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A snapshot of Australian nurse practitioners' extended practice activities

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Introduction

The Australian Nurse Practitioner Project (AUSPRAC) was initiated to examine the introduction of nurse practitioners into the Australian health service environment. The nurse practitioner concept was introduced to Australia over two decades ago and has been evolving since. Today, however, the scope of practice, role and educational preparation of nurse practitioners is well defined (Gardner et al, 2006). Amendments to specific pre-existing legislation at a State level have permitted nurse practitioners to perform additional activities including some once in the domain of the medical profession. In the Australian Capital Territory, for example 13 diverse Acts and Regulations required amendments and three new Acts were established (ACT Health, 2006). Nurse practitioners are now legally authorized to diagnose, treat, refer and prescribe medications in all Australian states and territories. These extended practices differentiate nurse practitioners from other advanced practice roles in nursing (Gardner, Chang & Duffield, 2007).

There are, however, obstacles for nurse practitioners wishing to use these extended practices. Restrictive access to Medicare funding via the Medicare Benefit Scheme (MBS) and the Pharmaceutical Benefit Scheme (PBS) limit the scope of nurse practitioner service in the private health sector and community settings. A recent survey of Australian nurse practitioners (n=202) found that two-thirds of respondents (66%) stated that lack of legislative support limited their practice. Specifically, 78% stated that lack of a Medicare provider number was 'extremely limiting' to their practice and 71% stated that no access to the PBS was 'extremely limiting' to their practice (Gardner et al, *in press*). Changes to Commonwealth legislation is needed to enable nurse practitioners to prescribe medication so that patients have access to PBS subsidies where they exist; currently patients with scripts which originated from nurse practitioners must pay in full for these prescriptions filled outside public hospitals.

This report presents findings from a sub-study of Phase Two of AUSPRAC. Phase Two was designed to enable investigation of the process and activities of nurse practitioner service. Process measurements of nurse practitioner services are valuable to healthcare organisations and service providers (Middleton, 2007). Processes of practice can be evaluated through clinical audit, however as Middleton cautions, no direct relationship between these processes and patient outcomes can be assumed.

Methodology

Study population

In Phase One of AUSPRAC, nurse practitioners who completed a national survey were invited to submit an expression of interest to participate in Phase Two. The majority (n=144) of nurse practitioners in Australia at that time registered to participate. From this pool a process of stratified random sampling by state and geographical location (metropolitan or non-metropolitan) selected 37 nurse practitioners who were invited to participate in this phase of the Project. Phase Two involved two separate but related studies, firstly, work sampling research that collected activity data from 30 of the invited 37 nurse practitioners around Australia and, secondly, case study research that involved collection of a range of data on the organisational and service impact of the nurse practitioner role. The case study component of Phase two recruited 11 nurse practitioners from the 37 who were invited to participate in Phase two studies. Data was collected between September 2008 and August 2009. The case study included collection of data from the nurse practitioners, other health care professionals in their team and patients. The sub-study reported here is drawn from data collected from consenting patients' health care records relating to nurse practitioner service.

Consecutive patients of the nurse practitioners were invited to enrol in the study and the first ten patients to consent were included. In some cases, it was not possible to secure the

enrolment of ten patients within the data collection period and thus the total number of patients was 96.

Instrument and Data Analysis

The instrument used in this study was adapted from a generic tool used for chart abstractions from a sample of patients in the ACT Nurse Practitioner Trial (ACT Health and the Nurses Board of the ACT, 2003 p138). Data from patient charts were collected retrospectively for a 30 day period. The sample included 96 data sheets. Information collected included presenting issues, number of visits, diagnostic investigations, therapeutic interventions, prescribed medications, and referrals recommended by the nurse practitioner. A descriptive analysis of the data was performed using Microsoft Excel 2007 (Microsoft, Redman, WA, USA).

Ethics

This study was approved by the Human Research Ethics Committees of all participating Universities and hospitals where this research was undertaken.

Results and Discussion

Assessment of extended practice in nurse practitioners was performed on data abstracted from clinical notes of 96 patients of 11 nurse practitioners. These nurse practitioners were recruited nationwide, two each from Victoria, Western Australia and New South Wales; and one from Queensland, South Australia and the Australian Capital Territory. Nine of the nurse practitioners worked in a hospital setting and two worked in the community. Nurse

practitioner service models included Emergency (2), Rural and Remote (2), Mental Health, Orthopaedics, Sexual Health, Women's Health, Chronic Disease (2) and Neonatal.

Diagnostic Investigations

Over half the patients (52%) in the study received at least one diagnostic investigation during the study period. There were on average 2.2 diagnostic investigations per patient. The number of investigations requested was relevant to the model of nurse practitioner service with a range of 0 to 5.9 investigations per patient. Two nurse practitioners did not request any diagnostic investigation for their patients enrolled in the study within the study timeframe.

The common types of diagnostic investigations requested are shown in Figure 1. Most requests from nurse practitioners were for haematology and biochemistry. Histology was not requested and only one request for cytology was made. The use of serology, microbiology and radiology diagnostic investigations were highly dependent on the type of nurse practitioner model. Serology investigations were limited to two of the nurse practitioners in the study and only four nurse practitioners requested radiology.

Nurse practitioners made extensive use of pathology requests, however it is not possible to determine the reason why they were used for example assessment for diagnosis, monitoring of chronic conditions or screening of vulnerable populations.

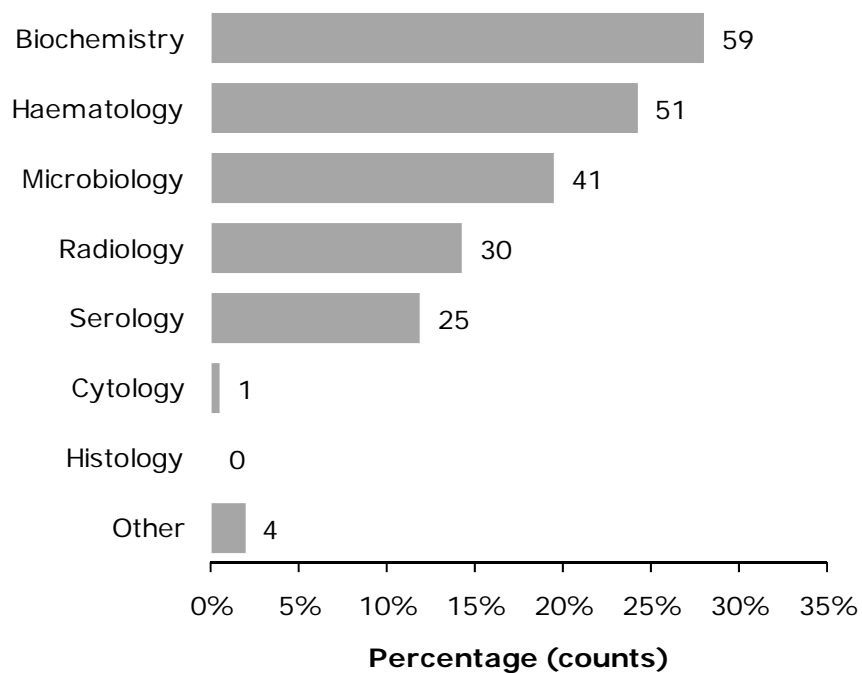


Figure 1: Diagnostic investigations requested by nurse practitioners (n=211 investigations)

Referrals

Nurse practitioners made referrals for 63.6% of patients in the study (see Figure 2) and all nurse practitioners in the study referred patients to other professionals and agencies. Rates of referral varied amongst the nurse practitioner models, from 1.6 referrals per patient down to less than 0.2 referrals per patient. Figure 2 lists the types of referrals made. One fifth of the nurse practitioner referrals were to a general practitioner and all these referrals were made by nine of the 11 participating nurse practitioners. Most of the referrals (85%) to medical specialists were made by three nurse practitioners, who referred 20% of the patients in the study. Another three nurse practitioners made only one referral to a medical specialist during the study period. All nurse practitioners who referred patients to medical specialists were based in a hospital setting. Forty percent of patients were referred to allied or other health

professionals. These included social workers, occupational therapists, physiotherapists, dentists, sexual health counsellors, pharmacists and wound care nurses. Over 10% of patients were referred to other agencies such as interpreter services, osteoporosis metabolic clinic, diabetes unit, community nursing service, hospital emergency.

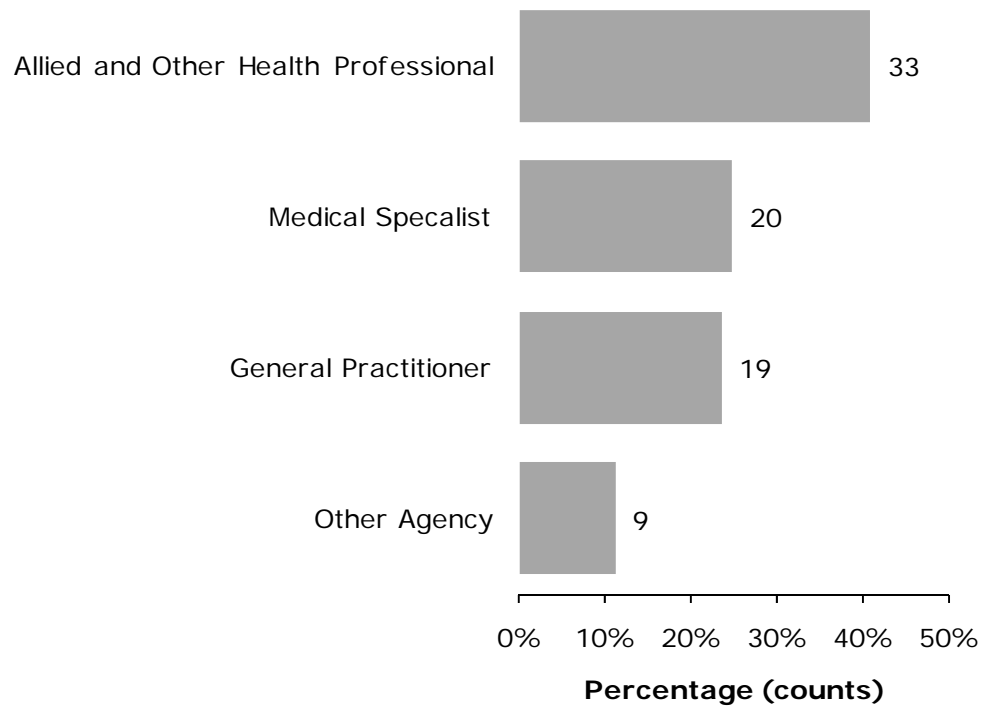


Figure 2: Referrals recommended by nurse practitioners (n=81 referrals)

Therapeutic Interventions

Overall 93.8% of patients received a therapeutic intervention from a nurse practitioner, averaging 3.7 interventions per patient in the 30 day period. The maximum number of interventions for one patient was 33, and eight patients received at least 10 interventions in the study period. Therapeutic interventions were classified as procedural, counselling and education, monitoring, social assistance, provisions with aids, hospital administration and others (Figure 3). Most common were counselling and education interventions. All nurse practitioners provided counselling and education, with 86.5% of patients receiving this type

of therapeutic intervention (with a range of 4.3 to 0.5 interventions per patient). Procedural interventions were also frequent and were performed on 43.7% of the patients; however three nurse practitioners did not perform any procedural interventions (range from 0.0 up to 3.1 procedures per patient). Only 5 nurse practitioners provided social assistance interventions and only seven nurse practitioners documented that they had monitored patients. Provision of aids and hospital admission of patients was rare.

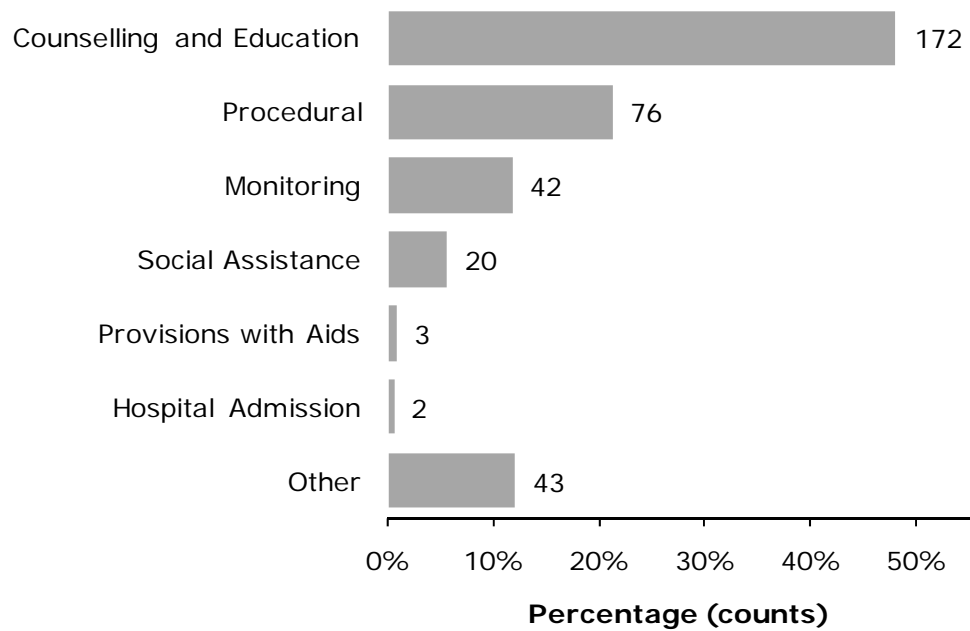


Figure 3: Therapeutic interventions performed by nurse practitioners (n=358 interventions)

Prescription of Medication

Just under 45% of patients received medication from a nurse practitioner, averaging 0.62 prescriptions per patient. During the study period, 59 prescriptions for medication were produced by the participating nurse practitioners. All but one nurse practitioner prescribed medications, with a range of 0-1.6 prescriptions per patient. Table 1 list all medications recommended by the nurse practitioners during the study. They are classified according to

their drug group. Most prescriptions were for antibiotics, narcotic analgesics and antifungals. Nine of the participating nurse practitioners were hospital based and thus were not restricted by the lack of access to PBS provider numbers in prescribing medication for their patients.

Table 1: Medications prescribed by nurse practitioners (n=59 prescriptions)

Drug Group	Number of Prescriptions
Antibiotics	11
Narcotic analgesia	9
Antifungals	5
Respiratory stimulant	4
Anti-anxiety agents	2
Antidepressants - SSRI	2
Antiemetics, antinauseants	2
Immunoglobulin - tetanus	2
Non-steroidal anti-inflammatory agents	2
Topical corticosteroids	2
Vaccine - Gardicil	2
Vitamin - folate	2
Anaesthetic	2
Anti-diarrhoeal	1
Antihypertensive	1
Antipsychotic agents	1
Antiviral	1
Beta-adrenergic blocking agents	1
Dextrose	1
Hormone contraceptive	1
Hypoglycaemic agents	1
Mineral - iron	1
Sedatives, hypnotics	1
Topical hormone	1
Topical ocular anti-infective preparation	1

Limitations

Drawing conclusions and generalisability from the findings of this study is subject to the limits of retrospective chart audits. It is not possible to comment on whether the use of these extended practice services was appropriate in terms of safety and effectiveness, other than that they occurred. Also, as most of the nurse practitioners (82%) in this study worked within the financially benign context of a hospital setting, the lack of their access to PBS and MBS appeared to have no financial consequence for their patients. Consequently this study, with its major focus on nurse practitioner service conducted within the financially protective confines of the public hospital setting masks the real significance of restrictions to practice for this reformative model of health service.

Conclusions

This study has provided a snapshot of the documented actions of a sample of nurse practitioner service. The findings from this study are useful in demonstrating the extended practice activities of a sample of Australian nurse practitioners. However these findings need to be read in the context of the holistic practice of nurse practitioners and the variability of service across different specialist models. The nurse practitioners in this sample readily referred patients to other clinicians and agencies; primarily used counselling and education as treatment modalities and whilst almost all nurse practitioners in the study prescribed medication these prescriptions were for less than 50% of their patients. These findings are tentative but provide a good basis to inform further research into nurse practitioner service and resource usage.

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