15.8)	53 (18.6)
Female	170 (84.2)	232 (81.4)
Location	<i>n</i> = 202	<i>n</i> = 286
New South Wales	86 (42.6)	88 (30.8)
Western Australia	47 (23.3)	66 (23.1)
Queensland	14 (6.9)	66 (23.1)
Victoria	24 (11.9)	37 (12.9)
South Australia	19 (9.4)	12 (4.2)
Australian Capital Territory	11 (5.4)	10 (3.5)
Northern Territory	0 (0)	6 (2.1)
Overseas	1 (0.5)	1 (0.3)
Citizenship	<i>n</i> = 202	<i>n</i> = 286
Australian citizen	191 (94.6)	278 (97.2)
Permanent or temporary resident	11 (5.4)	8 (2.8)
Pathway to authorisation	<i>n</i> = 199	<i>n</i> = 275
Nurse practitioner postgraduate degree	80 (40.2)	128 (46.5)
Nurse practitioner postgraduate degree and portfolio	52 (26.1)	72 (26.2)
Portfolio and interview	67 (33.7)	75 (27.3)

Participants had worked as a nurse practitioner for a mean of 25.5 (s.d.=20.3) months. This is an increase from 2007 where nurse practitioners reported they had worked a mean of 16.0 months (s.d. = 18.3).

### Employment profile

In 2009, 71.5% ( $n = 208$ ) of participants were employed as a nurse practitioner; this percentage was similar to that in 2007 ( $n = 145$ , 71.8%). Of those employed as a nurse practitioner, 72.6% ( $n = 151$ ) worked full-time in their nurse practitioner role and 11.1% ( $n = 23$ ) worked in a dual role. Again, of those who were employed as a nurse practitioner, the majority ( $n = 190$ , 91.3%) reported that their principal nurse practitioner job was a permanent position, whereas 6.3% ( $n = 13$ ) were employed on a contractual basis. Participants belonged to a median of three professional organisations with 5.6% ( $n = 16$ ) reporting that they were not a member of any professional organisation.

All further results relate to those nurse practitioners who were employed as such ( $n = 208$ ). As in 2007, the most highly reported nurse practitioner clinical speciality was emergency ( $n = 63$ , 30.3%), followed by renal ( $n = 13$ , 6.3%), and then, jointly, mental health ( $n = 12$ , 5.8%), continence, women's health and urology ( $n = 12$ , 5.8%), and community and primary health ( $n = 12$ , 5.8%). The largest increases in nurse practitioner speciality were in community and primary health (2007:  $n = 5$ , 3.4%; 2009:  $n = 12$ , 5.8%) and aged care and rehabilitation health (2007:  $n = 5$ , 3.4%; 2009:  $n = 11$ , 5.3%) (Table 2).

**Table 2. Clinical fields for those currently working as a nurse practitioner**

Where percentages do not equal 100%, numbers were rounded

	2007 ( $n = 145$ ) $n$ (%)	2009 ( $n = 208$ ) $n$ (%)
Emergency	39 (26.9)	63 (30.3)
Mental health	12 (8.3)	12 (5.8)
Paediatrics	10 (6.9)	11 (5.3)
Continence, women's health and urology	10 (6.9)	12 (5.8)
Oncology and palliative care	9 (6.3)	9 (4.3)
Diabetes	7 (4.8)	5 (2.4)
Generalist/remote area	7 (4.8)	11 (5.3)
Renal	6 (4.1)	13 (6.3)
Wound management	6 (4.1)	7 (3.4)
Community/primary health	5 (3.4)	12 (5.8)
Neonatal	5 (3.4)	5 (2.4)
Aged care/rehabilitation	5 (3.4)	11 (5.3)
Cardiac	3 (2.1)	9 (4.3)
ICU liaison	3 (2.1)	2 (1.0)
Pain management	3 (2.1)	4 (2.0)
Hepatology	3 (2.1)	2 (1.0)
Other <sup>A</sup>	12 (8.3)	20 (9.6)

<sup>A</sup>Clinical fields were: orthopaedics (2007,  $n = 2$ ; 2009,  $n = 1$ ); respiratory (2007,  $n = 2$ ; 2009,  $n = 2$ ); neurosurgery (2007,  $n = 2$ ; 2009,  $n = 1$ ); young people's health (2007,  $n = 2$ ; 2009,  $n = 2$ ); drug and alcohol (2007,  $n = 1$ ; 2009,  $n = 2$ ); sexual health (2007,  $n = 1$ ; 2009,  $n = 5$ ); transplantation (2007,  $n = 1$ ; 2009,  $n = 1$ ); acute care gastroenterology (2007,  $n = 1$ ; 2009,  $n = 0$ ); midwifery (2007,  $n = 0$ ; 2009,  $n = 3$ ); chronic disease management (2007,  $n = 0$ ; 2009,  $n = 2$ ) and haematology (2007,  $n = 0$ ; 2009,  $n = 1$ ).

### Patterns of clinical practice

The median percent of time participants spent delivering direct patient care was 67.5%. This was followed by administration and management (median time 10.0%), education of patients (median time 5.0%), education of nurses (median time 5.0%), and education of medical and allied health colleagues (median time 4.0%). Worryingly, nurse practitioners reported that only 1.5% of their time was spent undertaking research (Table 3).

There were minimal changes to the test ordering behaviour from 2007 and 2009. The majority of nurse practitioners reported ordering biochemistry ( $n = 190$ , 93.1%), haematology ( $n = 190$ , 93.1%), microbiology ( $n = 174$ , 85.3%), radiography ( $n = 173$ , 84.8%) and ultrasound tests ( $n = 140$ , 68.6%) (Table 3). Almost all nurse practitioners reported referring clients to allied health services ( $n = 200$ , 97.6%), whereas 83.4% ( $n = 171$ ) reported referring to general practitioners and 86.3% ( $n = 177$ ) to other specialists within their own health service. Referral to specialists outside their own health service was lower ( $n = 99$ , 42.5%) (Table 3).

Less than one-fifth of nurse practitioners reported having admission privileges ( $n = 37$ , 18.4%) although this was a slight increase from the 2007 data ( $n = 16$ , 11.0%). Almost one-third reported having discharge privileges ( $n = 64$ , 32.2%), compared to 29.4% ( $n = 42$ ) in 2007 (Table 3).

Approximately 20% of participants were still waiting on approval for some or all of their clinical protocols ( $n = 46$ , 22.8%) compared to  $n = 34$  (24.3%) in 2007, whereas almost one-third reported working under clinical protocols but still awaiting approval to prescribe ( $n = 55$ , 27.9%) compared to 30.4% ( $n = 42$ ) in 2007 (Table 3).

### Limits to practice

The majority of participants reported that they considered the barriers of 'no Medicare provider number' ( $n = 182$ , 91.0%) and 'no authority to prescribe medications through the Pharmaceutical Benefits Scheme' ( $n = 182$ , 89.6%) as 'limiting' or 'extremely limiting' to their practice. Over two-thirds regarded 'lack of legislative support' ( $n = 155$ , 77.5%) and 'no authority to issue workers compensation certificates' ( $n = 121$ , 62.1%) as 'limiting' or 'extremely limiting' to their practice. Over half of participants identified 'lack of organisational support' ( $n = 105$ , 52.2%), and, more specifically, 'lack of support from within the nursing profession' ( $n = 117$ , 58.2%) as 'limiting' or 'extremely limiting' to their practice. Less than half of participants reported 'no authority to issue sick certificates' ( $n = 79$ , 43.1%) and 'limits set by professional indemnity insurance' ( $n = 70$ , 38.6%) as 'limiting' and 'extremely limiting' to their practice (Table 4).

### Discussion

The results of the present census of Australian nurse practitioners provide valuable information on the development and utilisation of this innovative healthcare model in the unique context of the Australian healthcare infrastructure. Internationally, the lack of uniformity in nurse practitioner models of care and clinical and statutory protocols has inhibited comparative research between the countries who have ostensibly implemented this role.<sup>3</sup> Emergency remains the most common clinical field in which Australian nurse practitioners are employed ( $n = 63$ , 30.3%), which clearly

**Table 3. Patterns of clinical practice**

	2007	2009
	Median percentage of time	
Task allocation	(n = 145)	(n = 205)
Direct patient care	60.0	67.5
Administration and management	10.0	10.0
Education of patients	10.0	5.0
Education of nurses	5.0	5.0
Education of medical or allied health colleagues	0.5	4.0
Research	0.0	1.5
Other	0.0	0.0
	<i>n</i> (%)	<i>n</i> (%)
Diagnostic tests ordered	(n = 145)	(n = 204)
Biochemistry	137 (92.3)	190 (93.1)
Haematology	132 (89.9)	190 (93.1)
Microbiology	128 (87.1)	174 (85.3)
Radiography	125 (85.0)	173 (84.8)
Ultrasound	88 (59.9)	140 (68.6)
Respiratory function	38 (38.9)	54 (26.5)
Psychological	36 (24.5)	56 (27.5)
Nuclear medicine	33 (22.4)	57 (27.9)
Cytology	30 (20.4)	56 (27.5)
Other <sup>A</sup>	20 (13.6)	27 (13.2)
Patterns of referral by nurse practitioners to other providers	(n = 146)	(n = 205)
Allied health services	144 (98.6)	200 (97.6)
General practitioners	128 (87.7)	171 (83.4)
Specialists within their own health service	126 (86.3)	177 (86.3)
Specialists outside their own health service	62 (42.5)	99 (48.3)
Other <sup>B</sup>	31 (21.4)	41 (20.0)
Details of clinical practice <sup>C</sup>		
Participants with admission privileges	16 (11.0)	37 (18.4)
Participants with discharge privileges	42 (29.4)	64 (32.2)
Participants waiting on approval for some or all clinical protocols	34 (24.3)	46 (22.8)
Participants working under clinical protocols but awaiting approval to prescribe	42 (30.4)	55 (27.9)

<sup>A</sup>Others stated tests included electrocardiographs, electroencephalographs and pharmacological drug assays.

<sup>B</sup>Other included community organisations, mental health services, non-government organisations and private specialists.

<sup>C</sup>Details of clinical practice denominators vary for each question within this category.

**Table 4. Limitations and enablers for practicing nurse practitioners**

Where percentages do not equal 100%, numbers were rounded

	Total	2007			Total	2009		
		Not at all limiting <i>n</i> (%)	Limiting <i>n</i> (%)	Extremely limiting <i>n</i> (%)		Not at all limiting <i>n</i> (%)	Limiting <i>n</i> (%)	Extremely limiting <i>n</i> (%)
No Medicare provider number	<i>n</i> = 143	10 (7.0)	21 (14.7)	112 (78.3)	<i>n</i> = 200	18 (9.0)	53 (26.5)	129 (64.5)
No authority to prescribe through the Pharmaceutical Benefits Scheme	<i>n</i> = 142	11 (7.8)	29 (20.4)	102 (71.8)	<i>n</i> = 203	21 (10.4)	63 (31.0)	119 (58.6)
Lack of legislative support	<i>n</i> = 144	24 (16.7)	44 (30.6)	76 (52.7)	<i>n</i> = 200	45 (22.5)	78 (39.0)	77 (38.5)
No authority to issue workers compensation certificates	<i>n</i> = 141	55 (39.0)	35 (24.8)	51 (36.2)	<i>n</i> = 195	74 (37.9)	51 (26.2)	70 (35.9)
Lack of organisational support	<i>n</i> = 146	53 (36.3)	61 (41.8)	32 (21.9)	<i>n</i> = 201	96 (47.8)	69 (34.3)	36 (17.9)
Lack of support from within the nursing profession	<i>n</i> = 146	54 (37.0)	62 (42.5)	30 (20.5)	<i>n</i> = 201	84 (41.8)	85 (42.3)	32 (15.9)
No authority to issue sick leave certificates	<i>n</i> = 140	76 (54.3)	37 (26.4)	27 (19.3)	<i>n</i> = 183	104 (56.8)	46 (25.1)	33 (18.0)
Limits set by professional indemnity insurance	<i>n</i> = 138	91 (65.9)	45 (32.6)	2 (1.5)	<i>n</i> = 181	111 (61.3)	56 (30.9)	14 (7.7)

differentiates the Australian model from the family practice role most common in the United States and Canada.<sup>13</sup>

The increasing number of nurse practitioners receiving authorisation through the completion of a degree suggests a more

clearly defined pathway to becoming a nurse practitioner in Australia. This is important to the sustainability of the nurse practitioner work force in terms of accessibility and uniformity of qualification and authorisation, considering 37.7% of nurse

practitioners who responded to the census were over 50 years of age.

Alarming, 22.8% ( $n=46$ ) of participants were waiting on approval for some or all of their clinical protocols. Although this represents a small decrease from 24.3% ( $n=34$ ) of participants in 2007, this is nonetheless indicative of the underutilisation of nurse practitioners and the bureaucratic barriers constraining nurse practitioner practice.

A slightly increased proportion of nurse practitioners appear to have admission privileges ( $n=16$ , 11.0% in 2007 to  $n=37$ , 18.4% in 2009) and discharge privileges ( $n=42$ , 29.4% in 2007 to  $n=64$ , 32.2% in 2009), although in absolute terms these numbers remain low. Although this is an improving trend, more nurse practitioners require this authority if the role is to be utilised to its optimal potential in promoting the efficiency of patient treatment and discharge within the already overburdened Australian healthcare system.

Task allocations, patterns of referral and test ordering behaviour demonstrated minimal changes, however, as these are inherently linked with the nurse practitioner clinical practice areas these are likely to change depending on how fast the nurse practitioner role expands within specific services. Notably, participants spent a median of 1.5% of their time undertaking research. Although this is a small improvement from 2007 in which participants reported spending no time on research, nurse practitioners represent the most senior nursing clinician role and the nursing profession must support and encourage them to undertake research.

Although in absolute terms there was a decrease in nurse practitioners' perception of barriers as 'limiting' and 'extremely limiting' from 2007 to 2009 including lack of authority to prescribe through the PBS ( $n=131$ , 92.2% in 2007,  $n=182$ , 89.6% in 2009), lack of Medicare provider number ( $n=133$ , 93.0% in 2007,  $n=182$ , 91.0% in 2009) and lack of legislative support ( $n=120$ , 83.3% in 2007,  $n=155$ , 77.5% in 2009), the number of nurse practitioners rating these as 'limiting' and 'extremely limiting' remains unacceptably high. How these data may change following the introduction of the *Health Legislation Amendment (Midwives and Nurse Practitioners) Act 2010 (Cth)*, anticipated in late 2010, requires future research on patterns of practice and nurse practitioner's perceived limitations of practice, especially considering 89.6% of participants considered a lack of legislative support as 'limiting' or 'extremely limiting' to their practice. Of major concern is a perceived lack of support within nurse practitioner's own organisation and also from within the nursing profession itself, with over half of participants describing both these factors as 'limiting' or 'extremely limiting' or to their practice. This is worrying both in terms of the development and evolution of the nurse practitioner role of a cohesive workforce without adequate internal and external professional support. Further, it is uncertain how the 'collaborative arrangements' mandated in the new legislation will be operationalised and whether or not, once implemented, how they will enhance or constrain the practice of the nurse practitioner. This amendment received criticism from the Australian College of Nurse Practitioners whose president at the time stated 'the AMA and all stakeholders will need to ensure that their approach is truly collaborative and not an exclusionary or gatekeeping role'.<sup>14</sup>

The substantial difference in response rate and attrition rate demonstrated in South Australia, where the Nursing and Midwifery Board of South Australia were unable to assist with survey distribution, reflects the difficulties of reaching populations without the assistance of the relevant regulatory body. This highlights the importance of collaboration between research and regulatory organisations in obtaining a robust sample of the relevant population for a census such as this.

## Conclusion

The role of the nurse practitioner in Australia is still developing and it is important that it is researched and critically evaluated in this formative stage to ensure the efficacy and sustainability of the clinical role, adequate professional and political support and to obtain optimal outcomes for healthcare consumers. In particular it will be important to follow the potential changes to practice resulting from access for nurse practitioners to MBS and PBS provider numbers. The stable employment status of NPs without these privileges, as documented from our two surveys, provides a strong baseline for continuing research on a national level, including a repeat census at a later date.

## Competing interests

The authors declare that no conflicts of interest exist.

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