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Published

2021

Journal Title

Collegian

Version

Accepted Manuscript (AM)

DOI

[10.1016/j.colegn.2020.09.007](https://doi.org/10.1016/j.colegn.2020.09.007)

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Clinician experience, perceptions, and acceptance of paediatric complex care nurse practitioner roles

Running Head

Perceptions, acceptance and expectations of nurse practitioner roles

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Abstract

Background

Nurse practitioner (NP) roles are implemented to increase access to care in response to rising demands and pressures in the health system, yet little evaluation is undertaken to assess how these new roles integrate with services.

Aim

To identify health professional's experience, perceptions, and acceptance of NP roles in complex care medical subspecialties within a paediatric tertiary hospital and health services.

Methods

The AUSPRAC validated survey was distributed in both electronic and paper forms to a purposeful cohort of multidisciplinary health professionals (n=208) working directly or collaboratively with both established NPs and novice/in training NPs. Nine medical subspecialties were represented including metabolic, immunisation and oncology. Two

reminders were sent to non-responders. All NP roles within nine medical specialties were evaluated. Data were tabulated and descriptively analysed.

Findings

Ninety-two responses were received (response rate 44%). Services with highest representation were Immunisation (71%), Metabolic Medicine and Palliative Care (45%) each. Responses were received from medical (42%) nursing (30%) and other healthcare providers (27%) including allied health clinicians. Most respondents agreed they understood NP roles (89%), agreed their introduction into the service had been a success (85%) and that NP services met the needs of the patients (91%). Some (9%) respondents reported they fear NP prescribing increased the risk of incorrect treatment with 7% not trusting NP's to diagnose correctly and some (15%) worried that NPs do not have the necessary knowledge to prescribe. Free text comments were generally positive and supportive of the roles, with few negative statements.

Discussion

While most NP roles were positively viewed, breakdowns in communication processes affected understanding and acceptance of some NP roles. Clearly defining the scope, purpose and benefits of NP roles should be communicated to individual teams and across whole organisations.

Conclusion:

NP roles are largely well accepted within this paediatric tertiary service, which demonstrates a shift in culture from research undertaken at the turn of the century. Attention to implementation factors may improve successful integration of new roles into services.

Keywords: Nurse practitioner; NP; advanced practice; perceptions; expectations; paediatric; complex care

Summary of relevance

Problem: Health services face the increasing challenge of delivering equitable, effective services to more people with less funding and less staff.

What is already known: Nurse practitioners (NP) have demonstrated cost savings whilst providing safe and effective care. Implementation of NP roles requires service re-design, for which examples and evidence is lacking.

What this paper adds: We present our findings after the implementation of NP roles within multiple specialties in a paediatric tertiary setting. Our findings demonstrate most NP roles are well accepted and valued. Careful planning, and communication with all stakeholders is required to address concerns when integrating new roles into services.

Introduction

The nurse practitioner (NP) role was first considered in Australia in the early 1990s as a solution to improve access to healthcare for patients in rural and remote areas (NSW Department of Health 1992). Australia defines an NP as: 'an advanced practice nurse endorsed by the NMBA who has direct clinical contact and practices within their scope under the legislatively protected title 'nurse practitioner' under the National Law'. (Nursing and Midwifery Board of Australia 2014, 2016). The NP role extends practice to include diagnosis and treatment of health conditions and includes interpretation of diagnostic tests, referral to and from other healthcare providers and prescription of medications (Australian College of Nurse Practitioners 2020a).

The aim of NP roles is to enable nurses with these endorsed, advanced practice skills and specialised knowledge, to practice to full potential, optimising workforce capacity and effectiveness across multi-disciplinary teams (Torrens et al. 2019). As well as

advanced practice, NPs are expected to demonstrate leadership, education and research capabilities (Nursing and Midwifery Board of Australia 2016). Internationally, the NP role is well established with implementation dating back to 1965 in the USA and Canada (Delamaire and Lafortune 2010). It was not until 2001 that NP roles were implemented in Australia (NSW Health 2017; Scanlon et al. 2016); the role therefore continues to evolve as services integrate this advanced role into practice. Some NP roles continue to have limited scope because of system constraints including misaligned funding and prescribing regulation (Boase et al. 2017).

NP roles have developed over time starting in rural health and emergency care, expanding to encompass a wide range of specialties including complex medical, surgical, aged care, paediatric, mental health and community care (Middleton et al. 2016). There are now over 2050 NPs in Australia (Nursing and Midwifery Board of Australia 2020); a modest increase in the last decade from just 700 in 2011 (Harvey, Driscoll, and Keyzer 2011).

NPs provide efficient, safe and a cost-effective care to expand clinical services and improve patient outcomes in response to health system pressures. Within health professions and the wider community however, there remains a knowledge gap regarding the role of NPs, which impacts on the successful integration of these roles in the healthcare setting (Foster 2010; Scanlon et al. 2016). NPs report difficulties working with healthcare professionals who have preconceived misperceptions of the scope and responsibilities, or lack of understanding of the purpose of the role (Lowe et al. 2012; Brom et al. 2016). Lack of awareness of NPs competencies and capabilities

also effects the ability of NPs to practice to the top of scope of practice (Parker et al. 2014).

Medical resistance is reported as one of the main barriers to successful integration of NP roles both internationally and in Australia (Delamaire and Lafortune 2010; Pollard February 6, 2006; Australian Medical Association 2019). The threat of NPs 'taking over' medical responsibilities has been reported as a concern across the world (Clark et al. 2018; Sangster-Gormley et al. 2011). Recent studies report medical colleagues are largely supportive and that resistance more often occurs with senior nursing staff (MacLellan, Higgins, and Levett-Jones 2015). The Australian Medical Association, however, continues to argue expanding NP's ability to provide Medicare funded services will fragment care, increase costs and result in poorer outcomes for patients (Australian Medical Association 2019). Nursing's resistance is more concerned with changes in team dynamics, which is heightened when workflow is affected. International research suggests nurses oppose reallocation of workload and expect NPs to support with general nursing duties in times of staffing shortages (Bryson 2016).

These factors lead to the underutilisation of NP roles and cause conflict within health care teams, which can impact clinical outcomes and productivity (Brom et al. 2016). For NP roles to be successfully integrated into health services, it is essential to identify these issues so they can be addressed. Solutions may then be developed at the clinical, organisational or systems level as required (Bradford et al. 2019).

In Queensland, Children's Health Queensland (CHQ) operates a statewide service, coordinating and delivering specialist services both from the paediatric tertiary hospital, and also cross community and smaller regional facilities. The first NP role introduced to CHQ was in the pain service in 2012. NP roles continue to expand over time and at the time of this study CHQ employed 17 NP across 10 specialties, with a further 9 NPs in training. There remains, however, a paucity of information about these paediatric subspecialty NP roles. Due to their uniqueness; some roles are unique within paediatrics in Australia and there has been little information available to inform their development and implementation. Less still is known about how these new roles are perceived and accepted by other healthcare providers across the facility.

The aim of this study was to identify multidisciplinary health professional's experience, perceptions and acceptance of NP roles established within complex care medical subspecialty units at a paediatric tertiary hospital and health service. This information could then be used to plan implementation and integration of NP roles into future service development.

Methods

Design

A cross sectional survey was undertaken with multi-disciplinary specialist teams involved with 12 NPs across nine different complex care services within a tertiary paediatric hospital: community psychology; specialist immunisation; cystic fibrosis, diabetes, haemophilia, inflammatory bowel disease, metabolic medicine, oncology and palliative care. Five of these NPs were in established roles, having practiced for three or more years, five were novice NPs with 12 months or less practice and two

were NPs in training. The internationally recognised AUSPRAC survey designed by Gardner (2010) was used to evaluate the experiences, perceptions, and acceptance of NP roles within services. Participants were asked to respond to 26 questions using a 5-point Likert scale where 1= strongly disagree to 5= strongly agree. Basic demographic questions were also included to identify specialty areas, awareness of other NP roles and participant's professional discipline. Space was provided for free text comments.

Data collection

Each NP identified relevant medical, nursing, pharmacy, and other healthcare providers with whom they regularly interacted within the provision of patient care. Names and email addresses of 208 healthcare providers were collated by a researcher (NB) not involved in the clinical practice of the NP group. An electronic survey platform (KeySurvey) was used to deliver the survey via email during 2018. Two automated email reminders for non-responders were sent. Paper copies of the survey were also made available and respondents could return the survey anonymously to the researcher who entered the data into the survey platform.

Ethical Considerations

A waiver for Ethics approval was provided by the local Human Research Ethics Committee (HREC ref 080120) as this study was considered a quality assurance activity. Participation was voluntary and respondents were assured their responses were anonymised with confidentiality assured to protect their identity.

Data analysis

All data were extracted into IBM SPSS™ for analysis. Two negative questions were reversed so all statements were positive for the purpose of analysis and presentation of data. Descriptive statistics were used to summarise findings with proportions of

agreement/disagreement. Cross tabulations were used to explore differences in awareness, experience, perceptions, and acceptance associated with variables including NP expertise (novice versus established roles) discipline and specialty area. Chi square tests were used to establish significance between differences.

Results

Characteristics of respondents

A total of 92 from 208 invited healthcare providers returned surveys, 80 via email and 12 completed paper versions. The response rate was 44%, which is acceptable in cross sectional surveys (Fincham 2008).

Characteristic of respondents including specialty area and discipline are presented in Table 1. The sample comprised medical (42%), nursing (30%), and allied health providers (23%); 5% did not provide their discipline. Responses were received from all specialty areas invited to participate.

[insert Table 1 about here]

Awareness and involvement with NP services

There was great variation in awareness of individual NP roles across respondents. Generally, there was more awareness of the established NP positions in comparison to the newer or in training positions. As anticipated, not all respondents were involved with all NP services, and there was more involvement with established NP roles. Respondent's awareness of and involvement with each NP role are represented in Tables 2 and 3.

[insert Tables 2 and 3 about here]

Experience, perceptions and acceptance of NP services

The majority (n=79, 86%) of respondents agreed that NP practice was safe, and that they offered safe (n= 84, 91%) and holistic care (n=74, 80%), which has a positive

impact on clinical care (n=80, 87%), which met the needs of patients (n=81, 84%) and improved health services (n=79, 86%). Overall, 78 (85%) of respondents agreed the introduction of the role had been a success and that it had a positive impact on inter-professional relationships (n=72, 78%) and freed up doctor's time (n=68, 74%). There was less agreement about the impact of the role on reducing delays (n=60, 66%), patient compliance (n=56, 61%), increasing satisfaction (n=53, 58%) duplication of services (n=42, 46%) or the number of healthcare providers families needed to interact with (n=29, 32%).

A small proportion (n=14, 15%) were concerned NPs do not have the necessary knowledge to prescribe and some (n=8, 9%) believed there was an increased risk of incorrect treatment and that NPs may misdiagnose (n=7,8%). Despite this, most (n=75, 82%) agreed NPs were adequately trained and that NP prescribing was necessary (n=72, 79%). Respondents were also generally aware NPs were supported by medical staff (n=82, 89%) and could obtain second opinions (n=86, 93%).

The responses above were not associated with any variables including NP expertise discipline, specialty area, awareness or involvement with different NPs. Overall, there were few negative responses; however, a substantial number of respondents elected to score '3 - no opinion/not applicable' on the 5-point Likert scale rather than agree or disagree across many questions (See Figure 1). Some respondents qualified this response statements: " *While I am aware of the role of the NP, I have limited interactions with them, therefore I don't have an opinion for a lot of these questions although I do support their role in healthcare.*" (Respondent #24 Allied Health)

Free text comments provided the opportunity for individuals to comment on subject areas not addressed in the survey tool. The majority of the free text comments were

positive, although there were some negative statements and acknowledgement of a tension between NP roles and medical roles (Table 4). These were grouped into three themes and discussed further below:

- NPs are knowledgeable and provide holistic care
- NPs are valued by services
- NP roles and goals for services are not well defined

[Insert table 4 about here]

Discussion

This study identified multidisciplinary health professionals experience, perceptions, and acceptance of NP roles in complex paediatric medical subspecialties at a major tertiary hospital and health service. The survey was used to elicit responses about both established, well-defined roles and new developing roles. Anecdotally NPs at this tertiary paediatric facility report feeling supported by management, senior medical and nursing staff, and importantly perceive their role is valued by patients and families. This is an improvement from census data of Australian NPs, which previously reported conditions were perceived as sub-optimal in terms of organisational and legislative support (Middleton et al. 2016).

Three themes were identified from free text comments, these supported findings from the survey responses and helped to further explain perceptions and acceptance of the NP role.

NPs are knowledgeable and provide high quality care

Most respondents agreed NPs had the required knowledge and training to provide high quality, safe patient care in an organised and systematic way. This is consistent with evaluation of earlier individual Australian NP roles, providing the impetus to adopt NP

roles more widely in the healthcare system (Masso and Thompson 2017). Contemporary studies consistently report NPs provide care and services that achieve equivocal outcomes compared to medical staff, and that patient satisfaction is generally high (Jennings et al. 2015; Dinh et al. 2012). Despite this empirical evidence, resistance to the NP role focuses on concerns regarding NP's ability to provide safe care and erosion of the medical role (Pollard February 6, 2006; Australian Medical Association 2019).

The least endorsed statements were regarding NP roles reducing the number of health professionals a patient interacts with and duplication of services. Given the nature of the highly specialised tertiary level services represented in this study, which include interdisciplinary professionals within services, this is not surprising. These items are perhaps more relevant to NPs working in primary care or rural health services where NP roles may indeed avoid duplication (Australian College of Nurse Practitioners 2020b).

NPs are valued by services

The majority of respondents reported they understood the purpose of NP roles and considered the role a valuable asset to services within the hospital and community services. Positive comments indicated some individual NP roles were particularly well integrated within services and considered an essential to the service. However, these statements reflect the perceived value of individual NP roles at a service level rather than the NP role in general across the organisation or at a systems level. New NP roles continue to require justification of their value with a business case to estimate the financial impact. And while some roles are able demonstrate cost effectiveness by reducing the demands on senior medical staff, increasing the capacity of services to manage patients (KPMG 2019), others are not able to demonstrate these benefits

(Jennings et al. 2015). Compared to the USA and the UK, the economic rationalisation for NPs in Australia are not well substantiated through financial re-imburement for services (Woods and Murfet 2015). These factors contribute to undervaluing of the NP role (Lowe et al. 2012).

NP roles and goals for services are not well defined

Similar to other research reporting barriers to NP roles (Smith et al. 2019) we identified concerns, particularly from nursing staff, around the ambiguity of the role, the outcomes associated with the role, and resistance with integration of the role within some services.

Some of these difficulties may stem from undefined boundaries between registered nurse and NP roles, and junior medical and NP roles (Lowe, Plummer, and Boyd 2018). As a role that is still evolving, NPs can experience a loss of identify because they are no longer a traditional nurse, but neither are they a medical doctor (Foster 2010). Professional relationships are challenged when NPs feel this distance from their teams and colleagues. Deeply ingrained paradigms and cultures of hierarchy can hinder NPs ability to achieve the expectation of their role (Lowe, Plummer, and Boyd 2018). Team dynamics are further impacted if the legitimacy and purpose of the role is questioned. In this context, the expectations of NPs to be leaders, maintain professional clinical practice, undertake research, and provide education and mentoring to staff add additional pressures. At the operational level, these competing personal, professional and organisational responsibilities can limit the ability to practice at top of scope, causing significant distress with disruption to NPs identity and professional relationships (Middleton et al. 2016).

Poor trust regarding the knowledge and capabilities of NP roles was reported by a few (n=6) respondents in this study. Trust between team members requires an understanding of each other's roles, and acceptance that each team member operates unhindered within their scope of practice (Roth and Markova 2012). The "poor trust" reported in this study may be related to the way the role was implemented into services. Not being involved in the early planning stages of role implementation, or clearly defining the role can lead to diminished understanding and acceptance of the role (Sangster-Gormley et al. 2011).

Limitations

In the current study, the negative responses were not associated with particular disciplines, specialty areas or level of NP expertise. A limitation of our study is we did not ask about the level of experience of respondents. It may be that junior medical and nursing staff, who were not likely to be involved in the planning for NP services, were more likely to not trust the capabilities of NPs. These issues may be addressed with more comprehensive education about the role, that includes clearly defining and clarifying the intention of NP roles (Sangster-Gormley et al. 2011).

The survey used in this study was not specifically designed for evaluating NP in training roles and we had a significant number of respondents who indicated they had 'no opinion' to questions as the roles for in training NPs were not well established. Comparing multiple roles across multiple specialties in one survey may have been confusing for respondents. For larger services with multiple health professionals, single department surveys may provide greater learnings about individual NP roles.

Clinical Implications

Strategies to reduce barriers and enhance implementation of NP roles include change management principles such as: strong mentorship, a clear process, engaged facilitators and stakeholders who advocate and share information about the role, and attention to team dynamics and collaboration (Masso and Thompson 2017). Additionally, when teams are able to contribute to defining and developing the scope of the role, clarity is enhanced and conflict reduced (Smith et al. 2019).

A planned process for integrating and monitoring the progress of NP roles includes consultation and education of all staff across the organisation. As well as improving the visibility of the role, this strategic implementation of the role may lead to greater acceptance by other healthcare providers. These strategies can assist with optimising interprofessional team collaboration and improve services function.

Conclusion

The results of this study demonstrate specialist paediatric NP roles are largely well accepted and understood as a valued component of the complex medical sub-specialties in this tertiary health service. We also identified, however, not all healthcare providers working alongside NPs were fully aware of the existence of some roles, of what their capabilities were, or if the role provided additional benefits to patients. When implementing new NP roles, it is imperative to consider the planning and implementation process. This will ensure NPs are able to effectively contribute to high quality patient care as an integral and valued member of the team.

Acknowledgements

All nurse practitioners within the hospital and health service.

The authors are grateful to the members of the various multidisciplinary teams who participated in the survey.

Funding

This work was unfunded.

Table 1 Characteristics of respondents, N=92

Variable	N	%
Speciality area		
Oncology	19	21%
Infectious diseases	11	12%
Metabolic Services	11	12%
Child and Youth Mental Health	9	10%
Endocrine	9	10%
Other*	10	10%
Gastrointestinal	7	8%
Haemophilia	7	8%
Cystic Fibrosis	6	7%
Immunology	3	3%
Discipline		
Medical	39	42%
Nursing	28	30%
Allied Health (pharmacy, physio, social work)	21	23%
Not stated	4	4%
Total	92	100%

*Other includes Renal, General Paediatrics, Palliative Care and Respiratory

Table 2. Awareness of Nurse Practitioner roles within facility by discipline, N=92

	Medical N=39 (%)	Nursing N=28 (%)	Allied Health and other* N=25 (%)	All disciplines N=92 (%)
Established NP roles				
Immunisation	29 (74%)	21 (75%)	11 (44%)	61 (66%)
Metabolic	28 (72%)	22 (79%)	8 (32%)	58 (63%)
Palliative care	23 (59%)	19 (68%)	9 (36%)	51 (55%)
Child and Youth Mental Health	5 (13%)	1 (4%)	6 (24%)	12 (13%)
Novice/ In-training NP roles				
Leukaemia/Oncology	18 (46%)	15 (54%)	12 (48%)	45 (49%)
Haemophilia	14 (36%)	17 (61%)	9 (36%)	40 (43%)
Cystic Fibrosis	12 (31%)	11 (39%)	9 (36%)	32 (35%)
Endocrine	10 (26%)	9 (32%)	1 (4%)	20 (22%)
Inflammatory Bowel Disease	5 (13%)	5 (18%)	2 (8%)	12 (13%)

*Includes respondents who did not nominate discipline

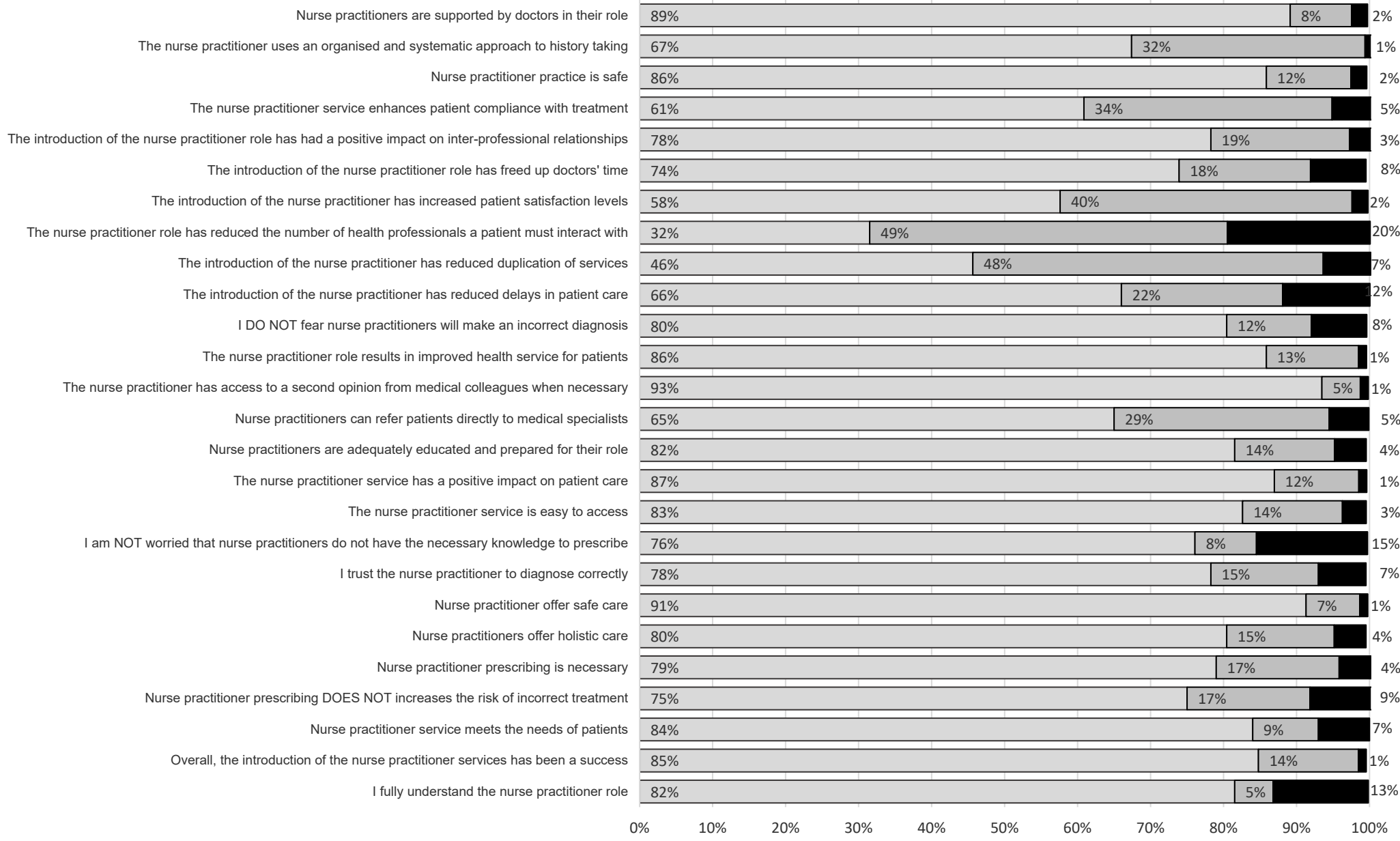
Table 3. Association with NP roles by discipline, N=92

	Medical N=39 (%)		Nursing N=28 (%)		Allied Health and other* N= 25 (%)		All disciplines N=92 (%)	
Established NP roles								
Immunisation	22	56%	12	43%	7	28%	41	45%
Metabolic	13	33%	14	50%	6	24%	33	36%
Palliative care	17	44%	7	25%	1	4%	25	27%
Child and Youth Mental Health	6	15%	7	25%	8	32%	21	23%
Novice/ In-training NP roles								
Haemophilia	4	10%	5	18%	3	12%	12	13%
Leukaemia/Oncology	3	8%	6	27%	2	8%	11	12%
Cystic Fibrosis	5	13%	2	7%	3	12%	10	11%
Endocrine	4	10%	2	7%	0	0%	6	7%
Inflammatory Bowel Disease	4	10%	0	0%	1	4%	5	5%

Table 4 Free text comments

Positive Comments	
NPs are knowledgeable and provide high quality care	Nurse Practitioners in my experience are very knowledgeable about their area of specialty and willingly shared their knowledge (Respondent #25 Nursing)
	In my personal opinion the nurse practitioner led clinic is comprehensive and inclusive of my discipline and the patient's overall health. (Respondent #27 Allied health)
NPs are valued by services	I had the pleasure to work with a NP when I was a Jnr Reg in the UK in the mid-late 90's. I am very used to having a NP as part of a service and I strongly endorse the role. (Respondent #72 Medical)
	Nurse practitioner's role is a great step to improve service delivery and support medical staff" (Respondent #28 Medical)
	Nurse practitioners have revolutionised patient care in the tertiary setting. We need more nurse practitioners! It is such a good investment for the hospital! I honestly couldn't speak highly enough of the impact they've had in my work as a clinical pharmacist (Respondent #34 Allied health)
	The nurse practitioner I worked with is superb in every way. She is a core and essential member of the team which helps to ensure the smooth running of the unit. (Respondent #16 Medical)
Negative statements	
NP role and goals for service not well defined	The position and goals initially proposed for the NP in training has changed and as a nursing team we have not been involved in any aspects of what we believe the team needs to move forward. Looking now it has not been a positive experience and I feel we have lost a clinical nurse for the team instead of gaining an experienced specialist in this area. More work in the future needs to be made so other teams do not experience the same distress.” (Respondent #4 Nursing)
	I know very little about the role and how it has impacted the service. I think there should be more education for staff on the wards so that we know what the NP role is and what they can do within our service. I don't know what their scope is within the service therefore I wouldn't know when to call on them instead of someone from the medical team.” (Respondent #8 Nursing)
	The NP role & responsibility was not clearly defined within the unit. In the initial phase of team discussions, it was observed to be very different from nursing and medical stand points. This left the department with a great deal of ambiguity on the expectations/processes that would occur over the next few years. The process of recruitment and implementation for the position was an overall concerning experience for many within the department. (Respondent #41 Discipline not provided)
	The medical/nurse practitioner interaction is very interesting. Many senior consultants regard NPs very favourably, but it is clear that some junior staff are threatened by them - threatened by the fact that a nurse knows more than they do. This is an issue that should be addressed even though it is likely to be less of an issue as the NP role becomes more established (Respondent # 14 Medical)
	Some education is needed about the NP role and specifically who does what and when would be helpful. e.g when is it OK for an NP to override a medical decision on a consultant? (Respondent #29 Discipline not disclosed)

Agree No opinion Dissagree



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