

# “One of us – first and foremost a nurse”. Exploring the Nurse Practitioner role within one private surgical hospital

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**Exploring the Nurse Practitioner role within one private surgical hospital**

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## Abstract

This research report provides findings from a mixed method study to explore the role of the Nurse Practitioner within a regional private surgical hospital.

Today's health sector faces the challenge of providing high quality care within the constraints of increasing costs and reducing resources. Patient and consultant expectations have grown exposing a need for advanced nursing skills and care in an environment where, in most small to medium sized private hospitals, nurses are often the only clinical staff on site. To meet these challenges one regional private surgical hospital introduced Nurse Practitioners (NP) within inpatient services. While informal feedback from patients and visiting practitioners (VP) confirm that the role is highly beneficial, there has been no formal review on the implementation or effectiveness of the role.

The aim of this research is to explore the nurse practitioner role within the private hospital by providing a description of the role in this setting; identifying the impact on pre and postoperative care; and by identifying how the NP provides leadership in their role.

A mixed methods approach was used, where data was collected concurrently and analysed separately. Quantitative data was collected through a NP activity log and patient satisfaction survey; this was analysed using descriptive and inferential statistics. Qualitative data was collected through semi-structured focus groups and interviews involving management, nurses and specialist VP, and analysed using thematic analysis. Areas of convergence are explored in the discussion section

Findings and themes that emerged indicate the NP is an integral part of the patient journey. NPs in this private surgical setting act as clinical experts and professional leaders. NPs provide timely assessment and intervention and often act as an interface between patients, family, registered nurses and specialist doctors. Patient satisfaction with the care provided by NPs is high. The NP is seen by ward nurses as "one of us", with management and doctors indicating they feel "secure" knowing that a NP is in attendance when they may not be there.

This research adds to the body of knowledge about the clinical and non-clinical role of a New Zealand registered nurse practitioner. Although findings are from a small study, this research brings insights into implementing and articulating the NP role applicable to other surgical settings in private and publically funded surgical services.

Key words: advanced assessment, nurse practitioner, patient satisfaction, private surgical hospital, role clarity.

## **One of us – First and foremost a nurse**

Today's health sector faces the challenge of providing high quality care within the constraints of increasing costs and reducing resources (Ministry of Health, 2016). Changes in illness patterns, demographics, increased technologies and medication costs and fiscal requirements are only some of the factors impacting upon healthcare organisations and their staff. Private surgical services are also subject to these increased challenges and expectations. Changes in patient populations, increased acuity and the development of more complex surgical procedures require nurses to have advanced clinical knowledge and skills. Patient and visiting practitioner (VP) expectations have also grown, exposing a need for advanced nursing practice and care in an environment where, in most small to medium sized private hospitals, nurses are often the only clinical staff on site caring for patients after hours (Keys & Rackham, 2017). One initiative introduced in 2012 to meet these challenges within one private surgical hospital has been the introduction of Nurse Practitioners.

### **Background**

The nurse practitioner (NP) role has existed in New Zealand since the first NP was registered in 2001. As at 31 March 2019 there were 365 practising NPs on the Nursing Council of New Zealand (NCNZ) register (NCNZ, 2019). NPs also hold New Zealand Registered Nurse (NZRN) registration and are regulated by the Nursing Council of New Zealand under the Health Practitioners Competence Assurance (HPCA) Act 2003. NPs may work in multiple settings and speciality areas and until recently were required to specify practice area and age group (child, adult, older adult) as a condition for their scope of practice (NCNZ, 2017). Based on the most recent NCNZ (2019) statistics there are 15 acute care NPs employed in a surgical setting, nine of those are employed in a private hospital.

The NP scope of practice enables an NP to work autonomously and collaboratively across different healthcare settings (NCNZ, 2017; New Zealand Nurses Organization [NZNO], 2018). Responsibilities of a NP include diagnosis, assessment and treatment intervention, ordering and interpreting of diagnostic tests, prescribing patient medications and patient admission and discharges (NZNO, 2018; NCNZ, 2017). NPs in the acute setting are responsible for immediate intervention and treatment decisions resulting in reduced incidence of serious adverse events (Dalton, 2013; Pirret et al., 2015). NPs have been found to reduce patient complications, length of stay and readmission rates resulting in improved patient outcomes, as well as reduced hospital costs (Whitley, 2012; Jennings et al., 2015; McDonnell et al., 2015). However, none of these studies focused specifically on the surgical setting.

The private surgical healthcare sector differs from public District Health Board (DHB) surgical settings in that while registered nurses (RN) provide twenty-four-hour care, there are no junior or resident doctors or after-hours medical practitioners onsite (Keys & Rackham, 2017). Patients are under the care and responsibility of consultant surgeons and consultant anaesthetists (visiting practitioners - VP) who provide follow up care and are on call should there be a need for patient review or should complications develop. The VP's primary focus is on the surgical procedure and recovery. They rely on the knowledge and skills of the RN's to manage patient care, carry out prescribed treatments and interventions, assess and identify potential complications. The NP is available to support the RN, to discuss concerns about patient deterioration, care management, prescribing medication as well as providing advanced assessment and treatment (Hogan & Cooke, 2014).

In 2012 the setting where this research was undertaken implemented a NP intern programme with two Masters prepared RNs taking up positions (Keys & Rackham, 2017). Since 2015 the hospital has had at least one registered NP with a second either registered NP or NP intern (NPI). The hospital provides a range of elective surgery and procedures covering most surgical specialities. Surgeons and anaesthetists are not employed by the hospital but are credentialed as VPs to perform procedures there. The inpatient ward has 48 beds for patients requiring at least an overnight stay, plus a dedicated same day admission, day-stay and medical procedure units. Anecdotal feedback from patients and VPs indicate the NP role has been highly beneficial in ensuring timely access to advanced assessment and intervention for postoperative patients (Keys & Rackham, 2017). The hospital's NPI programme has received recognition from the New Zealand Private Surgical Hospital Association (NZPSHA) for its role in participating in and contributing to improving patient outcomes.

At the time of this research there are two NPs employed at the hospital covering Monday to Friday 9am-7.30/8.30pm and Saturday morning 8am-1pm. The two NPs are based in the postoperative inpatient ward but respond to emergency calls throughout the hospital and are utilised in Post Anaesthetic Care Unit (PACU) and Day-Stay Unit (DSU) when registered nurses need support or have concerns about patients. The NPs in this private surgical hospital keep a professional portfolio of evidence to meet NCNZ nurse practitioner competencies. NPs are required to have 40 hours per year of professional development and are supported with this as well as professional supervision from an external agency (NCNZ, 2019). As part of NCNZ's requirement for ongoing peer review the NPs meet to discuss complex cases and their prescribing practice. The NPs continue to engage with a local NP group to support interns, be involved with strategic planning and raise NP profiles.

Whilst overall perceptions are that NPs are effective in their role both clinically and in meeting organisational values, Halliday et al. (2018) found that there is some confusion over the extent of the NP role and where it fits within the healthcare team. Officer et al., (2018) state that the successful implementation and development of the NP role is dependent upon understanding and clarity of the role. Sidani and Irvine (1999) argue that variability in role definition and in the implementation of NP roles in a variety of settings with a variety of duties makes comparison and evaluation difficult. Similarly, ambiguity in the NP role can result in inconsistency in provision of care by NPs, (Dalton, 2013). Hurlock-Chorosteki & McCallum (2016) state the integration of NP into inpatient care requires clear strategies. Optimisation of the NP role enables team work and NPs should be actively engaged in developing and articulating their role. This also requires recognition and support of the less visible indirect care aspects of the NP role and thus the role needs to be clearly defined at a local level (Moore, 2012). A lack of understanding and conflicting expectations of the NP role can lead to a lack in achieving the potential of such a role. Thus, it is essential that the NP role is clarified in specific settings and those involved in patient care have a clear understanding of the NP role to ensure full use of the NP skillset (Lowe et al., 2013).

Measuring patient satisfaction is a key element in the understanding and the evaluation of the NP role (Sidani & Irvine, 1999; Griffen & McDevitt, 2016). High levels of patient satisfaction with NP care is consistent and well supported by literature (Griffen & McDevitt, 2016; Gagan & Maybee, 2011, Jones 2009; Thrasher & Purc-Stephenson, 2008). While Agosta (2009) and Thrasher and Purc-Stephenson (2008) recognise that measuring patient satisfaction in a newly developed NP role is multidimensional, patient satisfaction is an indication of quality care by the NP (Griffen & McDevitt, 2016; Jones et al., 2014; Agosta, 2009). Patient satisfaction with NP care has also been linked to patient safety (Griffen & McDevitt, 2016). While patients may indicate acceptance and satisfaction with NP role, they do not always understand the role of the NP in their care (Gagan & Maybee, 2011).

The NP role is a relatively new one in the New Zealand healthcare sector therefore limited local research has been completed. Available research within New Zealand is often primary health care and community based, reflecting the high proportion of NPs practicing in this area (Carryer & Yarwood, 2015; Gagan et al., 2014; Officer et al., 2018). New Zealand based literature suggest the variety of speciality area pathways available to a NP means there is not always role clarity (Carryer et al., 2018; Forbes et al., 2018) and thus efficacy in measuring outcomes. Following a NCNZ review of the NP scope of practice, NPs registered since 2017 do not need to specify an area of practice (for example adult/older adult or primary health care/acute practice) but must still be able to demonstrate the ability to apply advanced clinical assessment and critical thinking skills in complex situations in the area they do practice (NCNZ, 2018). This has helped clarify the role at a practice level, however there is little literature that identifies the role operationally at a health care organisation or unit level.

An increasing body of research is also becoming available on the NP role in the aged residential care (ARC) sector. While the focus is on the older adult, these studies do have some applicability to NP practice in the private hospital setting. NPs in aged care settings assess patients who may also be under general practitioner care. Similarly, patients NPs see in private surgical practice have VP oversight. NPs in aged care can enhance care delivery and improve access to care for residents (Forbes et al., 2018). In a large New Zealand ARC based study NP involvement resulted in reduction of acute presentations requiring more invasive intervention, transfer and hospitalisation (Peri et al., 2013). Quality and timeliness of care related to regular NP presence and the subsequent relationships developed with unit staff were also seen as important especially in the prevention of hospitalisation (Ploeg et al., 2013).

The NP role in an acute setting is multifaceted. Advanced assessment and care management skills of a NP help enhance patient care, providing a holistic approach with continuity of care (McDonnell et al., 2015). An important component of the NP role is non-clinical (Hurlock-Chorosteki et al., 2013) contributing to the development of clinical guidance, policy development and case reviews, an area not always visible to other health professionals (Halliday et al., 2018). NPs can also be a conduit to inter-professional collaboration and provide leadership within the interprofessional community through research, collaboration and consultation with the wider health community (van Soeren et al., 2011). Research into the NP role in acute hospital care tends to focus on role comparisons and outcomes (Stanik-Hutt et al., 2013; Pirret et al., 2015; Maier et al., 2016). These studies found little difference between the diagnosis, problem identification and treatment planning abilities of NPs to that of registrar doctors. International research into acute care show NPs are primarily related to emergency department (ED) settings with findings indicating NPs working autonomously provide high quality, safe and effective comprehensive care (Thrasher & Purc-Stephenson, 2008; Jennings et al., 2015; Griffin & McDevitt, 2016). Research evaluating NP services in emergency departments demonstrated improvement in the performance indicators that directly impact patient quality of care (Jennings et al., 2015).

NPs within perioperative and surgical care are a newer phenomenon and sparsely reported. Newly trained NPs describe the impact of patient satisfaction and positive patient outcomes as a motivating factor in the evolution of the NP role since its introduction within surgical care in Sweden since 2014 (Jangland et al., 2016). One of the challenges in developing a new service was the lack of NP role models, however the NPs were generally well accepted by surgeons and newly trained nurses. Identifying boundaries and having clear role definitions helped the NPs to be accepted by senior nurses who were initially hesitant of the NP taking over their decision making. The importance of developing trust, communication and clearly defining the NP role was also important to the successful introduction of a cardiac surgical NP in a British NHS unit (Moore, 2012). Similarly, Hurlock-Chorosteki

& McCallum (2016) reiterate the importance of having clearly articulated understanding of the NP role value in order to optimise the role within inpatient services. This Canadian hospital NP led unit research findings reported NP outcomes that included timely intervention, increased bed capacity and reduced length of stay leading to improved patient outcomes. Researchers in Sweden found that NPs introduced into a surgical ward setting contributed to the quality and care provided by all members of the inter-professional team (Kvarnström et al., 2018).

Robles et al., (2011) analyses the impact of a NP upon patient care after discharge from an Illinois surgical unit. Findings indicated an improvement on the use of resources and a reduction of re-presentation to medical services after discharge. While the healthcare system and NP accreditation systems are different in the United States, improved patient communication and collaboration with support services once discharged demonstrate the holistic care provided by NPs there. NPs have been reported to make a difference in an orthopaedic preoperative care unit providing uniformity of preparation and inter-professional collaboration to improve patient preparation ensuring patients are safely prepared for elective surgery, reducing cancellation and improving patient outcomes (Sebach et al., 2015). Closer to home, while NP roles related to acute inpatient and surgical services have been reported in Australia, including intra-operatively as a surgical assistant (Yang & Hains, 2017), no specific evaluations or studies of this practice were identified.

Although informal feedback from patients and VPs at this hospital has confirmed that the NP role is highly beneficial in ensuring timely access to advanced assessment and treatment for post-operative patients there has been no formal review on the implementation or effectiveness of the role (Keys & Rackham, 2017). This research is a response to this gap to assist defining and clarifying the NP role in the private surgical setting by capturing not only the clinical elements of the role, but professional and organisation elements as well.

## **Methods**

### **Aims**

This research seeks to clarify the NP role in the private surgical setting by exploring clinical and non-clinical aspects of the role. The research aims are:

- To provide a description of the nature of NP activity (role) within the private surgical setting.
- To identify the impact of NP role in pre and post-surgical assessment and intervention.
- To identify how the NP role provides leadership in responding to clinical and non-clinical issues.

### **Research Design**

This research will explore the NP role through the experiences of patients, staff and VPs, each with their own perspectives and experiences of the role. A concurrent mixed method design was used where quantitative and qualitative data was collected concurrently but analysed separately with areas of convergence explored in the discussion section. The study included patients, RNs, nurse managers (NM), VPs and NPs. The research team consisted of a lead researcher from a regional tertiary provider of undergraduate nursing education and a NP from a regional private surgical hospital. The lead researcher undertook data collection from patients, RNs NMs and VPs. The NP researcher was

involved with developing data collection tools, (participant self-reporting activities) using the NP activity log. Both researchers were involved in the data analysis and reporting.

### ***Ethical considerations***

Ethical approval was gained from the Toi Ohomai Research Committee and the Toi Ohomai Human Ethics Committee resolution # TRC 2019.048 following approval from the regional private surgical Hospital Board of Directors. The Health and Disability Ethics Committee (HDEC) confirmed the study as a 'minimal risk observational study' and therefore did not require HDEC review.

### **Research methods and procedures**

#### ***Participants/sampling***

All patients who were treated by an NP and available to be seen by the lead researcher within the four-week study timeframe were invited to complete an online survey prior to discharge from the hospital. One of the NPs practises in adult and older adult age divisions therefore children were excluded from the research. NPs would provide details of patients seen and estimated date of discharge to the lead researcher who would visit patients prior to discharge, discuss the research, gain and record consent to be sent a link to or receive a hard copy of the survey. Potential participants were provided with a comprehensive participant information sheet and re-confirmed consent to the use of their survey data once activating the link.

RN and NMs in all areas of the hospital were invited to participate in focus groups through information sessions and poster invites. VPs were contacted and invited to participate in an individual interview or to complete a written questionnaire. Participant information sheets were provided and written consent gained prior focus group or interviews including permission to audio-recording for transcribing purposes.

#### ***Materials/data collection instruments***

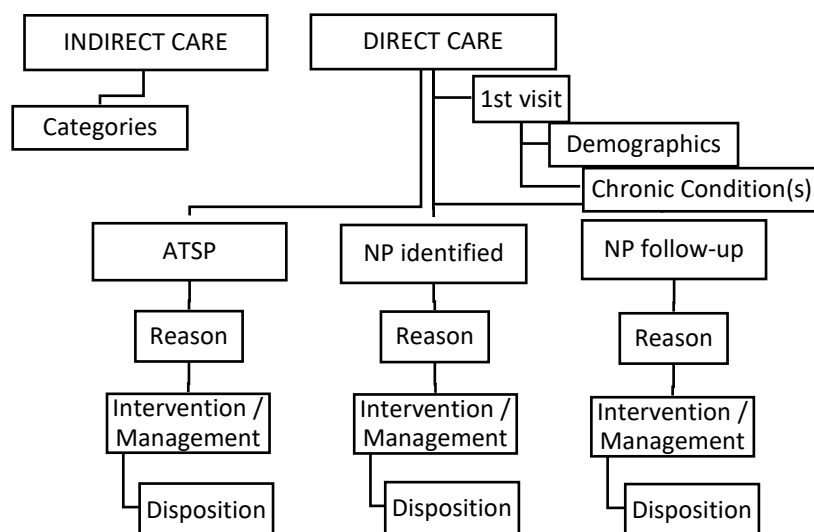
Research tools consist of:

- Self-reporting log of NP activities over a four-week period.
- 15 question Likert scale patient satisfaction survey including role identification.
- Semi-structured questions for RN focus group, NM focus group and individual consultant interviews.

#### ***Data collection***

**Quantitative data:** Quantitative NP activity log data and patient satisfaction surveys were completed online. A conceptual map was designed by the NP researcher to record the nature of NP activities performed, and characteristics of patients cared for, which was transformed online using Survey Monkey (Figure 1). The NP activity log was tested and reviewed by Toi Ohomai academic staff for readability and understanding after being provided with hypothetical patient information. At the time of the study the regional private surgical hospital employed two NPs. Both NPs reported their practice in a single self-reporting activity log over the study period to determine the types and numbers of services they provided to patients and to record non-contact activities.



**Figure 1.***Self-reporting activity log.*

Patient satisfaction data was collected over the same four-week period through a self-completion 16-item questionnaire survey where patients were asked to rate their satisfaction using Likert scale questions adapted from Thrasher & Purc-Stephenson (2008) with permission. Thrasher & Purc-Stephenson's questionnaire has also been applied in the New Zealand context to ascertain patient satisfaction within the primary health care setting (Gagan & Maybee, 2011). The items from both surveys were reviewed and reworded slightly. Four items were negatively worded to reduce column-tick phenomena which was a limitation identified by Gagan & Maybee (2011). Tool items included demographics, ten satisfaction questions that asked about time spent, communication, information/education provided and care, including one question about overall satisfaction. Three further questions then inquired about the patients' understanding of the NP role compared to other health professionals and the educational preparation of NPs. The survey was available either online using Survey Monkey or in a written format.

**Qualitative data:** A purposive sampling approach was used to seek rich description of the NP role from RNs and NMs working in the same setting as the NPs. Focus group interviews using open-ended questions were used, while individual semi-structured interviews were used to collect data from VPs. A pilot focus group of three participants were interviewed to assess the usefulness and applicability of interview questions. Participants were asked to explain their role and experiences working with NPs. The impact on participant's practice and nursing workforce was questioned and opportunity provided to provide further comment including areas for concern or development. Participants were also asked about feedback they may have received from colleagues or patients.

### **Data analysis**

Quantitative data from the NP activity log and patient satisfaction surveys were carried out using statistical program IBM's Statistical Package for Social Sciences (SPSS), version 26.

Activity log data was checked and cleaned. Entries with missing data were removed and data from indirect care and direct care were separated prior to analysis. This process was to separate the non-clinical data from clinical data analysis. Frequency tables were used to record demographic data as well as record trends in NP activities.

Twenty-three patients completed the participant consent form with 22 going on to complete the patient satisfaction survey. Limited demographic data was collected relating gender, age and length of stay. Ethnicity, socio-economic status and education were determined either potentially identifiable or of limited relevance, therefore not collected. Data from patient satisfaction surveys were analysed using descriptive frequencies and inferential statistics using non-parametric tests in line with Thrasher and Purc-Stephenson (2008) and Gagan and Maybee (2011). Total patient satisfaction and total role clarity were compared across individual characteristics of gender, age and length of stay. There was no missing data for the variables measured and the four items worded negatively were reversed for analysis.

Qualitative data from focus groups and interviews was transcribed by an independent transcriber who signed a confidentiality agreement. Data was then analysed using descriptive thematic analysis undertaken concurrently by both researchers separately and then reviewed together to corroborate and confirm categories and themes based on stages followed by Vaismoradi et al., (2013).

- Familiarisation with the data: Researchers individually read and re-read transcripts, noting down initial ideas.
- Generating initial codes and themes: Independently sorted to identify similar phrases, patterns, themes, sequences and important features. Patterns were noted and coded into initial themes, gathering data relevant to each theme.
- Reviewing themes: Researchers met to review codes and themes developed in relation to the coded extracts and the entire data set. Coloured post-it notes were used to create a thematic map. Researcher notes from focus groups and interviews were reviewed to corroborate sub-themes. Initially coding was centred on the three research aims. However, following ongoing review and analysis of subthemes, two clear overarching themes emerged.

Themes and sub-themes from qualitative data were examined alongside quantitative findings to explore areas of convergence in the discussion section (Creswell & Creswell, 2018).

## Results

Data sets were analysed concurrently. The order of results presentation in no way reflects the order of consideration of analysis. Areas of convergence are identified in the discussion section.

### NP activity log

NP activities were collected over a four-week period by the two NPs employed by the hospital. During the period of this study they covered Monday to Friday 9am – 7: 30/8.30pm and Saturday morning 8am - 1pm based in the postoperative inpatient ward. NP demographics are presented in Table1.

**Table 1.***Nurse practitioner demographics.*

	NZRN (years registered)	NP (years registered)	Scope / condition of practice	Hours worked per week (FTE.)**
NP 1	19	4	Acute (adult / older adult)	0.7
NP 2	26	2	Acute (lifespan)	0.9

*Note.* FTE = full time equivalent. 1.0FTE equals 5 days or 40 hours per week.

Data was analysed from 334 NP activities. NPs selected a pathway of either indirect care ( $n = 153$ , 45.8%) or direct care ( $n = 181$ , 54.2%). Indirect care refers to non-clinical activities such as report writing, self and staff professional development and activities that may involve clinical inquiry such as a RN discussing possible interventions with the NP, or clinical support such as amending an error in date/dose of prophylactic antibiotic (Table 2). Over a third of indirect care activities were related to supporting RNs in the provision of care (RN support and advice 22.5%, clinical inquiry 6.9%, professional development 3.6% and prescription review 2.4%), while less than one percent related to the NP's own professional development.

**Table 2.***Indirect care*

Category	Frequency <i>N</i> =	Percent %
RN support/advice	75	22.5
Clinical inquiry	23	6.9
Meetings and administration	13	3.9
Projects	13	3.9
Professional development others	12	3.6
Prescription / Medication amendment	8	2.4
Other (please specify)	5	1.5
Professional development self	2	0.6
MDT support / advice	2	0.6
Total	153	45.8

Direct care refers to assessment and interventions provided to specific patients. Each contact or episode of care was recorded (Table 3). The data may reflect the multiple episodes of contact for a single patient. Demographic data for gender and age, along with speciality and ASA level was collected from patients who the NP saw for the first time ( $n = 103$ ). Over half the patients seen by a NP were over 60 years of age ( $n = 57$ , 55.3%), while over 64% of patients seen were from an orthopaedic surgical specialty ( $n = 66$ ). The majority of patients were ASA level I or II ( $n = 94$ , 91.3%) indicating low to mild anaesthetic risk (Daabiss, 2011). ASA level 111 indicates severe systemic disease that is not incapacitating.

**Table 3.***Direct care demographics.*

	Frequency N =	Percent %	Cumulative percent %
<b>Gender</b>			
Male	54	52.4	52.4
Female	49	47.6	100.0
Total	103	100.0	
<b>Age</b>			
16/39	17	16.5	16.5
40/59	29	28.2	44.7
60/79	51	49.5	94.2
>79	6	5.8	100.0
Total	103	100.0	
<b>Speciality</b>			
Orthopaedic	66	64.1	64.1
Urology	16	15.5	79.6
Gynaecology	6	5.8	85.4
General	6	5.8	91.3
Vascular	1	1.0	92.2
Plastics	4	3.9	96.1
ENT	4	3.9	100.0
Total	103	100.0	
<b>ASA*</b>			
I	40	38.8	38.8
II	54	52.4	91.3
III	9	8.7	100.0
Total	103	100.0	

Note. ASA\* = American Society of Anaesthesiologists physical status classification.

After seeing a patient for the first time, NPs recorded the patient's main or most significant chronic condition (Table 4). 41.7% ( $n = 43$ ) did not have a chronic condition or no chronic conditions that were identified. A range of chronic conditions were identified among patients with multiple conditions ( $n = 17$ , 16.5%) and cardiac related conditions (CVR/CAD:  $n = 15$ , 14.6%) were the most common conditions recorded.

**Table 4.***Chronic conditions: main / most significant.*

Condition	Frequency N =	Percent %	Cumulative Percent %
None / not identified	43	41.7	41.7
Multiple	17	16.5	58.2
CVR / CAD	15	14.6	72.8
Other	8	7.8	80.6
MH / neurological	7	6.8	87.4
Autoimmune / Arthritis	5	4.9	92.3
Respiratory	3	2.9	95.2
High BMI	3	2.9	98.1
VTE	2	1.9	100.0
Total	103	100.0	

NPs recorded the primary reason for seeing patients for all episodes of patient care ( $n = 174$ ) reflecting the fact that some patients were seen multiple times (Table 5.). *ATSP* (Asked to see patient) was selected when the NP is asked to see/review a patient by a RN ( $n = 101$ , 58%). *NP identified* was selected when the NP identified that the patients required review. This could be due to co-morbidities, high risk/long surgery, report from RNs or that the patient had been identified as high risk at pre-assessment ( $n = 46$ , 26.5%). Twenty-seven patients were in the *Follow-up* category (15.5%) selected when the NP is reviewing a patient for the second or consecutive time.

**Table 5.**

*Reason for seeing patient.*

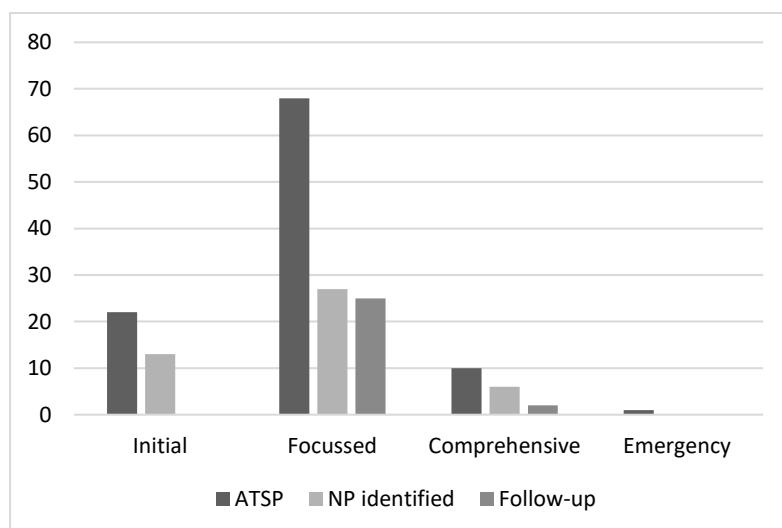
	Frequency <i>N</i> =	Percent	Cumulative Percent
ATSP	101	58.0	58.0
NP identified	46	26.5	84.5
Follow-up	27	15.5	100.0
Total	174	100.0	

Each contact or episode of care provided to a patient was then recorded by NPs, including type of assessment, intervention or management provided followed by method of disposition (discharge or discontinuance of care by NP). Similarly, patients categorised *ATSP* on initial contact may also be represented in *NP Follow-up* category.

NPs undertook a variety of assessments depending on the reason for seeing the patient ( $n = 174$ , Figure 2). An initial assessment was completed when this was the first NP contact with the patient (*ATSP*,  $n = 22$ ; *NP identified*,  $n = 13$ ; 20.1%). Focused assessment refers to an assessment that is focused on one particular area such as pain, medication review, or patient education (*ATSP*,  $n = 68$ ; *NP identified*,  $n = 27$ ; *NP follow-up*,  $n = 25$ ; 69%). A comprehensive assessment entails a full assessment including medical history, physiological, psychological, and sociological examination (*ATSP*,  $n = 10$ ; *NP identified*,  $n = 6$ ; *NP follow-up*,  $n = 2$ ; 10.3%). There was one incident where an emergency assessment was undertaken where maintaining respiratory and cardiac function was prioritised.

**Figure 2.**

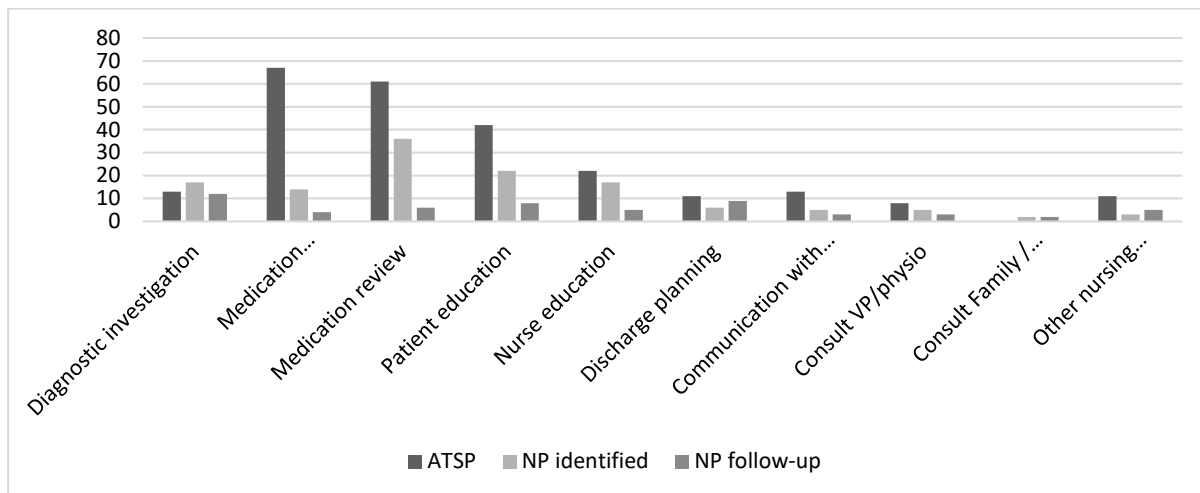
*Method of assessment.*



Following assessment NPs recorded the intervention provided ( $n = 432$ , Figure 3). Multiple interventions are possible from a single patient care episode. Medication prescribing and medication review were responsible for 43.5% of all NP interventions (ATSP,  $n = 128$ ; NP identified,  $n = 50$ ; NP follow-up,  $n = 10$ ).

**Figure 3.**

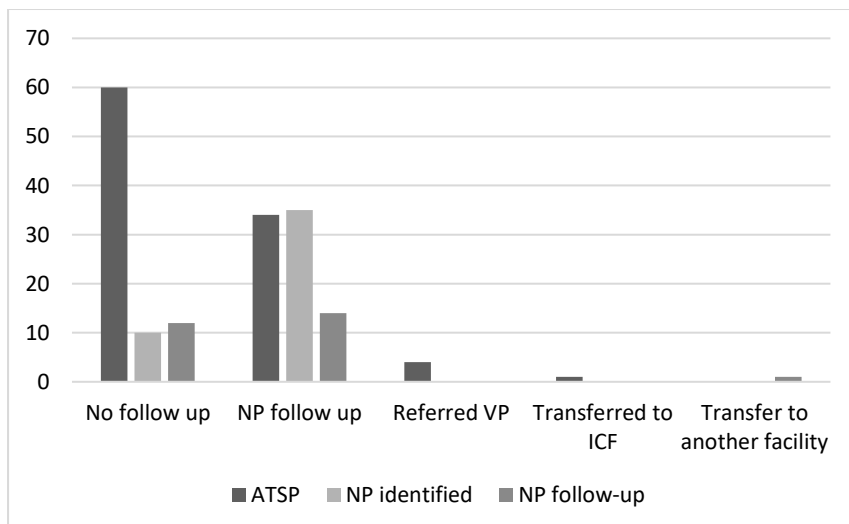
*Intervention provided.*



Disposition was recorded referring to the outcome of care provided for the episode of care by the NP rather than discharge from overall care (Figure 4). Overall 48% NP assessment and interventions resulted in no further follow up ( $n = 82$ ). 60.6% ( $n=60$ ) of patients seen as a result of ATSP required no follow up as NP assessment and intervention resolved the issue. In contrast 77.8% ( $n=35$ ) of patients the NP identified as needing review or assessment required further NP follow-up. Only 2.3% ( $n = 4$ ) occasions of NP assessment and intervention resulted in referral to VP (surgeon or anaesthetist). This low number of referrals does not consider patients who may have been reviewed by VP or transferred without NP input.

**Figure 4.**

*Disposition.*



Relationships between gender, age, speciality, ASA and chronic conditions were investigated using Spearman rho non-parametric correlation tests. Strong correlations between age and ASA ( $\rho = .54$ ,  $n = 103$ ,  $p < .01$ ) and between ASA and chronic conditions ( $\rho = .629$ ,  $n = 103$ ,  $p < .01$ ) were confirmed.

### Patient satisfaction survey

22 patients completed the survey - 9 female, 13 male. The first three items on the questionnaire gathered demographic data on gender, age and length of stay (Table 5). Participants were asked to select their age range: 16 - 39 ( $n = 1$ , 4.5%), 40 – 59 ( $n = 4$ , 18.2%), 60 – 79 ( $n = 15$ , 68.2% and 79+ ( $n = 1$ , 4.5%). All patients completing the survey stayed at least one night as patients who were discharged day of surgery rarely come to the ward. Over two thirds of patients stayed three or more nights ( $n = 15$ , 68.2%), possibly reflective of increased acuity and need for NP involvement.

**Table 5.**

#### *Patient satisfaction survey demographics*

Variable	Frequency N =	Percent %	Cumulative Percent %
<b>Gender</b>			
Male	9	40.9	40.9
Female	13	59.1	100.0
Total	22	100.0	
<b>Age</b>			
16-39	1	4.5	4.8
40-59	4	18.2	23.8
60/79	15	68.2	95.2
79+	1	4.5	100.0
Total	21	95.5	
Missing System	1	4.5	
Total	22	100.0	
<b>Length of stay</b>			
1 -2 nights	6	27.3	28.6
3+ nights	15	68.2	100.0
Total	21	95.5	
Missing System	1	4.5	
Total	22	100.0	

Data was collected primarily on patient satisfaction with NP care (Table 6). The next ten items related to satisfaction with NP care and were grouped together to present Total Satisfaction Scores (TSS) for analysis with a possible range of 10 – 50. Secondly, patient understanding of the NP role was also of interest, therefore the next these three items were grouped to represent Total Role Clarity (TRC) scores for analysis with a possible range between 3 - 15. Thrasher and Purc-Stephenson's patient satisfaction survey has an internal consistency Cronbach's Alpha estimate range from .70 – .88. In the current study, internal consistency Cronbach's Alpha estimates for TSS and TRC ranged between .806 - .858. This indicates good internal consistency exceeding minimum reliability estimates recommended by Nunnally and Bernstein (1994) of .70.

Table 6.

*Descriptive statistics: TSS and TRC*

	N	Range	Minimum	Maximum	Mean	Median	Std. Deviation
Total Satisfaction Score	2	17.00	10.00	27.00	13.73	12.00	4.30
Total Role Clarity	2	7.00	3.00	10.00	6.05	6.00	2.55
Valid N	2						

TSS ranged from 10.0 – 27.0 ( $M = 13.73$ ,  $SD = 4.30$ ,  $Md = 12.00$ ). The lower the TSS score, the more satisfied the patient. All patients agreed or strongly agreed that the NP was friendly and gave them a chance to discuss what was important to them. Participants were asked to state whether they agreed or disagreed with the statement “The Nurse Practitioner do not provide information about how to look after my health/recovery”. This was one of the questions negatively worded to check for response bias. Patients primarily disagreed/strongly disagreed ( $n = 18$ , 81.8%). Most patients strongly agreed that the NP took their problems seriously ( $n = 21$ , 95.4%) and would trust the NP with their health ( $n = 20$ , 90.9%).

Similarly, the lower the TRC, the higher the understanding of the NP role. TRC ranged from 3.0 – 10.0 ( $M = 6.05$ ,  $SD = 2.55$ ,  $Md = 6.00$ ). Over 86% of patients agreed or strongly agreed that they understood the difference between the NP’s role and RN’s role ( $n = 19$ ), and all patients agreed or strongly agreed that they were clear how the NP role differed to a doctor’s role ( $n = 22$ ). This possibly reflects that the doctors are all specialist surgeons or anaesthetists, making their roles clearly identified. Answers varied from strongly agree ( $n = 3$ , 13.6 %) to strongly disagree ( $n = 6$ , 27.3%) when patients were asked if they were clear on how a NP is educated.

The relationship between TSS and TRC was investigated using Spearman rho (non-parametric correlation). There is only a weak correlation between the two variables,  $\rho = .327$ ,  $n = 22$ ,  $p < .001$ , therefore no confirmation can be made of a relationship between TSS and TRC. Given that TSS scores indicate high levels of patient satisfaction with NP care, it does not appear that knowledge of the NP role or of their training is necessary for patient satisfaction.

Mann-Whitney U tests revealed no significant difference in the TSS of males ( $Md = 13$ ,  $n = 9$ ) and females ( $Md = 13$ ,  $n = 12$ ),  $U = 46$ ,  $z = -.849$ ,  $p = .4$ ,  $r = .18$ ; and no significant difference in the TRC scores of males ( $Md = 8$ ,  $n = 9$ ) and females ( $Md = 5$ ,  $n = 12$ ),  $U = 36$ ,  $z = -1.524$ ,  $p = .127$ ,  $r = .33$ . Kruskal-Wallis test showed there was no statistical difference between groups of age (16-39, 40-59, 60-79, 79+) and length of stay (Did not stay overnight, 1 - 2 nights, 3 or more nights) with either TSS or TRC. Median values were not reported due to low numbers in some groups.

### Focus group and individual interviews

Qualitative data was analysed from focus groups and individual interviews. A focus group was held with three NMs including the General Manager who is also a RN. Three focus groups were held for RNs. Despite inviting RN participants from throughout the hospital, all participants were ward based RNs ( $n = 9$ ) except one RN from the pre-assessment unit. RN years of experience ranged from two RNs with less than five years and eight RNs with greater than five years’ experience. One RN was employed on a casual basis, while the others worked 0.7 – 1.0 FTE. Individual interviews were completed by six VPs (four consultant anaesthetists, two consultant surgeons). A further three surgeons and one anaesthetist completed a written format of the interview questions. Categories identified during



thematic analysis were developed into sub-themes from which two overarching themes emerged: NP as clinical expert, and NP as professional leader.

### ***NP as clinical expert***

**Comprehensive holistic assessment, care planning and prescribing.** The benefit of combining nursing experience with advanced knowledge was highlighted frequently. Participants spoke about the advanced scope of practice of the NPs and how they provide comprehensive and holistic care. RNs recognised the more in-depth assessment the NPs provide commenting that they “often sit down and get a fuller history” (RN).

The NPs helped with complex patients by providing ongoing review, improving continuity of care and preventing issues (RN). “They could address pain issues, change perimeters in a PCA, just make the patient’s pain levels improve, suggest other medications and prescribe, which is a wonderful thing to be able to do” (RN).

The NP’s advanced skills are used in acute situations. “Looking at the person’s EWS [early warning score] and looking at the wider picture, what could be causing that change... pre-empting things before they escalate” (NM). RNs can use the EWS score to seek support from the NP or to request a VP to attend. An EWS is calculated when charting vital sign measurements and triggers a clinical response for patient deterioration (Health Quality & Safety Commission New Zealand, 2017).

VPs talked about the NP experience and confidence in managing acute issues such as post-operative bowel obstruction, hypotension and SOB.

“You know if you’ve got somebody who drops their blood pressure, I’d normally get a phone call – we’ll increase some fluids, put their head down. I don’t even know that’s happened now... because it’s been taken care of.... And it’s those things that can be dealt with” (VP).

The holistic approach of the NP was described as “understanding the wider picture, having a rounded approach” and meeting patients’ needs (RN). VPs found this helpful as the NP had “a good understanding of where people are at medically as well as with their rehab status”. “They get a better feel for how the patients are doing” (VP). “It’s almost like they oil the wheels sometimes for those complex discharges. They just make things happen” (NM).

Having the ability to prescribe was frequently highlighted as a benefit for patients, RNs and VPs. Their pharmacological knowledge is a great resource for RNs; “a nurse might look at a dose and go hang on a minute, actually that doesn’t look right and they can discuss it with the NP and they can prescribe, sort it straight away” (NM).

**Timeliness.** RNs described the NPs as very approachable, giving sound “on the spot advice” and extra confirmation when they needed it. The accessibility and approachability of the NPs resulted in timely assessment and interventions for patients. “It facilitates quicker care or confirms that maybe we don’t need to take it any further” (RN).

Having an NP on site was reassuring for managers and for VPs who are not always immediately available. “They step in and manage, they liaise with general practitioners, they sort out discharges, they sort out transfers to the public hospital, they intervene far more quickly” (VP). “Their ability to attend to a patient with a problem when I cannot be there has to be in the patients’ interest. Earlier diagnosis, liaison with medical personnel and initiation of appropriate and more advanced treatment” (VP).

There was a lot of dialogue around the hours the NP worked and how it would be beneficial to extend the hours later into the evening and over the weekend. Participants understood that the hospital would require more NPs to provide an increased service but believed this would be reassuring and provide good cover for the hospital.

**Improved care.** The NPs were described as being intuitive and solution focused. Examples included discharge prescriptions, commencing high flow oxygen, preventing respiratory issues, adjusting pain medications and communicating with primary care providers.

One RN reported that the NP is able to “make the patient stable, you know, at that moment” which is “reassuring” and provides a safer service (RN). Doctors also commented that the NP role had resulted in better patient care and this was due to their ability to respond to patient’s needs, manage issues, issue prescriptions, facilitate discharges, provide good quality clinical handovers and escalate concerns appropriately.

### ***NP as professional leader***

**Clinical leader.** The NP role provides clinical leadership in the ward setting. The NPs were available to respond to RN questions, respond to any concerns they may have and to receive updates on patient’s progress. A NM spoke of how the NPs “know which patients are causing concern and which they can triage... and which nurses need some help and what the urgent issues are.” This was also beneficial for the VPs who commented on the NPs as “the central source of information”. They have

“another sort of level of understanding and experience and because they’re involved across the care of all the patients in the hospital at any one time they have a much better sort of overarching view of what’s going on and a degree of coordination that I find useful” (VP).

The role of the NP in writing clinical reviews on patients that required transfer to another facility was seen as very useful. It provided opportunity for reflection and discussion between the NPs and VPs, and learning for both parties.

**Support, reassurance, trust.** RNs, VPs and NMs report feeling supported and reassured having someone with advanced skills and knowledge available on site. RNs feel respected by the NPs, they have been able to build a trusting relationship with them as they are here all the time rather than with a specialist that comes and goes. NMs also appreciate NP help with managing people, being aware of what’s going on and are what the nursing issues are.

NPs are a valuable resource and have “exceeded expectations”. The VPs “really trust their opinion, their diagnosis and their assessment skills” (NM).

“I think I treat them like the registrar. I rely on them to look after my patients when they’re on the ward even though I’m in the hospital. I know that having NPs here if there’s any concerns at all, I won’t be phoned immediately to come help sort something out. They’re there to do that so I can’t praise that enough” (VP).

**Role model.** Nurses felt inspired by the advanced knowledge and skills of the NPs and saw them as role models. NPs were described as being “real nurses” that understand what RNs do and can answer a call bell. “One of things too is that they are one if us aren’t they... first and foremost a nurse” (RN). The NPs were described as the “right people” because of their professionalism, approachability and caring nature (VP). VPs were strong advocates for the role and felt the role was an integral part of the service at this hospital. The NPs are “well respected, they’re well liked, they communicate well and they’ve got very good background knowledge” (VP).

There was a sense of protection too, “do they [NPs] feel appreciated?” (RN), and a need to be mindful of “not becoming medicalised” (VP) and “not being used by medical staff” (NM) as a replacement, rather than supplementing medical roles.

**Team culture - collegiality, cohesiveness, collaboration.** RNs reported that the NPs “know each of us”, have improved the culture professionally, and increased cohesiveness/collegiality. They are able to approach the NP with “just instinct, not necessarily obvious issues” (RN), encouraging collaboration. RNs relate to NPs due to their nursing background. “They get what we do, so they can combine both sides. There’s no hierarchy as well, if there’s a bell going and if they aren’t busy they’ll go and answer it” (RN).

Pre-assessment was seen as an area of increased potential for the NP becoming more involved in complicated pre-assessments. If the RN in the pre-assessment unit feels a patient needs a more in-depth assessment or if they need a second opinion, the RN will consult the NPs. The NPs document a comprehensive assessment and plan of care, pre-empting what might be needed and allowing the ward to prepare for the patient’s needs.

The NPs were described as having a close relationship with doctors and are able to facilitate effective resolution of problems. VPs were strong advocates for the NP role which they felt was an integral part of the service at the hospital. Having a trusted professional to manage common issues and sort problems was very reassuring and hugely appreciated. For surgeons, this meant they had less interruptions knowing appropriate contact would be made by RNs or NPs when required. VPs report that the NPs have a high standard of perioperative insight, are able to make independent decisions, and also communicate with clarity. They report the NP role to be highly valuable in discussing high risk patient’s pre-operatively, providing “first responder” cover on the ward, and managing acute deterioration and transfers. VPs maintain an overall responsibility for their patients and understand that they need to support NPs, back them up, and be available if a patient deteriorates expectantly.

**Staff development.** The NPs have had a positive influence on staff development, providing education at the bedside and with formal education sessions. “They’ll come in and assess a patient and then explain to the nurses what they are doing and what they are looking for and what the next steps are” (NM). They also challenge RNs to assess patients and develop their critical thinking; “they may ask what do you think? Have you assessed? What have you found?” (RN).

RNs agreed that they reflect on their practise more and are encouraged to assess their patient before going to the NP with a problem.

“They’re really good to learn from, it takes it to just that other level because they have that in-depth knowledge, so it kind of makes you look at things that you wouldn’t normally every day look at. and they have that knowledge and they impart it really well to you because they’re a nurse as well.... they’re just there and you can ask them things and they can explain it at a level that you can understand so again their bridging that gap between perhaps physician and nurse” (RN).

Coming from a nurse perspective was seen as an important part of the NP’s education delivery. RNs indicated NPs will explain things and are forthcoming with information. Formal education is relevant and practical. “The NPs have enabled us to develop our knowledge and theory and practical skills” (RN). RNs found they are more aware of medication interactions, how to stop complications, interpreting blood results and the implications of these.

## Discussion

The title of Nurse Practitioner (NP) in New Zealand is protected under the HPCA Act 2003 requiring NPs to be regulated by NCNZ. This affords the public and other healthcare professionals a degree of assurance in the NP role; that a NP meets an advanced standard of practice with some consistency between roles (NCNZ, 2017). This mixed method research has identified the positive impact of the NP role on pre and post-surgical assessment and intervention in a private hospital setting, with areas of convergence being discussed in this section. The research findings confirm NPs enhance the patient experience through leadership in responding to clinical and non-clinical issues. A complementary triangulation approach has been used to assist in the integration of qualitative and quantitative data sets and aid in the interpretation of results (Östlund et al., 2011).

The NPs in this research worked primarily in the ward setting and were visibly engaged in the assessment intervention and evaluation of patient care. Less visible were the indirect-care aspects of the NP role. While indirect-care activities accounted for nearly half of all types of NP activities during the study, the time spent was not measured. The indirect-care activities identified were predominately clinically related, 30% of indirect care activities primarily related to RN support and advice and patient inquiry. These included reviews of patient progress with RNs and review of laboratory results without direct patient interaction. Less than 1% NP indirect care activities related to self-professional development such as research were recorded, although one NP is a researcher in this study. These findings are reflective of Carryer et al.'s, (2017) findings that NPs are not engaging in activities such as their own professional development, undertaking research and self-study, as much as direct care or clinically related indirect care activities.

Direct care activities primarily resulted from the NP being asked to see or review a patient for whom the RN had concerns. This often meant a patient was reviewed quickly, negating the need to contact the patient's VP. These patient assessment and treatment interactions may be brief and the RN continued to provide direct care. Conversely, a significant aspect of the NP's direct care resulted from NP identified and follow-up care, reflective of the ongoing management of patients' chronic conditions which may not be a primary focus of the VP. In this situation, the NP coordinates care providing cohesion between VP, RN and the supervised provision of patient care in the ward environment, liaising with ongoing services on discharge to ensure continuity. The NP role in coordinating care was identified in Kvarnström et al.'s, (2018) study where the NP bridges the roles of RN and medical practitioner on the ward enabling the cohesive delivery of care to patients improving the overall patient experience.

The NP role as a clinical leader providing timely access to comprehensive holistic assessment, care planning and prescribing, role modelling, improving collaboration and staff development, has a positive impact on pre and post-surgical care whether directly or indirectly. Improved care is a clear finding of the themes that have emerged from the research. The majority of patients assessed by the NP had intervention resulting in either resolution of their acute issue or continued to be monitored and managed by the NP. There were few referrals for VP review or to another facility indicating the impact of NP advanced assessment and clinical care on patient outcomes by providing timely care within a holistic framework. Care related responses all indicated high level of satisfaction with the care received from the NP.

Patient satisfaction levels in this study were high over all demographic levels of gender, age and length of stay. Agosta (2009) reported similar findings. While Jones et al., (2014) found patient satisfaction

to be highest in the >40years age group, there were no statistical differences in satisfaction or understanding of the NP role relating to age in our findings. There was no significant difference found between patient's satisfaction and gender, age or length of stay, in line with findings from Thrasher & Purc-Stephenson (2008). Interestingly, Gagan and Maybee (2011) did find a significant difference in patient satisfaction levels with younger patients reporting higher levels of satisfaction.

Most patients were seen by the NP in response to a nurse request (ATSP). Being available over a 10-hour shift meant that the NP was the first/primary responder responsible for co-ordinating patient care and providing after hours support. The NP was able to carry out advanced assessments and provide intervention where the RN could not, such as prescribing medication, which also had a high frequency in the types of intervention provided by the NP. A number of patients were identified for assessment by the NP due to their chronic condition, surgical history or delayed postoperative progress indicating increased risk of complications. Kvarnström et al., (2018) also found that having a NP situated in the surgical ward enabled clinical assessments and decisions to be made promptly and followed up. This continuity was a finding supported by van Soeren et al., (2011) who identified that the NP focus on clinical practice provides patient access to care previously only delivered by medical practitioners. When complications/acute issues did occur, patients were being diagnosed in a timely manner. The NP forms a diagnosis and plan of care, liaises with the VP and if necessary prepares referral documentation and transfer to the public hospital; especially valuable when the VP was not immediately available or onsite.

NPs in the study provide leadership, and are seen as positive role models, identified as being approachable and trusted by managers, RNs and VPs alike. RN participants were inspired by the advanced knowledge and skills of the NPs and saw the NPs as role models who encouraged the critical thinking of RNs in developing their own advanced assessment and diagnostic skills. Collegial and inter-professional respect of participants was evident, despite varied understanding of the education and preparation required for the role. Patients also had varied understanding of the education required of the NP role but this had little impact on how satisfied patients were with NP care. The NPs were held in high regard by their RN colleagues and there was a sense of pride spoken about by participants in the development of the NP role within their hospital.

NPs play a prominent role in the development of RNs through informal and informal processes. Kvarnström et al., (2018) report the prominent role NPs had in relation to teaching of junior doctors in their surgical setting as well as providing a senior knowledge support role to RNs, while the nursing experience and background of NPs impacted how the NPs approach and make decisions in a cardiac surgical unit, increasing the effectiveness managing often complex patient conditions (Moore, 2012). Similarly, NPs in this study play a prominent role in the development of junior and senior RNs, seen by participants as respectful, able to communicate well and willing to share information and knowledge. Participants reported that on the ward NPs encouraged critical thinking and decision making of junior nurses as well as being a resource for more senior nurses. As well as this informal professional development, NPs also provide formal professional development to RNs as part of the organisational in-service program.

NPs form part of an inter-professional team working closely with RNs, VPs and other health professionals such as physiotherapists. It was evident from the data, that all inter-professional colleagues had a high regard for the NPs and their role. Trust is an important factor identified in building and maintaining collegial relationships and integral to the success of the role. Trust was also a component in satisfaction with care in over 90% of patients. In the research, having a trusted professional to manage common issues and sort problems was identified as very reassuring and hugely appreciated. VPs and NPs collaborate frequently, making each other aware of particular issues or

concerns. NPs were recognised as having a high standard of perioperative insight, able to make independent decisions and communicate effectively and with clarity. The NPs were described as having a close relationship with doctors and were able to facilitate effective resolution of problems.

The understanding by patients, RNs and VPs of the education and training of NPs was not clear, yet this did not appear to impact the level of care reported by them. It is also clear that not all VPs fully understand the NP role. A risk of the NP being seen as a version of a medical professional is evident, and a risk also identified by Hurlock-Chorosteki et al., (2016). Indeed, RNs in this research appeared protective of 'their' NPs and reinforced that the holistic approach of a NP was part of nursing practice. Clarity of role has been found to be an important factor in effective inter-professional practice (Kvarnström et al., 2018), with Hurlock-Chorosteki et al., (2016) warning that a lack of understanding and conflicts of expectation of role can lead to lack of full utilisation of NPs. These authors concluded that NPs need to be able to articulate their role and be actively engaged in developing and promoting that role. NPs in primary healthcare settings in New Zealand have also been urged not to be complacent and continue to develop the NP role (Carryer & Yarwood, 2015).

This research goes some way to clarifying the NP role within this private surgical hospital and reporting the impact on improving patient outcomes. What is also clear from this research is that NPs and NMs need to ensure the role continues to use the full skills of the NPs and promote understanding of the role to continue to impact positively on patient outcomes. There is an opportunity to develop the NP role in this setting, in areas such as pre-assessment in order to more fully utilise the expertise of the NP, an aspect identified as underutilised in research by van Soeren et al., (2011). There is also the potential to offer more coverage by NPs later into the evening or over weekends where they currently are not rostered to work. Increased coverage by NPs has the potential to further improve the level of response to an acute need for review. There is also potential for further evaluation of the need for advanced assessment and VP reviews after hours and analysis of the impact of NP care on patient related outcomes such as upon transfers, length of stay and re-presentation to medical care after discharge.

### **Limitations**

This research was undertaken on a small sample within one organisation. Differences in roles within other similar organisations or surgical units may impact generalisability. NPs only identified patients with which they had significant input into their care for the patient satisfaction survey. Many more patients were seen during the four-week study time yet may have only had a single intervention such as prescribing routine medication, so were not included as participants. Patient data was collected by the lead researcher who is not an employee of the hospital and not involved in the provision of care. This reduced the lead researcher's ability to invite patients discharged on the day of surgery or who had discharged prior to data collector, therefore findings are restricted to those staying one night or longer. No data was collected outside the ward area, although this is reflective of the current situational practice area of the NPs. Green & Davis (2005) warn of the need to consider socio-economic status and health variables with delivery service variance when determining patient satisfaction. Further consideration of demographic data would be useful if this study were to be replicated in other private hospitals or publically funded surgical services. Future studies could also include others members of the inter-professional healthcare team such as physiotherapists, pharmacists and social workers.

## Conclusion

NPs have been registered in New Zealand for nearly 20 years, yet out of 365 registered NPs there are still less than 5% employed in surgical or private health care settings (NCNZ, 2019). This research demonstrates NPs play an important role in the private surgical setting providing advanced assessment and expert clinical reasoning skills. This enables early recognition of physiological changes in an environment of increased acuity from more complex surgery and increasing comorbidities of patients with chronic conditions. A NP working in a private surgical hospital meets all NCNZ competencies for NP practice, coordinating collaborative care, influencing nursing workforce development and enhancing the patient experience. The NPs in this study are trusted and provide strong leadership within the interprofessional team, and as such, are a role model to RNs. They are seen as “one of us”, clearly espousing a holistic nursing identity, reported by their nursing colleagues. Data collected complements findings from patients, RNs VPs and NMs, evidencing that NPs have a positive impact on patient satisfaction, effectuate RN development, and are integral to the provision of cohesive collaborative care. While the research generalisability has limitations, this research has the potential to influence the development of similar NP roles within the private healthcare setting by bringing insights into the process of implementing and articulating the NP role applicable to other surgical settings. Findings add to the body of knowledge about the clinical and non-clinical role of a New Zealand registered NP in private and surgical services. Further research is needed to fully evaluate and confirm the effectiveness of the NP role in providing improved patient outcomes in this setting and in more widespread New Zealand surgical settings in private hospitals and within publically funded DHB services.

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