NURSE PRACTITIONERS: AN EVALUATION OF THE EXTENDED ROLE OF NURSES AT THE KIRKETON ROAD CENTRE IN SYDNEY, AUSTRALIA

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ABSTRACT

The aim of the present study was to formally evaluate the effectiveness, professional appropriateness and acceptability of the extended role of the nurse practitioner at the Kirketon Road Centre (KRC) in Sydney, Australia. Data collection consisted of client and staff surveys and case file review by two assessors (one medical and one nursing). This paper will report on one section of this research, namely the case file review section of the study. Total study subjects were 1046 'at risk' youth, sex workers and injecting drug users attending KRC for their primary health care needs between September 1994 and April 1995. Nurse practitioners (NP) saw 613 of the clients who presented over this period. The majority of these clients were women (77.3%). The majority of NP consults were related to STD (51%), gynaecological (17%) and hepatitis (16%) issues. The results demonstrated that nurse practitioners were professionally appropriate in all aspects of expected 'best practice' in over 95% of consultations.

INTRODUCTION

Context within which this study took place

The 1990s in Australia can be described as the decade of the emerging nurse practitioner. The broad aims of this movement were to recognise, measure and evaluate the skills of the nurse practitioner, to foster the retention of expert clinicians in their area of specialty, and to establish a system wherein these nurses could receive recognition of their status, function in an expanded nursing role and receive financial remuneration for their specialist skills. The areas of primary health and rural and remote nursing were key areas of focus.

The role of nurse practitioners in NSW was examined using a three-stage strategy of working parties and research projects spanning from 1992 to 1995. The three stages consisted of stage one (NSW Health Department, 1992) which investigated the role and function of nurse practitioners in NSW; stage two (NSW Health Department, 1993) which reviewed the role of nurse practitioners and examined ways in which to assess and implement the recommendations of the stage one working party; and stage three (NSW Health Department 1995) which examined evidence (through pilot projects such as this one) evaluating the competency, safety, efficiency and feasibility of nurse practitioners.

Definition of nurse practitioner

The title *nurse practitioner* 'is restricted to registered nurses who are authorised by the Nurses Registration Board of New South Wales under the Nurses Amendment (Nurse Practitioners) Act 1998 to practice as a nurse practitioner' (NSW Nurses Registration Board). A nurse practitioner is a registered nurse working at an advanced practice level leading into practice as an expert nurse, the characteristics of which would be determined by the context in which they have been accredited to practice (NSW Health Department 1998). Nurse practitioners in New South Wales (Australia) used this title *prior* to changes to the Nurses Act in 1998. Subsequent to these changes, nurses cannot use this title until they have fulfilled the requirements and have been registered as a nurse practitioner (NP) with the Nurses Registration Board.

Aims of this study

This study represents the first formal evaluation of the nurses' role at Kirketon Road Centre (KRC) in Sydney, Australia. This study broadly aimed to evaluate whether the nurse practitioner (NP) role was effective and clinically appropriate at KRC. The specific study aims were to describe the services provided by nurse practitioners at KRC, to assess whether nursing interventions were clinically appropriate for the clients receiving this service and to evaluate the extent to which nursing activities met the standards for 'best practice'. It was anticipated that the results would indicate whether modifications were required to the extended role of the NP and whether this extended role could be established in other primary health care (PHC) settings.

Background of nurse practitioners at Kirketon Road Centre

At the time of this study the Kirketon Road Centre (KRC) was a primary health care facility of the Sydney Hospital Complex (now named The Sydney Hospital and Sydney Eye Hospital). This centre (located in Kings Cross, Sydney) is primarily involved in the prevention, treatment and care of HIV/AIDS and transmissible infections among 'at risk' youth, sex workers and injecting drug users (IDUs).

Nurses have practiced within a multi-disciplinary team at KRC since the centre was established in 1987. During this time the nursing role has been developing and expanding to meet the needs of the target populations. Clinical services provided by the nurse practitioners during the time of this study included: assessment of primary health care needs, sexually transmitted disease (STD) screening of sex workers, Pap smears, family planning advice, venepuncture for HIV and hepatitis A, B and C, pre and post-test counselling, methadone administration and needle and syringe exchange. Nurse practitioners also staffed the 'AIDS Bus', an outreach program to street sex workers, 'at risk' youth and IDUs which operated seven nights a week. In this setting nurses were involved in assessment of primary health care needs, the provision of information and education regarding HIV and other transmissible infections and emergency management of opiate overdoses.

The extended nurse practitioner role at KRC developed in part in response to the difficulties in attracting medical officers to this area of public health. Possible factors contributing to this may have been that public health is not as well remunerated as other areas of medical practice and that the specific fields of substance abuse and sex industry workers have low status within the medical profession. As a consequence of a shortage of medical officers, the nurses' role at KRC was developed and extended to meet clients needs. The expansion of the nurse practitioner role at KRC also arose in response to perceived client needs for a streamlined service that would result in shorter waiting times. Nurses who had completed the Family Planning Nurse Practitioner Certificate and/or had training in sexual health and venereology were encouraged to extend their roles, with support and backup from the medical officers.

Clients service choice related to Kirketon Road Centre

Clients do not have to produce any personal identification in order to access health care at KRC. At the time of this study there were no other medical services in the area where clients were not required to provide identification, Medicare card or fee for service. Such requirements often prevented this client group from accessing health care as this marginalised and often chaotic population frequently do not have health care cards or money. This assured client anonymity and confidentiality and further enhanced acceptability of the service.

KRC has demonstrated that an anonymous, non-judgemental service facilitates access to primary health care services by marginalised populations. Other services are following suit by providing easier access through measures such as 'drop in' systems. This has enabled KRC to increasingly focus on the needs of the more marginalised clients.

LITERATURE REVIEW

A major early study on the role of Nurse Practitioners (NPs) in Canada (Spitzer et al 1974) revealed that the random substitution of family physicians by NPs resulted in no significant differences in patient outcomes in physical, social or emotion based measures. Mundinger (1980) warned that nurses must also demonstrate an expansion of their roles and the complementary and helpful value of their services 'rather than their ability to

assume basic medical care functions only' (p. 131). Almost two decades later critics of NPs say they are merely doing the work doctors don't want, but Allen (1998) states NPs are educated, autonomous professionals, developing *nursing* rather than quasi medical roles.

Mundinger et al (2000) conducted a randomised trial between August 1995 and October 1997 where NPs had the same authority, responsibilities, productivity and administrative requirements, and patient population as primary care physicians. They found that in an ambulatory care situation in which patients were randomly assigned to either NPs or physicians, and, patients' outcomes were comparable they reported that 'no significant differences were found in patients' health status (nurse practitioners vs physicians) at 6 months … No significant differences were found in health services utilisation after either 6 months or 1 year' (p.59, 2000).

US authors state that the nursing profession continues to debate the efficacy of blending or merging the clinical nurse specialist (CNS) and NP roles (Busen and Engleman, 1996). Establishment of managed care and the instability of the healthcare market have driven many CNSs in the USA into graduate programs to retool for more independent roles in primary care settings (Busen and Engleman, 1996). The same debate on the roles of CNSs, (titled clinical nurse consultants (CNCs) in New South Wales, Australia), and NPs is current in Australia and distinctions between muti-level CNCs with separate or additional career pathways for independent, acute care or primary health NPs may be the direction best suited to the current health care environment. Busen and Engleman (1996) state that in the US the roles varied mainly with respect to performing physical examinations, prescribing medications, performing and/or ordering laboratory tests, prescribing treatments, and making referrals. Busen and Engleman, (1996) cited Elder and Bullough (1990) in stating that the amount of time CNSs and NPs spent in direct patient care varied with 73% of time for NPs compared to 53% of time for CNSs. NPs were found to practice mainly in primary care settings while CNSs practiced in secondary or tertiary care settings, although roles overlapped in all settings.

A number of factors have been identified as barriers to the successful implementation of NPs. These include:

(i) lack of role clarification and unclear responsibility;
(ii) attitude towards the role and acceptance of the role by others;
(iii) restriction on the scope of practice; and
(iv) a high caseload (Dillon and George 1997; Kleinpell 1997; Sidani and Irvine, 1999).

The literature on protocols and policy development was examined to inform the evaluation of nursing practices at KRC prior to this study's commencement. Moniz (1992) raises concerns regarding the development of protocols and standards that are the maximum for ideal care as this may precipitate potential malpractice problems by setting unrealistic/unachievable standards. This cautions the importance of establishing infrastructure to support and assess NPs so that they are working within realistic standards with strategies in place to provide specific education and training where necessary (Offredy, 1998, 1999, 2000). Recent reports on NPs working in primary health care suggests that sexual health is an ideal area in which to develop protocols since 80% of clients have an uncomplicated sexually transmitted disease (Allen, 1998).

METHODOLOGY

Policies and procedures

The policies and procedures used for this study were those already in operation at KRC. They were developed collaboratively by both medical and nursing staff with qualifications and experience in the areas of sexual health, venereology, women's health, family planning, substance abuse, public health and general practice.

The policies and procedures cover the areas of triage, female and male sexual health screening, Pap smear, bi-manual examination, breast examination, pregnancy testing, emergency contraception, testicular examination, throat swabs, venipuncture, HIV pre and post-test counselling and treatment of genital warts and molluscum contagiosum.

Competency development

The competencies assessed in this project were developed by the clinical nurse consultant and the nursing unit manager of the Kirketon Road Centre in collaboration with the clinical nurse consultant, Sydney Sexual Health Centre, to provide for the special needs of nursing practice within the centre. They were modelled on the Australian Nursing Council Inc (ANCI) competencies. Further development of these competencies has been conducted in collaboration with appropriate professional associations such as ASHNA, the Drug and Alcohol Nurses Association (DANA) and the Australian Nursing Federation (ANF).

Appropriateness of the role of the Nurse Practitioner at KRC was assessed by reviewing clinical files and measuring:

i) appropriateness of consultation
ii) clinical judgement
iii) pathology requests
iv) treatment recommendation
v) referral

vi) documentation

Professional appropriateness of the Nurse Practitioner

In aiming for professional appropriateness of nurse practitioners working in this broad area of nursing practice, expertise in a number of areas was considered to be desirable prior to employment. These included skills in the area of sexual health and venereology, women's and reproductive health, nursing related to alcohol and other drugs, psychiatric nursing and at least three years post-registration experience.

Each nurse at KRC was assessed as competent in the following skills prior to performance without supervision: venepuncture, intake, including pre and post HIV test counselling, asymptomatic female screen, asymptomatic male screen, Pap smear, bi-manual examination, breast examination, treatment of genital warts, pregnancy testing and counselling, morning after pill administration, contraceptive consultation, microscopy interpretation of wet film and of gram stain, post termination of pregnancy checkup, methadone administration after assessment for intoxication, and needle and syringe exchange.

Evaluation methods

The evaluation study design was a descriptive cross-sectional investigation of nursing practice at KRC utilising pre-existing data collection forms and regular case file review by two assessors.

Over the period September 1994 to April 1995, the KRC operated clinics between the hours of 9.00am and 7.30pm. All clients attending the clinic on Wednesdays for either a nursing or a medical consultation were considered part of the study. Wednesday was selected as it was the optimal day to facilitate data collection requirements (due to other commitments of staff and structures of activities within the centre on other days).

At the time the study commenced, an average of 40 clients attended the clinic per day. It was considered that one day per week of data collection over an eight month period would result in a sample size sufficient for valid conclusions to be drawn.

As part of standard procedure, all client visits were recorded on a visit sheet. This sheet recorded client details, practitioner status, investigations undertaken and the services provided. A 'triage' form was also developed for the study. This was initially completed by the client upon arrival indicating reason for visit and arrival time and then the practitioner recorded when the client was actually seen and the length of the consultation.

A file review form was developed to assess the appropriateness of the consultation. The form was completed for each identified problem by two file reviewers, the clinical nurse consultant (CNC) and the medical unit manager (MUM) four weeks after a consultation thereby allowing time for any outcomes to be resolved.

Finally, upon completion of the data collection phase of the project, nurse practitioners were asked to reflect upon their understanding of the role of an NP, the purposes of the pilot project and what they thought the project meant for the nursing profession as a whole. Medical and counselling staff were also surveyed for their thoughts on the appropriateness of the NP role at KRC.

Characteristics of clients were analysed using the statistical package SAS (Version 6.04).

RESULTS

Demographic characteristics

Over the study period, a total of 1046 clients visits (including repeat attenders) were seen by Nurse Practitioners (613 clients) or medical officers (433 clients). Table 1 shows demographic characteristics of both Nurse Practitioner (NPs) and medical officer (MO) clients. The majority of clients seen by NPs were women (77.3%) with 21.4% men and eight (1.3%) transgender clients. Over half the NP clients (54.3%) were in the 20 to 29 year age range with 8% of clients aged 19 years or less. The largest proportion of clients seen by NPs were residents of the then Eastern Sydney Area Health Service

Table 1: Characteristics of clients attending KRC between 14th September 1994 and 26th April 1995 (n=1046)

		NP Consults		MO Consults	
		n	%	n	%
Sex	Female	474	77.3	220	50.9
	Male	131	21.4	201	46.5
	Transgender	8	1.3	11	2.5
Age groups	15 - 19 years	51	8.3	53	12.3
	20 - 24 years	175	28.5	164	38.0
	25 - 29 years	158	25.8	102	23.6
	30 - 34 years	129	21.0	60	13.9
	> 35 years	100	16.3	53	12.3
Identified target group *	Parlour sex worker	419	68.4	210	48.6
	Street sex worker	124	20.2	195	45.1
	Sex worker - NESB	30	4.9	13	3.0
	Injecting drug user	284	46.3	332	76.9
Area of residence	Eastern Sydney area	264	43.1	207	47.9
	Central Sydney area	65	10.6	27	6.3
	Northern Sydney	46	7.5	13	3.0
	Southern Sydney	18	2.9	8	1.9
	Western Sydney	12	2.0	7	1.6
	South Western Sydney	11	1.8	29	6.7
	Other health region	10	1.6	23	5.3
	Interstate	15	2.4	4	0.9
	Missing postcode †	172	28.1	111	25.7

* Not all clients had target group identified and clients may belong to more than one group

† Includes clients not providing a postcode and those with No Fixed Address

(43.1%).

Sixty-eight percent of NP clients identified as parlour sex workers, 20.2% identified as street sex workers and 46.3% identified as injecting drug users (IDUs). Nurse practitioners saw a higher proportion of parlour sex workers while medical officers were more likely to see IDUs and street sex workers.

Service provision

Table 2 outlines details of the services provided by both nurse practitioners (NPs) and medical officers (MOs). The majority of NP consults were related to STD (51%), gynaecological (17%) and hepatitis (16%) issues (predominantly vaccination). This pattern of service provision reflects the structure of KRC such that nurse practitioners perform the majority of routine sex worker screens thus freeing medical officers up for more complex clinical presentations. Routine sex worker STD screens are asymptomatic screens for gonorrhoea and chlamydia performed on a fortnightly basis. Every three months, blood is also taken for HIV and syphilis and hepatitis B and C where appropriate. KRC has detailed policies and procedures for routine screens which NPs follow.

About 30% of all NP consults involved serology for HIV and syphilis while 50% involved swabs for gonorrhoea and chlamydia. Hepatitis B and C serology was not performed as frequently on sex workers as on injecting drug users.

Table 2: Practitioner service

		NP Consults		MO Consults	
		n	%	n	%
Reason for presentation at KRC (n=766)	Sex worker checkup	210	87.9†	29	12.1
	Results only	84	80.8	20	19.2
	Pap pmear	33	86.8	5	13.2
	HIV test	89	76.7	27	23.3
	Medical condition	76	26.2	214	73.8
	Counselling	11	32.4	23	67.7
	Other *(e.g. pregnancy test, methadone, dental)*	32	60.4	23	39.6
Client waiting time*	0-10 minutes	132	48.7	53	41.4
	10-30 minutes	86	31.7	46	35.9
	> 30 minutes	53	19.6	29	22.7
Consultation times*	0-15 minutes	16	14.0	12	36.4
	15-30 minutes	44	38.6	13	39.4
	30 minutes-1 hour	44	38.6	6	18.2
	> 1 hour	10	8.8	2	6.1
Services provided (n=1317)	STD issues	264	43.1	207	47.9
	Gynaecological	65	10.6	27	6.3
	Hepatitis *(information, monitoring, vax)*	46	7.5	13	3.0
	General medical	18	2.9	8	1.9
	Counselling/ psychosocial	12	2.0	7	1.6
	Drug and alcohol issues	11	1.8	29	6.7
	HIV *(information, monitoring)*	10	1.6	23	5.3
Blood tests ordered	HIV	192	31.3	66	15.3
	Syphilis	190	31.0	61	14.1
	Hepatitis B	115	18.8	36	8.3
	Hepatitis C	54	8.8	31	7.2
Swabs taken	Chlamydia	302	49.3	49	11.3
	Gonorrhoea	301	49.1	53	12.3
	Wet film *(assessed at KRC)*	129	21.0	23	5.3
	Pap smear	74	15.6	19	4.4

† Percentages are percentages between NP and MO consults. All other percentages in table are calculated within either NP or MO consults.

* There was considerable data missing for both time client seen by practitioner and time client departed from service.

Table 3: Problems managed by nurse practitioners as identified through file review (n=501)

Identified problem	n	%
Routine screen	198	39.5
Results	67	13.4
STD issues *(e.g. herpes, STD information, penile lesion)*	48	9.6
Serology *(STS, HIV, hepatitis A/B/C, LFTs)*	39	7.8
General medical *(e.g. nausea, sore eyes, constipation, proctitis)*	36	7.2
Contraception issues	25	5.0
Hepatitis A and B vaccination	23	4.6
Pap smear	23	4.6
Pregnancy issues	17	3.4
Wounds/wound dressing	16	3.2
Gynaecological issues	16	3.2
Skin problems	12	2.4
Drug issues	8	1.6
Other	5	1.0

Table 4: Clinical review of NP management of each identified problem (n=501)

	AGREE		DISAGREE		N/A	
	n	%	n	%	n	%
CLINICAL ASSESSMENT						
Presenting problem documented clearly	315	97.8	7	2.2		
Relevant health history documented clearly	306	95.6	5	1.6	9	2.8
Allergy status documented	303	95.9	8	2.5	5	1.6
Current treatment documented	54	17.3	1	0.3	258	82.4
Results of physical examination documented	232	72.7	8	2.5	79	24.8
Clinical findings documented	235	74.6	5	1.6	75	23.8
Protocol/s followed	458	91.4	25	5.0	18	3.6
Deviations justified	11	2.2	14	2.8	474	95.0
CLINICAL MANAGEMENT PLAN						
Protocol followed	472	94.2	28	5.6	1	0.2
Deviations justified	19	3.8	16	3.2	466	93.0
Appropriate investigations recommended	325	65.1	9	1.8	165	33.1
Appropriate consultation documentation	472	95.0	25	5.0		
Appropriate associated documentation	378	75.8	93	18.6	28	5.6
Alternatives appropriately documented	22	4.5	6	1.2	464	94.3
Appropriate referral recommended	146	29.3	11	2.2	342	68.5
Appropriate follow up recommended	367	74.3	23	4.7	104	21.1
NP satisfied with consultation	363	96.5	13	3.5		
MO satisfied with consultation	363	96.5	13	3.5		
Change in clinical management recommended	29	6.1	304	63.7	144	30.2
REVIEW OF CLINICAL OUTCOMES						
Expected outcomes for all identified problems	350	90.7	20	5.2	16	4.1
Is managing medications well	75	19.4	10	2.6	301	78.0
Improvement in functional status	253	65.5	34	8.8	99	25.6
No significant clinical event from identified problem	365	94.6	5	1.3	16	4.1
NP satisfied with clinical outcomes or progress	375	97.2	3	0.8	8	2.1
MO satisfied with clinical outcomes or progress	375	97.2	3	0.8	8	2.1

Clinical assessment and decision making

For the purposes of the present report, only NP cases were reviewed. A total of 501 separate issues were identified and assessed through file review. The range of health issues managed by NPs are outlined in Table 3. The majority of the reviewed NP caseload consisted of routine screens (39.5%), results (13.4%), STD issues (9.6%) and serology for HIV, HBV and HCV (7.8%). However, as can be seen, NPs at KRC also managed a wide range of other health issues over the course of the study period including contraception, pregnancy, gynaecological issues, skin problems, wounds and wound dressings.

Three aspects of the total management of each identified problem were evaluated through file review. Clinical assessment covered documentation of: presenting problem, relevant health history, allergy status, current treatment, physical examination and clinical findings. The two reviewers found that for each of these areas, NPs had not clearly or completely documented the relevant issues in less than 5% of cases (Table 4).

The second aspect of the practitioners' work to be evaluated was the clinical management plan. Again, for most components of the clinical management plan, reviewers agreed that the NPs acted appropriately and according to protocol in more than 95% of cases. The only aspect where there was substantial disagreement was in the appropriate associated documentation section (18.6% of cases). This was generally because the client contact sheet for results requiring urgent action had not been completed or updated appropriately. This was in fact a newly introduced documentation requirement and inadequacies were overcome by adding this task to the triage role.

For the clinical management plan overall, both the CNC and the MUM were satisfied in 96.5% of cases. Four of the cases where the reviewers were not satisfied involved poor/inadequate documentation, in two the reviewers felt the MO should have been consulted, in another two the reviewers felt that not all issues raised in the consultation had been dealt with, while only one was reported as wrong contraceptive advice given. All of these cases were before

Table 5: Medications recommended by NPs (n=197)		
Recommended medications	**n**	**%**
Immunisation agents (Engerix, Haverix)	73	37.1
Contraceptives (OCP, Depo-provera, MAP)	37	18.8
Antibiotics	36	18.3
Topical vaginal medications	24	12.2
Antiseptics/anti-infectives/anti-parasitics	11	5.6
Anti-nauseants	6	3.0
Laxatives/anti-diarrhoreals	4	2.0
Analgesics/anti-inflammatories	3	1.5
Vitamins	3	1.5

December 1994 when the majority of the NPs were still involved with the orientation process and further training.

The final component of the consultation to be evaluated was clinical outcomes. Both reviewers were satisfied with clinical outcomes in 97.2% of cases. Reviewers were dissatisfied with clinical outcomes in three cases, which will be addressed in the discussion section of this paper.

Recommending medications

Table 5 outlines the types of medications recommended by the NPs. These medications were recommended by the NP and then the MO was consulted before administration. Over half the medications (55.9%) recommended by the NPs were for hepatitis B and A vaccination (ie Engerix and Haverix) or were contraceptive medications (Depo-provera, OCP or MAP). The recommended antibiotics were standard treatments for frequently encountered infections (eg Doxycycline for chlamydia, Trimethoprim for urinary tract infections). Topical vaginal medications (predominantly Canesten) were recommended for the frequently seen vaginal candidiasis.

Recommending diagnostic pathology

Ordering diagnostic pathology is a fundamental feature of the NP role at KRC given that NPs are responsible for routine sex worker screens. As such there were existing policies and procedures at the time of this study regarding their indications. NPs at KRC could order the following tests, without consultation, under the aegis of the medical director:

- Blood for HIV, hepatitis A, B and C, syphilis serology and LFTs (liver function tests, in conjunction with hepatitis C)
- Cytology for Papanicolaou smear
- Culture for chlamydia, gonorrhoea, candida, trichomonads
- Microscopy, culture and sensitivity for midstream urine (MSU), wound swab, throat swab
- Gram stain, wet film preparation

The clinical review process demonstrated that only 1.8% (n=9) of investigations recommended were inappropriate (Table 4). These all occurred prior to November 1994 when many of the NPs were newly employed and in the process of familiarising themselves with KRC policies and procedures. Two were for wound dressing and the problem identified by the reviewers was inadequate documentation such that the reviewers were unable to ascertain whether swabs taken were appropriate as no description of the wound was included. In another case, LFTs had not been ordered for a blood screen when it would have been appropriate to do so, while on another occasion, urinalysis was not undertaken when the client described symptoms consistent with a urinary tract infection (UTI). Two further cases involved symptomatic clients, one with possible vaginal thrush where the reviewers felt the NP should have undertaken a wet film preparation and another case of ongoing UTI where repeat MSU was indicated. A final case, occurring in the second week of data collection, involved perianal pruritis and the reviewers decided that the consult as a whole was inadequate as the MO should have been consulted.

DISCUSSION

The findings overall provide strong support for the ability of nurses to perform enhanced clinical practice and the results augur well for the future of nurse practitioners. The aim of the present study was to formally evaluate the effectiveness, professional appropriateness and acceptability of the extended role of the nurse practitioner at the Kirketon Road Centre. The results indicate that these nurse practitioners were appropriate and effective in their roles.

The findings indicate that according to both medical and nursing assessments NPs had clearly or completely documented the relevant issues in more than 95% of client cases. The aspects of the total management of each identified problem were evaluated through file review and clinical assessment. In the areas of documentation of presenting problem, relevant health history, allergy status, current treatment, physical examination and clinical findings the two reviewers found that for each of these, NPs satisfied the guidelines for 'best practice'.

Some of the areas in which 'best practice' was not achieved were due to inadequate documentation so that the reviewers were unable to ascertain whether the practice was appropriate. Further cases (less than 5%) that demonstrated less than optimal practice were most likely to occur in NPs who were new to KRC and occurred prior to November 1994.

Only 1.8% (n=9) of investigations recommended were considered to be inappropriate.

The reviewers agreed that the NPs acted appropriately and according to protocol in their clinical management plans in more than 95% of cases. Many of the problems identified involved poor documentation and all of these cases were before December 1994 when the majority of the NPs were still involved with the orientation process and required further training.

In the clinical outcomes component of the consultation both reviewers were satisfied with these in 97.2% of cases. Reviewers were dissatisfied with clinical outcomes in one case where the client tested negative for exposure to hepatitis B virus yet declined vaccination, in another where the client had abnormal results, yet the contact sheet had not been updated and in a third where, due to poor documentation of suture removal from a wound, the reviewers were unable to determine whether the wound had healed.

Concerns regarding the acquisition of skills and knowledge among newly recruited nurses to the level where they could be assessed as being competent to practice without supervision were experienced by the NUM and CNC during the term of this study. This situation and the NP feedback led to the conclusion that the process of orientation and ongoing education needed revision. Nursing reflections indicated that while most of the NPs believed that they had the prerequisite skills when they commenced at KRC, some of the NPs felt that these skills had to be learnt on the job. It is proposed that a more structured education programme be implemented to assist new NPs in gaining knowledge and understanding of relevant areas of practice and medical conditions and to assist all NPs in updating their knowledge base.

At the commencement of this study, the extension of limited prescribing rights for nurse practitioners was seen as a potential benefit of any evaluation. The medications most commonly recommended by NPs were in general the same as those recommended by NPs in their feedback regarding appropriate medications for limited prescribing rights. These included Engerix and Haverix (hepatitis B and A vaccination), Depo-provera, emergency contraception (MAP), repeat combined oral contraceptive administration and vaginal anti-fungal preparations. These medications were seen to be appropriate for standing orders as there is a limited choice of medications for the specific conditions. Establishment of the above medications as standing orders would increase nurse autonomy and would reduce the amount of unnecessary consultation time with medical officers thereby allowing both NPs and MOs to attend to the more complex issues.

Development of the competencies for this project was a difficult task as competencies were still being developed at a national level and had not yet been ratified in all special interest groups. It was acknowledged before commencement of this project that the competencies used in this study were in the early stages of their development and required expansion. Therefore it was anticipated that these competencies would undergo further development in collaboration with the appropriate professional associations.

RECOMMENDATIONS AND CONCLUSION

An important recommendation arising from this study is that a more structured education program for new KRC nurse practitioners be implemented. This would serve to increase the NPs level of knowledge and understanding about relevant areas of practice and to assist all NPs in updating their knowledge base. The changes to the NSW Nurses Act (1998) will lead to more structured formalised programs to prepare nurses for registration as NPs with the NSW Nurses Registration Board.

It is also recommended that protocols be developed and application for standing orders undertaken for medications such as hepatitis A and B vaccination, emergency contraception, depo-provera, administration of repeat combined oral contraception, vaginal anti-fungal preparations based upon clinical signs and symptoms and wet film and gram stain confirmation.

These are commonly requested or commonly recommended medications and clear protocols can be developed and easily followed because there is limited choice of medication given for the particular presenting problem. The existence of standing orders for these medications would facilitate service delivery to the marginalised target populations by reducing the requirements for consultation with MOs and by freeing up MOs thereby allowing them to concentrate on the more complex issues.

It is recommended that the NPs competencies undergo further development in collaboration with appropriate professional associations such as the Australian Sexual Health Nurses Association (ASHNA), the Drug and Alcohol Nurses Association (DANA) and the Australian Nursing Federation (ANF).

Offredy reports that evidence from the Nurse Practitioner Project Report (NSW Health Department 1993), as well as discussion with NPs interviewed during the broader research program on NPs emphasized the need for advanced education programs according to the practice specialty of NPs (Offredy, 2000). The current requirement for registration of NPs will lead to the further development of structured education programs (developed in collaboration with university postgraduate nursing programs) to better prepare NPs for this role.

This research study indicated that NPs (as assessed by both nurses and physicians) were professionally appropriate in all aspects of expected ‘best practice’ in

over 95% of consultations. The results support the conclusion that the extended role of nurses at KRC is effective and professionally appropriate. This augurs well for the future of nurse practitioners in Australia.

REFERENCES

Allen, D. 1998. Putting the experts in charge. *Nursing Standard.* 12(17):22-23.

Busen, N.H. and Engleman, S.G. 1996. The CNS with practitioner preparation: An emerging role in advanced practice nursing. *Clinical Nurse Specialist.* 10(3):145-50.

Dillon A. and George S. 1997. Advanced neonatal Nurse Practitioners in the United Kingdom: Where are they and what do they do? *Journal of Advanced Nursing.* 25:257-264.

Elder, R. and Bullough, B. 1990. Nurse Practitioners and clinical nurse specialists: Are the roles merging? *Clinical Nurse Specialist.* 4(2):78-84.

Kleinpell, R.M. 1997. Acute-care Nurse Practitioners: Roles and practice profiles. *Clinical Issues.* 8(1):156-162.

New South Wales Health Department. 1992. *Nurse Practitioners in New South Wales: The role and function of Nurse Practitioners in New South Wales (Stage One).* A Discussion Paper. NSW Health Department, Sydney, Australia.

New South Wales Health Department. 1993. *Nurse Practitioner Review Stage 2.*