

**Clinical Activities of Advanced Practice Nurses in Tertiary Hospital  
Surgical Inpatient Settings: A Scoping Review.**

Master's thesis

CARING SCIENCE

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# Abstract

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Keywords:

Advanced Practice Nurse, Acute surgery APN,  
Tertiary care APN, APN roles and tasks, APN  
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*Background:* Nursing shortages are requiring health services to explore different ways to encourage recruitment and retention of nursing staff. One such method is the development of advanced practice nursing roles. APN roles can be found in both primary and tertiary care in a diverse range of nursing specialities.

*Objective:* To investigate what types of acute surgical advanced practice nursing clinical activities within a tertiary setting were described in the literature between January 2017 and November 2022.

*Methods:* A scoping review utilising the 2020 JBI framework was performed. 25 studies and documents were retrieved from the CINAHL, MEDLINE, Academic search complete, PubMed, Google Scholar and Google databases during December 2022. An inductive qualitative analysis was performed.

*Results:* 106 codes were identified, and then organised into five main categories describing the clinical activities of acute surgical APNs within tertiary settings: 1) Independent clinical care, 2) Clinical and professional advancement, 3) Management, 4) Education, and 5) Negative clinical activities. The category of clinical care was the focus of descriptions, reflecting the centrality of the patient to the APN role. Negative clinical activities were also described, resulting in APNs being unable to perform independently to their advanced capabilities.

*Conclusions:* APNs working in acute surgical tertiary settings perform a variety of activities across all four categories with positive attributes identified in this review. The context of the acute surgical setting determines to what extent each of the clinical activity categories are represented. These results were similar to previous research findings. Negative clinical activities are less represented in previous research. Negative clinical activities may be due to a lack of knowledge of APNs scope of practice. This study could assist the development of position descriptions for APNs working in acute surgical tertiary settings.

## Foreword

This research was performed to re-ignite career dreams.

Four years after graduating as a registered nurse, I had decided I wanted to become a clinical nurse specialist in wound and stomal care. In Australia, these two roles were always linked together, and they were my passion. First though, I wanted to take part in an Australian ritual, travelling to Europe on a two year working holiday. That two years has stretched to 25, and career plans have changed. When I first started nursing in Finland it felt like the only career choice was between management and staying in patient care. There were no nuances at all. Over time, progress has been made in the career options available to nurses who wish to remain in hands on patient care. Through participation in the Master's of Advance Practice Nursing degree at Åbo Akademi University, and completion of this thesis, I hope to participate in the continuing development of nursing in Finland, while stoking my own career dreams.

I have not received any source of funding, scholarship or grants while completing this thesis.

I would like to say thank you to my supervisor Heli Vaartio-Rajalin for her invaluable support and assistance. To my school colleagues and friends Binu and Eveliina, thanks for the laughs and needed reality checks, they do not end here. To all my friends for persevering with my social absences, I can now re-join life, thank you. Finally to my family, Juuso, Oskari and Mathilda, thank you all for encouraging me to participate in this two year adventure. It has been challenging, but we have made it.

A handwritten signature in black ink that reads "Kerryn Saarinen". The signature is written in a cursive, flowing style with a prominent flourish at the end of the name.

Kerryn Saarinen

11.5.2023

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## **References**

# 1 Introduction

Nursing is facing a worldwide shortage, threatening access for many to quality health care. Since the COVID-19 pandemic which began in 2020, nurses have been leaving, or considering leaving the profession in high numbers (Berlin et al., 2022; Grinspun et al., 2022; Stewart et al., 2022). A report by the World Health Organisation (WHO) in 2020 indicated a pre-pandemic nurse shortage of 5.9 million, which is predicted to rise to 13 million in the next 10 years, with 2.5 million of those in response to COVID (Stewart et al., 2022). Solutions to nursing shortages include educating new nurses, and encouraging retention of current nurses.

Advanced nursing positions can positively impact in both of these areas. Research has shown that when nurses complete bachelor degrees, they are more likely to progress to post-graduate education such as advanced practice nursing, and post-graduate education encourages workforce retention (Stewart et al., 2022). The advanced practice nurse (APN) as described by the International Council of Nurses is:

a generalist or specialised nurse who has acquired, through additional graduate education (minimum of a master's degree), the expert knowledge base, complex decision-making skills and clinical competencies for Advanced Nursing Practice, the characteristics of which are shaped by the context in which they are credentialed to practice. (Schober et al., 2020, p. 6)

The International Council of Nurses (ICN) suggests a policy focus of investment in APN positions to aid in career progression, improve job satisfaction and retention, and to meet the complicated health requirements of our society (Stewart et al., 2022). In 2019 the Australian College of Nurses said that “advanced practice nurses are a solution, hiding in plain sight “ (p. 20). Studies in acute or tertiary inpatient settings suggest services led by APNs can improve quality of care, clinical outcomes, and patient satisfaction (Brimblecombe & Nolan, 2021; Htay & Whitehead, 2021). Tertiary settings are those which provide specialised medical care involving advanced procedures and treatments by medical specialists, usually hospitals in larger towns or cities (Merriam-Webster, n.d).

While research and nursing models have identified theoretical competency domains for APNs, there still requires greater research into the development of clear APN roles (Brimblecombe & Nolan, 2021; Whitehead et al., 2022). This scoping review of the literature hopes to identify practical clinical activities performed by APNs to aid in the development of clear position

descriptions for advanced nursing practitioners managing surgical inpatients in an acute tertiary setting.

## **2 Background**

When talking about what APNs are or what they can do, terms such as scope of practice, roles and tasks, seem to be used interchangeably which may lead to confusion. Scopes of practice are generally identified by nursing bodies, which are designed to inform APNs who they are allowed to treat and the circumstances under which they are allowed to provide care (McCabe & Burman, 2006; Schober, 2016). Scopes of practice “describe the skills, knowledge and attributes of an area and context of practice in which they are competent to practice autonomously” (Australian College of Nursing Practitioners, 2021, p. 1). A scope of practice should provide information about the accountability and responsibilities of the APN (Schlunegger et al., 2022).

APN roles on the other hand, are defined by a set of characteristics related to education, knowledge, clinical judgement and expertise, and scholarly enquiry. These characteristics should differentiate the APN role from a general nursing role (Schober, 2016). Task, as defined by the Cambridge Dictionary (2023) is “a piece of work to be done, especially one done regularly...”. Tasks of APNs are a “range of activities (procedures, actions, processes)” that can be performed within the legal boundaries as prescribed by the governing body where the APN practices (Schober et al., 2020, p. 18).

The ability of the APN to perform advanced tasks is a part of prescribed APN role competencies, but does not define what an APN is. Schober (2016) says that focusing only on tasks restricts the abilities of APNs, and competencies as described in scope of practices should include much more than just advanced tasks. It is therefore clear that these terms are quite different in meaning and not interchangeable. In this study, the term clinical activities will be used to describe a combination of roles, such as educator and mentor, and tasks such as assessing and diagnosing, that are performed by the APN and identified within the literature.

### **2.1 Advanced practice nursing**

While still being a developing role in many countries, advanced practice nursing has been a process in action for 100 years, with independent nursing roles being seen in North America already in the 1940s and ‘50s (Fagerström, 2021; Schober et al., 2020). It was reported in 2019 that 70 countries either have or are working towards having advanced nursing roles (Brimblecombe & Nolan, 2021).



Advanced nursing practice is a nursing domain based on the principles of nursing, a level of nursing practice as opposed to a type or role of practice (Australian College of Nursing, 2019; Brimblecombe & Nolan, 2021; Royal College of Nursing, 2018a; Schober & Stewart, 2019). Nurses who practice at advanced levels are clinical leaders who have developed expert knowledge and skills in the different domains of nursing: clinical, health systems, education and research (Australian College of Nursing, 2019; Bergström & Lindh, 2018; Brimblecombe & Nolan, 2021; Jokiniemi et al., 2020).

Utilisation of advanced nursing roles could play a part in improving many different aspects of health care services. From the patients' perspective, advanced nursing practice roles are seen as important in providing high quality, patient centred care (Jokiniemi et al., 2021; Ljungbeck et al., 2022; Royal College of Nursing, 2018a). In primary care APNs can improve access to quality health care, reduce avoidable trips to the emergency department and unnecessary hospitalisations, promote health prevention measures and improve management of chronic disease (Australian College of Nursing, 2019; Htay & Whitehead, 2021; Jokiniemi et al., 2020; Schober et al., 2020; Whitehead et al., 2022). Within specialised care at acute tertiary facilities, APNs can help to reduce waiting times for care, improve clinical outcomes, reduce patients' length of stay, reduce incidence of readmission, and improve patient satisfaction (Brimblecombe & Nolan, 2021; Htay & Whitehead, 2021; Schober et al., 2020).

From the health care provider's point of view, APNs can be utilised where there is a physician shortage, or where junior doctors' work hours have been restricted due to policy changes, and achieve levels of care as good as physicians (Htay & Whitehead, 2021; Wheeler et al., 2022). APNs have been shown to reduce health care costs, adhere better to recommended targets and guidelines, enhance productivity as well as the previously mentioned improved clinical outcomes (Htay & Whitehead, 2021; ICN, 2020; Jokiniemi et al., 2020; Wheeler et al., 2022).

For nurses, APNs are highly trained and experienced colleagues who can be mentors and teachers (Ljungbeck et al., 2022). Advanced nursing roles provide a structured nursing career path, and have been used by some countries to improve retention rates and interest in nursing while promoting nursing's status as a profession (Jokiniemi et al., 2020; Ljungbeck et al., 2022).

## 2.2 Advanced nursing roles

APNs are able to make independent decisions concerning the assessment, diagnosis and treatment plans of their patients, in accordance to the scope of practice as identified by their governing nursing body and legislation (Royal College of Nursing, 2018a; Wheeler et al., 2022). Within the blanket term Advanced Practice Nurse, there are four accepted roles of clinical nurse specialist (CNS), nurse practitioner (NP), nurse midwife, and nurse anaesthetist (Jokiniemi et al., 2021; Royal College of Nursing, 2018a; Schlunegger et al., 2022; Schober et al., 2020; Tracy & O’Grady, 2019; Wheeler et al., 2022). In this piece of work the focus will be on the CNS and NP. The major difference between these two roles is the clinical focus of the roles.

According to the ICN, a CNS is “an Advanced Practice Nurse who provides expert clinical advice and care based on established diagnoses in specialised clinical fields of practice along with a systems approach in practicing as a member of the healthcare team” (Schober et al., 2020, p. 6). The CNS provides non-direct care through consultation and guidance at an organisational level (Jokiniemi et al., 2021; Schlunegger et al., 2022; Schober et al., 2020; Wheeler et al., 2022). CNSs work to incorporate evidence-based care into practice, promoting change and innovation to provide best possible outcomes for patients in a variety of settings (Jokiniemi et al., 2020).

A NP is defined by the ICN as an advanced practitioner who “integrates clinical skills associated with nursing and medicine in order to assess, diagnose and manage patients in primary healthcare (PHC) settings and acute care populations as well as ongoing care for populations with chronic illness” (Schober et al., 2020, p. 6). It has been described that the NP is more involved in direct clinical practice, focusing on managing the complex and unique health needs of individual patients (Henni et al., 2021). It is important to highlight the independence of the NPs, collaborating with the medical team in the management of the patient, rather than relying on a doctor for a diagnosis (Henni et al., 2021; Wheeler et al., 2022).

The Australian College of Nursing (2019) describes a third practice role as being a combination of the predominantly clinical practice based NP role and of the consultancy CNS role. It could be viewed as a complete advanced clinician, capable of both direct and non-direct care (Mick & Ackerman, 2000). Mick and Ackerman (2000) go on to suggest, however, that this in-between hybrid role just lends further confusion to the role titles and descriptions.

The lack of clarity when describing the roles of APNs is due to the difficulties in differentiation because there is a broad range of titles, depending on the country of practice (Brimblecombe & Nolan, 2021; Jokiniemi et al., 2020; Royal College of Nursing, 2018a). Title protection, which could help provide regulation and monitoring of APNs, is not afforded in nearly fifty percent of countries where APNs are reported as practicing, including many European countries (Jokiniemi et al., 2020; Wheeler et al., 2022). It has been suggested, especially within the European Union, that there should be moves made towards conformity in APN role development, beginning with a common education model (De Raeve et al., 2017).

APNs require a master's level education, although it is beginning to be suggested that a doctorate level may be necessary for the advanced practitioner to develop the required skills (Fagerström, 2021). The level of clinical practicum varies, with minimal clinical hours supervised by a physician or experienced APN ranging from 300 to 500 hours (Schober et al., 2020; van Kraaij et al., 2020). Theoretical education requirements are also varied (Jokiniemi et al., 2021; van Kraaij et al., 2020). In Finland for example, educational recommendations suggest a NP requires a Master's degree equivalent to 90 ECTS from a University of Applied Science, whereas a CNS requires a Master's or Doctoral degree equivalent to 300-350 ECTS from a University, although there is no specific curriculum requirements for either APN education (Jokiniemi et al., 2020). In the Netherlands a 120 ECTS Master's of Advanced Nursing Practice is completed over 2 years (van Kraaij et al., 2020). Regulated guidelines on education, roles and titles would add to a clearer identity and understanding of requirements for APNs worldwide, and would simplify further role development (Brimblecombe & Nolan, 2021; Schober et al., 2020).

### **2.3 Advanced nursing in Scandinavia**

Since the turn of the 21<sup>st</sup> century there has been active development of APN roles across Scandinavia, but with little to no consistency between the countries (Jokiniemi et al., 2020, 2021). While there is consensus that APN roles can improve access to healthcare, provide better quality of care, and decrease healthcare costs, there is no singular definition of what an APN is, or what roles they undertake (Jokiniemi et al., 2021; Ljungbeck et al., 2022; Wisur-Hokkanen et al., 2015). Jokiniemi et al. (2021) explains that while Finland, Denmark and Iceland have similar CNS roles within a hospital environment, there is significant differences in their roles. Finland has focused on development of the CNS role in line with international roles, that is in a less clinical role. There are currently approximately 90 CNSs practicing

primarily in hospital settings in Finland (Jokiniemi et al., 2020). Denmark and Iceland however have CNSs that utilise more clinically based patient competencies. Norway and Sweden on the other hand have developed more NP roles. Swedish aged-care NPs are more active in the primary care setting, whereas Norway has acute-, emergency-, family care- and geriatric NPs who work in acute and primary care settings (Fagerström, 2021; Henni et al., 2021; Ljungbeck et al., 2022). Finland has a limited number of NP roles in task shifting positions within primary care (Maier & Aiken, 2016).

Each Nordic country requires a Master's degree to practice as an APN, but there is no jointly recognised curriculum in regards to length or content (Jokiniemi et al., 2021). Finland is seeing an increase of specialist nurse courses, which is a Master's level course in a specialised area of nursing, equivalent to 30-60 ECTS (Jokiniemi et al., 2020, 2021; Suomen Sairaanhoidajien laajavastuuisen hoitotyön asiantuntijaryhmä, 2023). Finland also allows limited nurse prescribing rights, which requires post-graduate education equivalent to 45 ECTS, and is also considered an advanced practice role (Jokiniemi et al., 2020). Sweden requires a transition from registered nurse to specialist nurse and then on to NP, with a mandatory amount of work experience before being able to become a NP (Ljungbeck et al., 2022). Lack of educational consensus, title recognition and regulation leads to confusion about roles and expectations of the practitioner (Jokiniemi et al., 2021; Wheeler et al., 2022).

Development of Nordic APN roles will require organisational, legislative and regulational clarification and frameworks (Jokiniemi et al., 2020; Ljungbeck et al., 2022). The Swedish government has recognised that NPs can play a part in elderly care reform, and has moved to develop the NP role (Ljungbeck et al., 2022). In contrast, APN roles in Finland are restricted by legislation. Nurses in Finland are prevented by the Finnish Health Care Professionals Act of 1994 to diagnose patients, a role identified in the accepted definition of a NP, and can only initiate care according to symptoms (Jokiniemi et al., 2020). A group formed by the Finnish Nurses Association in 2013 performed a study to establish a clear path from Registered Nurse to APN, the first time this has been done (Jokiniemi et al., 2020). In 2022 the Finnish Nursing Research Foundation released The Action Model for Expertise (FinAME, in Finnish only) which describes roles of nurse leaders and clinical competencies of advancing levels of nurse specialists. While it is not designed to describe a career structure for nurses, it can help to provide knowledge and improve understanding of APN roles descriptions, competencies, and how they can be utilised within healthcare organisations (HOTUS, 2022). Following changes to the social and healthcare system which came into effect on the first of January 2023, Finland

is beginning to look closer at advanced nursing roles and how they could be incorporated into the current system (Suomen Sairaanhoidajien laajavastuuden hoitotyön asiantuntijaryhmä, 2023).

## **2.4 Advanced nursing role development**

It is not a simple task to develop and incorporate advanced nursing roles within current career and organisational structures. Development of new advanced practice nursing roles is challenging in part because there is lack of role clarity and guidelines, and protocols may be underdeveloped (Brimblecombe & Nolan, 2021; Henni et al., 2021; Jokiniemi et al., 2020; Schober et al., 2020; Whitehead et al., 2022).

While there is a lack of research into APN role development and the transition from registered nurse to APN, there has been some attempts to describe what is required to develop APN roles (Brimblecombe & Nolan, 2021; Henni et al., 2021; Jokiniemi et al., 2020; Schober & Stewart, 2019; Whitehead et al., 2022). The Finnish Nurses Association's group have developed five recommendations which they believe should be considered to advance national APN role development: standardise titles, define job descriptions, clarify the need to amend legislation; develop education based on specialist and advanced nursing competencies; the health needs of the community will be reflected in the number of specialist and advanced roles; level of practice will be reflected in the level of remuneration; and the specialist and advanced role must be monitored and evaluated (Jokiniemi et al., 2020). These recommendations were updated in a report released by the Finnish Nurses Association in April 2023. It was suggested that the recommendations should be used to continue the discussion about the NPs future and development in Finland (Suomen Sairaanhoidajien laajavastuuden hoitotyön asiantuntijaryhmä, 2023).

Countries where APN roles are well established have scopes of practice and nurse competency guidelines in use to help clarify and improve the understanding of APN roles (Australian College of Nursing Practitioners, 2021; Brimblecombe & Nolan, 2021; Schlunegger et al., 2022). The scope of practice is a dynamic document, that reflects the APNs developing experience and education, as well as current organisational regulations and policies (Australian College of Nursing Practitioners, 2021; Schober et al., 2020). Most of the documented scopes of practice, clinical competencies or advanced practice nursing domains are very similar. The United Kingdom and Ireland utilise the Four Advanced Practice Pillars, incorporating advanced clinical practice, management and leadership, education and research

(Brimblecombe & Nolan, 2021; Htay & Whitehead, 2021; Royal College of Nursing, 2018a; Schober et al., 2020). The Netherlands utilises competencies based on CanMEDS, describing five competencies: clinical reasoning and independent diagnosing, bridging the knowledge and skills gap between physicians and nurses, being informed about current research, participates in division of management plan, and shows leadership in innovation (van Kraaij et al., 2020). Newly created roles in Norway describe nursing domains of advanced practice nursing, guidance and coaching, consultation and ethical decision making, systemic quality improvement, and collaboration (Henni et al., 2021). The Australian College of Nurses identify five nursing practice domains: clinical practice, optimising health systems, education, leadership, and research (Australian College of Nursing, 2019). These practice domains are based on the Strong Model of Advanced Practice (Mick & Ackerman, 2000). This model was developed by advanced practice nurses at the Strong Memorial Hospital in the United States. It utilised established job descriptions, position statements and standards of advanced practice to develop five practice domains for advanced practice nurses. Each domain has a direct clinical care and indirect care component.

Without a structured career framework, clear job descriptions and developed APN protocols, the transition of nurse practitioners into an organisation can be difficult (Henni et al., 2021; Ljungbeck et al., 2022; Whitehead et al., 2022). There needs to be a collaboration between health care professionals, organisations and policy makers for successful development of APN roles (Jokiniemi et al., 2020). Wheeler (2022) suggests awareness of APN roles needs to be increased, aiming at nursing colleagues, medical staff, administration, and ministries of health and government bodies. There must be acceptance of APN roles within a healthcare team to facilitate new role development. This requires the entire team to know exactly what the APN can and cannot do (Ljungbeck et al., 2022). Only when the APN role is fully understood by all involved parties can the APN role be successfully introduced, implemented, and supported to a level that guarantees success for the APN, patients, and the organisation.

### **3 Aim and research question**

The aim of this scoping review is to investigate the literature for practical clinical activity descriptions for advanced practice nurses managing surgical inpatients within an acute tertiary hospital setting. A country setting has not been specified as some of the roles may vary depending on the particular policy and legislative restrictions within each country. The research question is:

- What examples of clinical activities can be identified that the APN performs when managing surgical inpatients in an acute tertiary setting?

## **4 Methodology**

To answer the research question a scoping review of the literature was performed. This method of research was chosen as scoping reviews can be used to examine the literature for knowledge gaps, summarise the evidence, identify decision making implications and guide future research (Peters et al., 2022; Tricco et al., 2016). Scoping reviews are not limited to quantitative methodology and are able to include grey literature (Peters et al., 2022). Scoping reviews are often performed before a systematic review to identify the type and amount of knowledge available about a subject (Peters et al., 2022). While not as precise as a systematic review, there is still a requirement to use transparent and rigorous methods to ensure trustworthy results (Munn et al., 2018; Tricco et al., 2016).

Frameworks for performing scoping reviews were first described by Arksey and O'Malley in 2005 (Colquhoun et al., 2014; Peters et al., 2022). This original framework was reviewed in 2010 by Levac and colleagues, and then again in 2015, 2017, and 2020 by JBI and JBI Collaboration. The JBI framework has nine stages of completion: objects and question definition; inclusion criteria; planned searching of evidence, evidence selection, data extraction, and evidence presentation; searching for evidence; evidence selection; evidence extraction; evidence analysis; results presentation; evidence summary, conclusion and implications of the review related to aim of the study (Peters et al., 2022). The 2020 JBI framework will be used to complete this scoping review.

### **4.1 Design and context**

There is a need for exploration of what evidence is available related to the aim of the research, and that could be utilised in the development of practical APN position descriptions. As has been described earlier in this work, the NP has a more hands-on role in the management of patients, therefore the focus of the study will be on identifying specific tasks described in the literature as pertaining to NP roles. Due to the utilisation of a scoping review methodology, the inclusion of grey literature such as national policies and guidelines is allowed to investigate tasks and roles in use. These policies and guidelines have been developed using the best research evidence available to health professionals, and are considered the gold standard for patient care (Gray et al., 2012).



## 4.2 Selection process

The research question was formulated using the PCC mnemonic as a guide. From this, the inclusion and exclusion criteria were possible to be identified. A literature search was performed between December 1 2022 and December 31 2022, to identify relevant articles. The searches were performed using the CINAHL, MEDLINE, Academic search complete, and PubMed databases. The Boolean Operators used were “advanced practice nurse” OR “advanced practice nursing” OR “nurse practitioner”, AND “scope of practice” OR “roles” OR “responsibilities” OR “role description”, AND “surgical care”. A Google Scholar search utilising the search words of “advanced practice nurse”, “scope of practice” and “surgical care” was performed. Grey literature was retrieved utilising a Google search with the search term “international guidelines for nurse practitioners”. Articles included were in the English language, available in full text, peer-reviewed, quantitative, qualitative or mixed method studies, and published between January 2017 and November 2022. The exclusion criteria related primarily to the study setting. This review excluded articles if they were performed in a primary care, outpatient or intra-operative setting, or in nursing contexts other than related to surgical care.

A total of 398 articles and 150 items of grey literature were found during the search process. Automatic reviewing utilising inclusion criteria excluded 231 articles. Articles were assessed for suitability during Level One screening, which was reviewing of the abstracts. Then 54 articles available in full text were reviewed by the author during Level Two screening. This involved reading the articles in their entirety and removing articles not fitting the inclusion criteria. When the screening was completed, a final review of the citations produced a further four articles and four documents which were included in the final total of 25 sources of evidence available for data collection. The search process is summarised in the PRISMA 2020 diagram shown in figure 1.

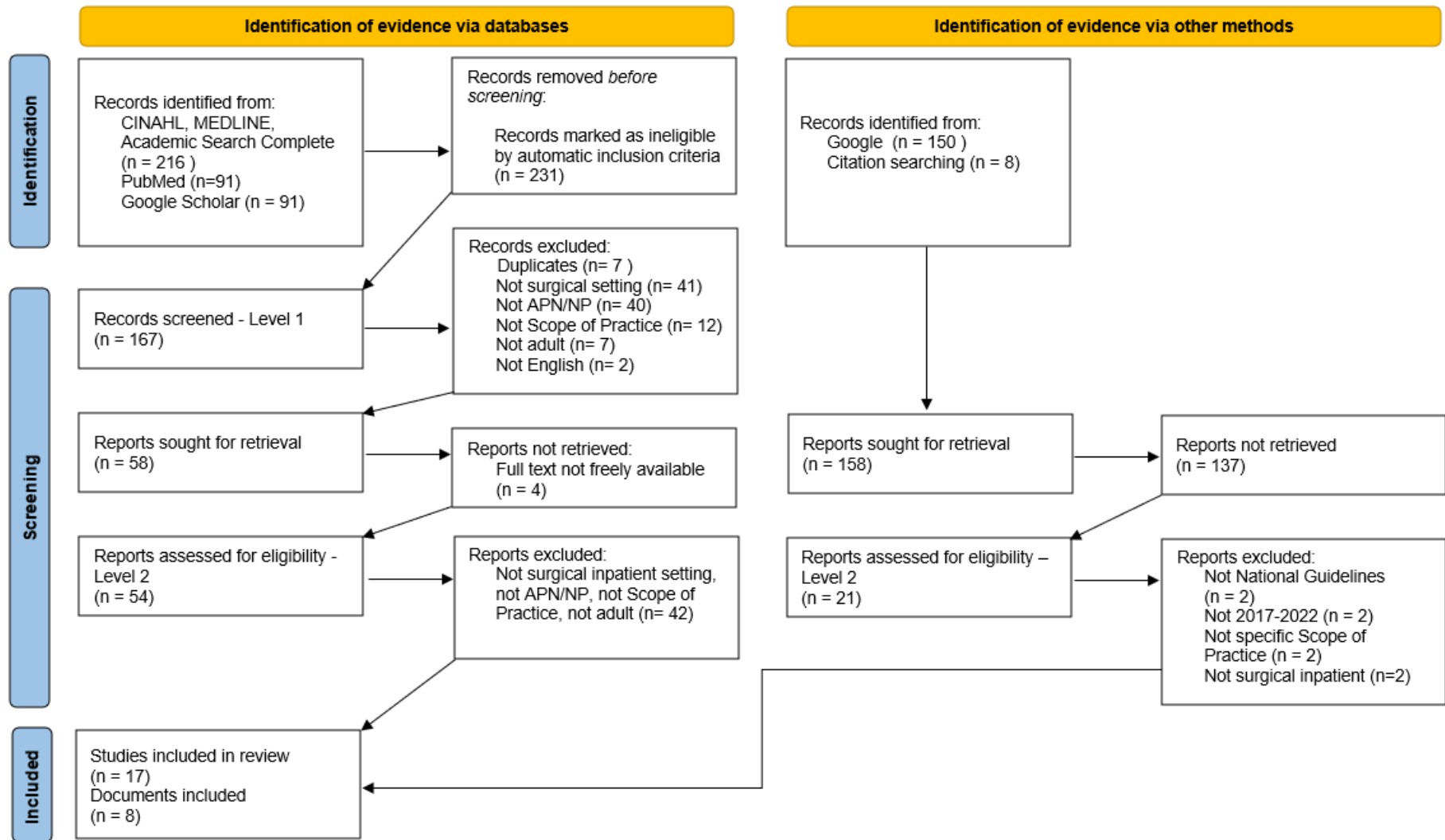
## 4.3 Data collection and material

Data extraction was completed utilising a modified results extraction instrument as described in JBI Manual for Evidence Synthesis (Peters et al., 2022). The summary of the results can be seen in Table 1 Data Extraction Table. The author was the lone data collector.

#### **4.4 Data analysis**

The data was collated and analysed to ascertain if the aim of the review and the research objective were met. An inductive qualitative analysis of the articles was performed. Qualitative inductive analysis, as described by Forman et al. (2008), is a process of discovery to help understand a particular aspect of a topic. It is often called a bottom-up strategy, which uses specific observations of a phenomenon to make broad, general conclusions about that phenomenon (Bhandari, 2022). Data collection and analysis happen at the same time through identification of recurrent points and patterns, and the inductive formation of codes. Codes should relate to the research question that is being investigated. Identified codes are then examined to highlight relationships between the codes and categorise them (Forman et al., 2008).

In this study, all articles found in the data search were analysed. Various clinical activities were identified in the data as being performed by APNs, with the activities able to be represented by a total of 106 codes. The initial codes were reviewed, with those not directly answering the research question being removed or re-phrased to better reflect what the APN did rather than who the APN was or what effect the APN had on the team, patient, or situation. Then the codes were organised firstly into sub-categories and then finally into major categories.



**Figure 1.** PRISMA 2020 flow diagram of data search process

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: <http://www.prisma-statement.org/>

## **5 Ethical consideration**

As this study is a piece of theoretical research utilising a scoping review, there are no ethical considerations in relation to having humans as research subjects as determined in the Finnish National Board on Research Integrity Guidelines 2019 (Kohonen et al., 2019). It also means according to the Åbo Akademi University guidelines no permission will need to be sought to perform this research project (Åbo Akademi University, 2022).

Having an inclusion criterion of peer reviewed articles helps to provide consistency and transparency in the data gathering process, and also shows the article meets ethical guidelines (TENK, 2022). Articles have not been excluded based on gender, race, ethnicity or age. During data collection, the use of data extraction and collection instruments and guidelines will assist in maintaining transparency. Correct referencing of data sources in accordance to the American Psychological Association guidelines will also aid in transparency and consistency (American Psychological Association, 2020).

## 6 Results

Countries represented in the reviewed documents were spread across Europe, Asia, Oceania, South America, and North America. Twenty-five documents were deemed suitable for this review, of which 40% (n=10) were national guidelines or frameworks for advanced nursing practice or the nurse practitioner role. These guidelines came from Australia, New Zealand, Canada, the United States, Ireland and three countries from the United Kingdom (UK), England, Scotland and Wales. General reviews of the state of advanced practice in a particular country made up 12% (n=3) of the articles, and they were from broadly different countries, China, Spain and Singapore. The remaining 48% (n=12) of the reviewed articles involved advanced practice with surgical patients across different surgical specialities. These specialities were orthopaedics (n=5), intensive care (n=2), urology (n=2), surgical inpatients ward (n=1), emergency (n=1), and ophthalmology (n=1).

The majority of research articles came from the UK (20%, n=5) and Australia (16%, n=4). Ireland, and the United States each had 12% (n=3) and Canada and New Zealand 8% (n=2), while China, Spain, Singapore, Argentina, Switzerland, and Sweden each had 4% (n=1) of the documents. There was one international document which was a chapter in a book looking at generalised roles not restricted to country borders.

The types of research performed are quite varied. Qualitative research methods accounted for 28% (n=7) of the articles, including two observational studies and two case studies. Identified quantitative methods were described in 8% (n=2) of the documents, with one being a cohort study. Literature reviews (8%, n=2) were also utilised. One (4%) mixed article was included, and one (4%) was a descriptive article with no stated research method. As well as the previously mentioned ten national guidelines, a further two articles were descriptive articles but stated they aimed to be frameworks for APN roles in particular surgical specialities (40%, n=12).

The 106 codes identified during the inductive analysis, resulted in the formation of sub- and main categories. Each main category was not represented equally, with Independent Clinical Care comprising a larger amount of identified roles and tasks than Clinical and Professional Advancement, Management and Education. Table 2 contains the evidence for Independent Clinical Care. This main category included the sub-categories of advanced medical/nursing skills, direct patient centred care, patient care management, providing continuity of care, provision of patient support and acting within prescribed limits. These incorporated APN tasks

**Table 1***Data Extraction Table*

<b>CITATION</b>	<b>COUNTRY</b>	<b>CONTEXT</b>	<b>PARTICIPANT DETAILS</b>	<b>DETAILS/RESULTS</b>
Alberto et al.. (2017)	Argentina/Australia	Prospective, descriptive, observational, single site study.	Adult patients (n=200), mean age 52,5 years. All were treated in the ICU.	Main roles were follow up post ICU discharge, ward referral, non-medical treatments, referrals for escalation of treatment, and referral to higher level of care.
American Association of Nurse Practitioners (2022)	USA	Standards of Practice		NPs practice autonomously, in coordination with other health care professionals. Clinical role including diagnosis and management of complex health problems, illness prevention, health education, counselling and documentation. Non-clinical roles such as research, interdisciplinary consultancy and patient advocates.
Batty, J (2021)	England	Qualitative evaluation study, utilising semi-structured interviews.	Nurses (n=6) and junior doctors (n=4), who work on an elective orthopaedic ward.	ANPs were members of the medical team while respecting their nursing background. They provided continuity and clinical expertise, were supportive, worked closely with the ward team, delivered effective, and person-centred care.
Canadian Nurses Association (2019)	Canada	A framework supporting a coordinated pan-Canadian approach to APN implementation and integration.		Primary focus of APN is comprehensive direct clinical care, while incorporating education, research, leadership and optimisation of the health system.
Chief Nursing and Midwifery Officers Australia (2020)	Australia	Survey of employers followed by a symposium	Stakeholders from education, regulation, health policy, professional organisation, nurses.	Regulated role of NP, clinical focus but participates in research, education and leadership as related to clinical care
Chun et al. (2021)	Hong Kong and mainland China	Case study utilising questionnaire survey and semi-structured interviews, mixed method.	Advanced Practice Nurses (n=24)	Roles of APNs described in domains. 80% of time was spent in independent APN activities such as direct/indirect care, research, development of protocols.
Coventry et al.(2017)	Australia	Retrospective cohort study, utilising multivariate linear regression analysis.	Hip fracture patients in comparison (n=354) and intervention (n=301) groups, average age 84 years, over 70% female.	Orthopaedic NP roles include co-ordination of care in line with evidence-based practice. ONP provides guidance, consultation, leadership, treatment options, referrals, and performs discharge planning, chart reviews and follow-up.

Dreyer et al. (2018)	Scotland	Descriptive article describing the role of a testicular cancer APN		Testicular cancer APN roles: interdisciplinary liaison, care planning, management and coordination, patient support, ordering and interpretation of tests, communication, patient follow-up, holistic patient care.
Griffiths (unknown)	Wales	Multidisciplinary group developed a framework for advanced nursing practice.		APN roles reflected in Four Pillars of Advanced Practice: Clinical practice, education, research and Management Leadership. Individual roles have different compositions of all the pillars.
Kvarnström et al. (2018)	Sweden	Qualitative ethnographic study. Participant observations (170 hours) of interprofessional rounds (n=60), inductive analysis.	Four surgical hospitals in Sweden. Observed teams comprised NP (n=5), doctors (junior, resident and specialist surgical), registered nurses, nurse assistants, nursing and medical students, a total of n= 89 health professionals.	NP involved in interprofessional teamwork which involves clinical leadership, being a bridging colleague and constant tutor.
McConkey and Hahessy (2018)	Ireland	Descriptive article. Development of a framework for an urology APN role.		Utilising APN autonomous clinical decision making, advanced skills, and knowledge to improve systems of care and manage a caseload of urology patients.
Naef et al. (2020)	Switzerland	Qualitative evaluation study. Semi-structured interviews, focus groups, content analysis.	Family members (n=19) and surgical ICU staff (n=19)	APN focus on communication, support, consultation, co-ordination activities.
New Zealand Nurses Organisation (2020)	New Zealand	Position Statement		APNs autonomously and collaboratively utilises greater skills and knowledge, assessment and decision making skills and integrates theory. Roles may overlap with other professionals groups.
Nursing and Midwifery Board of Australia (2021)	Australia	Standards of Practice for NP		NPs provide autonomous, clinically focused nursing care. Perform complex critical decision making, integrate evidence based care, participate in research, education and leadership. Plan, implement and evaluate care.
Nursing and Midwifery Board of Ireland (2017)	Ireland	Survey results, focus groups, and a working group developed the standards.	250 nurses and midwives, response rate 92% (n=193)	Quality, evidence based, person-centred care. APN Roles described under six domains: 1. Professional values and conduct, 2. Clinical decision making, 3. Knowledge, 4. Communication, 5. Management and teamwork, 6. Leadership and professional scholarship.

Nursing Council of New Zealand (2017)	New Zealand	Description of competencies required by NP for practice		Knowledge, skills and attitudes required for advanced practice, organised into five themes: 1. Safe and accountable practice, 2. Assess, diagnose, plan, implement and evaluate care, 3. Partnership with consumers, 4. Collaboration with healthcare teams, 5. Improve healthcare quality and outcomes.
O'Rourke (2022)	Australia	Literature review. Literature search Jan 2008- Jan 2020. Excluded, non-English, non-peer reviewed and grey literature.		Identifies scopes of practice for Orthopaedic NP. Trauma management including fracture management, performance of procedures, prescribing, managing outpatient clinics, pain management.
Palmer (2018)	USA	Doctoral Dissertation, Case study utilising open interviews, participant observations, surveys.	Orthopaedic NP (n=2), Medical Practitioner (n=2), Nurse Manager (n=1), Administrator (n=). Interviews were performed in the workplace of the participant.	Orthopaedic NP requires highly specialised knowledge and skills. Utilises evidence-based practice in care and decision making. Research and leadership. Consultant to other healthcare professionals.
Parlour et al. (2020)	Ireland	Descriptive chapter in a book.		Member of the multidisciplinary emergency team, involved in collaboration, discharge planning, care coordination, and implementation of a systems approach to care. Can autonomously take a patient history, clinical assessment, request and interpret investigations, develop a treatment plan.
Persaud-Sharma and Hooshmand (2021)	USA	Descriptive article.		Ophthalmology NP can evaluate, assess, diagnose, treat and discharge patients, manage patient care. Perform minor procedures autonomously.
Royal College of Nursing (2021)	United Kingdom	Standards of practice for ANPs.	Collaboratively researched and developed by Nursing and Midwifery council (England), institutions of higher education, professional groups and health care providers.	Describes general roles of APNs under the headings of the four pillars of practice utilised in the UK. These are clinical/direct care, leadership and collaboration, development of self and others, and improving and developing quality practice.
Scottish Government (2017)	Scotland	Governmental paper on Transforming Nursing, Midwifery and Health Professions' Roles.		Utilises four pillars of practice: clinical practice, facilitation of learning, leadership and evidence, research and development. Perform autonomous assessment, diagnosing and treatment for patients with complex problems. Able to refer, admit and discharge patients.



Sevilla Guerra et al.(2017)	Spain	Cross-sectional study, utilising variance and multivariate regression analyses.	Specialist and expert nurses (n=165) in a tertiary and community hospital in Spain. Aged between 21 - ≥ 60 years.	APN roles described using the APRD tool, with roles performed across the six practice domains, dependent on the context of the APN position.
Spence et al. (2019)	Canada	Literature review	Nine articles were reviewed, focusing on inpatient surgical or orthopaedic inpatient/outpatient settings.	NPs are part of the orthopaedic multidisciplinary team. They are competent to work in pre and postoperative care and clinics, care for patients in surgeons absence.
Woo et al. (2019)	Singapore	Survey with closed-ended responses, content analysis.	APN (n=87) in active practice in Singapore.	Used APRD tool to infer APNs spend most of their time in direct patient care and less time on other roles including research, professional leadership and publication. Also concluded there is a need for clarity in APN roles.

such as patient assessment, history taking, diagnosing, treating, prescribing, referring, admitting, discharging, ordering tests and investigations and interpreting their findings, performing minor procedures, being patient advocate, providing holistic care, managing patient care plans, improving patients experiences, taking responsibility and accountability for own actions, being able to act independently while using professional codes of conduct and performing within described scopes of practice. All of the articles of evidence were represented in this main category.

Clinical and Professional Advancement as described in Table 3 encompasses the APNs self-development, advanced medical/nursing knowledge and research and development. The need for own practice development and improvement was mentioned in each of the national guidelines and standards of practice used as evidence. It was recognised that APNs had more comprehensive knowledge that could be used in decision making, some saying they acted as doctors. Research and development was the largest sub-category, comprising quality control and monitoring effectiveness of interventions, use of evidence based practices, participation in and application of research, clinical development, influencing both health policy and nursing practice, implementing improvements, leading change, supporting systems and advertising the APN role to others.

Table 4 shows that the Management category had two sub-categories comprising ward level organisational roles, and also multi-professional team work. Ward level roles varied from running of nurse-led clinics to ordering of supplies. It also included general ward organisation and utilisation of resources, understanding patient flow, administration, attending meetings, providing leadership, and utilising decision making, communication and conflict resolution skills. Multi-professional team work saw APNs being a bridge between professions, collaborating and networking with other professionals, performing as a consultant and being a part of team work.

The Education category included educating nursing and medical colleagues, patients and family, and health promotion. As seen in Table 5, APNs share knowledge with and provide educational support to nurse colleagues. They are seen as an educator, mentor and role model, and they participate in the supervision of other NPs. APNs also share their knowledge with doctors, and provide organisational support to doctors. Patient education is an identified role of the APN, as is the implementation of preventative care, promotion of health and community

outreach. APNs are also able to identify health risk factors, social determinates of health, and promote a safe environment to provide care.

Not all the identified roles in the evidence were positive. Table 6 Negative Clinical Activities highlights undesired clinical activities which were described in some of the evidence. APNs were seen as being a helper who performed leftover jobs that no one else wanted to do. Some required endorsement from the physicians and others cared for less complex patients.

Table 2

*Independent Clinical Care*

SUB-CATEGORIES	CODES	EXAMPLES	
Advanced medical/nursing skills	Patient assessment	“NPs can provide comprehensive patient assessments...” (O’Rourke, 2022)	
	Advanced level of practice	“Advanced and specialist practitioners may be functioning at an extremely high level of practice...” (Scottish Government, 2017)	
	Diagnosing	“...take responsibility for the clinical management of a group of patients by leading discharge planning process, diagnosing...” (Griffiths et al., unknown)	
	Treating	“characterised by high level autonomous decision making, including assessing, diagnosing and treating...” (Scottish Government, 2017)	
	Prescribing	“range of assessment and treating intervention...prescribing medicines...”(New Zealand Council of Nurses, 2017)	
	Referring	“...delegating and referring as appropriate...” (Royal College of Nursing, 2018b)	
	Admitting	“NPs...privileges to admit, treat and discharge clients.” (Canadian Nurses Association, 2019)	
	Discharging	“ANP has the freedom and authority to admit and discharge...” (Parlour et al., 2020)	
	History taking	“Specific NP duties in POA clinics included history taking...” (Spence et al., 2019)	
	Interpreting clinical findings	“...take responsibility for...interpreting investigations...” (Griffiths et al., unknown)	
	Ordering tests and investigations	“...requesting, initiating and interpreting diagnostic investigations.” (Chief Nursing and Midwifery Officers, 2020)	
	Minor procedures	“NPs...may also perform minor clinical procedures such as reducing dislocations and fractures...” (O’Rourke, 2022)	
	Use of technology	“...use existing and emerging technology...” (Royal College of Nursing, 2018b)	
	Direct patient centred care	Patient screening	“...for referred patients conduct baseline screening...” (Persaud-Sharma & Hooshmand, 2021)
		Patient review	“The role includes daily patient review...” (Coventry et al., 2017)
Patient care		“APNs spend most of their time on direct patient care...” (Woo et al., 2019)	
Clinical role		“...enacting autonomous clinical practice at an advanced level...” (Mc Conkey & Hahessy, 2018)	
Holistic care		“NP practice model emphasised patient centred, holistic care...” (American Association of Nurse Practitioners, 2022)	
Based on patients’ needs		“...works in partnership with the person receiving care...” (APHRA - Nursing and Midwifery Board of Australia, 2021)	
Encourages patient participation in health care		“Facilitates patient participation in health care...” (American Association of Nurse Practitioners, 2022)	
Provide care in accordance to national standards		“NPs blend ...current evidence and national standards of care...to manage patient care...” (American Association of Nurse Practitioners, 2022)	
Connectedness with patients		“We are nurses first and we really connect with the patients...” (Palmer, 2018)	
Care evaluation		“NPs collaborate...to plan, implement and evaluate integrated care...” (APHRA - Nursing and Midwifery Board of Australia, 2021)	
Patient case management	Documentation	“NP roles included...coordination of care and documentation.” (Spence et al., 2019)	
	Manage complete care	“...formulates an action plan for the treatment of the patient...” (Scottish Government, 2017)	

	Patient advocate	“In addition to clinical role, NPs may serve as...patient advocates.” (American Association of Nurse Practitioners, 2022)
	Meets patient’s health care needs	“...establishing priorities to meet the health care needs of the individual...” (American Association of Nurse Practitioners, 2022)
	Care plan management	“The ONP can ensure that all patients...are provided with a management plan...” (O’Rourke, 2022)
	Optimise health outcomes	“ANPs had positive impact on patient experience, patient outcomes and patient safety.” (Parlour et al., 2020)
	Improve patients experience	“Identifies the need for change... implements...initiatives to improve the patient experience...” (Chief Nursing and Midwifery Officers, 2020)
	Critical thinking	“Advanced practitioner...can make a decision based on judgement and critical thinking/problem solving.” (Griffiths et al., unknown)
	Clinical governance	“Provides leadership in clinical governance...development, implementation and evaluation of evidence-based standards of practice, policies and procedures.” (Chief Nursing and Midwifery Officers, 2020)
Promoting continuity of care	Increase access to health care	“Nurse practitioners...increased access to care...” (Spence et al., 2019)
	Consistency	“AN practice improving access to care, consistency in delivering standards of care...” (Mc Conkey & Hahessy, 2018)
Provision of patient support	Patient point of contact	“...act as a central contact point for the patient...” (Dreyer et al., 2018)
	Continuity of care	“Patients reported better communication, continuity of care...with NPs in specialty/surgical settings.” (Spence et al., 2019)
Within prescribed limits	Patient support	Use of “patient support (WeChat) groups, and then I can readily answer their questions...” (Chun et al., 2021)
	Counselling	“NPs provide a wide range of health care services...and counselling...” (American Association of Nurse Practitioners, 2022)
	Care follow up	“I need to...guide them step by step with prompt follow up...” (Chun et al., 2021)
	Provides family support	“APN...offered emotional and practical support to families.” (Naef et al., 2020)
	Take responsibility and accountability for actions	“Advanced practitioners... have the freedom to exercise judgement about actions, in turn accepting responsibility and being held to account...” (Griffiths et al., unknown)
	Freedom to act independently	“ANP...have the freedom and authority to act, making autonomous decisions...” (Royal College of Nursing, 2018b)
	Scope of practice non-setting specific	“NP scope of practice is not setting specific, and is based on the needs of the patient.” (American Association of Nurse Practitioners, 2022)
	Using professional code of conduct	“...utilising the professional code of conduct appropriately...” (Royal College of Nursing, 2018b)
	Autonomous	“...NP alternately took autonomous positions that are traditionally attributed to either RNs or physicians.” (Kvarnström et al., 2018)
	Within scope of practice	“NPs spend time in direct patient care... that fit within their defined scope of practice” (New Zealand Nurses Organisation, 2020)
	Working to the full extent of education	“...allowed NP to practice to the fullest extent of their education and training...” (Palmer, 2018)

**Table 3***Clinical and Professional Advancement*

SUB-CATEGORIES	CODES	EXAMPLES
Self-development	APN's level of experience	"...the levels of training and education...is achieved by engaging in a process of gaining competency through experience, expert knowledge, education and training..." (Parlour et al., 2020)
	Own practice development and improvement	"...on-going reflection, clinical supervision and engagement in continuous professional development." (Nursing and Midwifery Board of Ireland, 2017)
Advanced medical/nursing knowledge	Utilises higher level of knowledge	"NPs consider...therapeutic interventions using their comprehensive knowledge when planning care." (APHRA - Nursing and Midwifery Board of Australia, 2021)
	Advanced judgement	"Advanced practitioners...have the freedom to exercise judgment about actions..." (Griffiths et al., unknown)
	Another doctor	"...you act as doctors, you make decisions" (Batty, 2021)
Research and development	Quality control	"...worked as team leader of the hospital quality control circle..." (Chun et al., 2021)
	Utilisation of evidence based practices	"Advanced practitioners deliver advanced practice which is evidence based..." (Griffiths et al., unknown)
	Participation in, and application of research	"...support and conduct research that is likely to enhance practice." (Royal College of Nursing, 2018b)
	Clinical development	"ANPs were seen as a resource for the clinical development of staff." (Batty, 2021)
	Influences health policy	"Influences and critiques health policy and nursing practice..." (New Zealand Council of Nurses, 2017)
	Monitoring effectiveness of interventions	"...actively monitoring the effectiveness of therapeutic interventions." (Royal College of Nursing, 2018b)
	Leading change	"Manages complex projects or leads projects relating to significant practice change within the service or organisation." (Chief Nursing and Midwifery Officers, 2020)
	Role advertising	"...regular education on role of the ICULN and encouragement to utilise..." (Alberto et al., 2017)
	Influence nursing practice	"...influence health/socioeconomic policies and nursing practice at local and national level." (New Zealand Nurses Organisation, 2020)
	Implement improvements	"implement improvements in health care, including delivery structures and processes." (Canadian Nurses Association, 2019)
System support	"Affects healthcare delivery, organisation, management, workforce planning, policy, and research outcomes." (Sevilla Guerra et al., 2018)	

**Table 4***Management*

SUB-CATEGORIES	CODES	EXAMPLES
Ward level organisational roles	Problem solving	"...making a decision based on judgement and critical thinking/problem solving." (Griffiths et al., unknown)
	Ward organisation	"ANPs also had a positive impact on other multidisciplinary staff...quality of working life, distribution of workload..." (Parlour et al., 2020)
	Patient flow	"...understand the flow of the ward and need for timely discharge." (Batty, 2021)
	Leadership	"Under the leadership of the NP, necessary actions by the team were performed...." (Kvarnström et al., 2018)
	Decision Making	"...the NP was asked by the nurse to assist in care decisions." (Kvarnström et al., 2018)
	Utilisation of resources	"...demonstrating effective use of resources and the ability to delegate and refer in order to optimise health care outcomes." (Chief Nursing and Midwifery Officers, 2020)
	Communication	"Patients also reported improved communication when NPs were part of the orthopaedic team." (Spence et al., 2019)
	Conflict resolution	"...demonstrate...skill in communication, negotiation, conflict prevention, management and resolution..." (Canadian Nurses Association, 2019)
	Order supplies	"Order incontinence/ostomy supplies." (Canadian Nurses Association, 2019)
	Administration	"Certify people for medical expense tax credit...sign medical certificates...complete medical reports for people to receive higher pension..." (Canadian Nurses Association, 2019)
Running of nurse-led clinics	Meetings	"...we all have our own independent clinics in which we will see consults..." (Palmer, 2018) "Guangzhou nurses spent more time in attending meetings..." (Chun et al., 2021)
Multi-professional team work	Team work	"Essential to the extension of ICULN scope of practice is collaborative interdisciplinary team work." (Alberto et al., 2017)
	Bridge between professions	"...role and function of the NPs as bridging the gap between nursing and medical staff..." (Kvarnström et al., 2018)
	Collaboration with other professionals	"Initiate timely and appropriate consultation, referrals and collaboration with other health-care providers." (Canadian Nurses Association, 2019)
	Networking	"...develop and sustain new partnerships and networks to influence and improve health..." (Royal College of Nursing, 2018b)
	Performing as a consultant	"In addition to clinical role, NPs may serve as health care researchers, interdisciplinary consultants and patient advocates." (American Association of Nurse Practitioners, 2022)

Table 5

*Education*

SUB-HEADING	CODES	EXAMPLES
Educating nursing colleagues	Sharing knowledge with nursing staff	“NP also paired with the RN, and they took turns providing professional nursing information.” (Kvarnström et al., 2018)
	Educational support to nurses	“ANPs were seen as a resource for the clinical development of staff...seen as supportive, available and approachable.” (Batty, 2021)
	Educator	“Plan and seize opportunities to generate and apply new knowledge to their own and others practice in structured ways...” (Royal College of Nursing, 2018b)
	Supervisor of other nurse practitioners	“...described their role as direct care provider and supervisor of NP co-workers...” (Palmer, 2018)
	Mentorship	“Act as a mentor, preceptor, coach or role model for nursing colleagues, other members of the health care team and students.” (Canadian Nurses Association, 2019)
	Role model	“Advanced practitioners deliver advanced practice...whilst acting as positive role models...” (Griffiths et al., unknown)
Educating medical colleagues	Sharing knowledge with doctors	“NPs acted as a constantly present tutor to learners such as junior and resident physicians” (Kvarnström et al., 2018)
	Organisational support to doctors	“...you know we turn up every six months and we flap, and we don’t know how to do things. So,...you know and can teach us how everything works.” (Batty, 2021)
Patient and family education	Patient education	“being that patient advocate...but really getting down to education of what their condition is and how to take care of themselves in the future...” (Palmer, 2018)
Health care promotion and risk prevention	Preventative care	“ONP implements interventions for the prevention of pre- and post-operative complications...” (O’Rourke, 2022)
	Health promotion	“NPs provide a wide range of health care services...health promotion; disease prevention; health education...” (American Association of Nurse Practitioners, 2022)
	Identifying health risk factors	“The ONP can take a comprehensive history to identify risk factors for osteoporosis...” (O’Rourke, 2022)
	Social determinates of health	“Assess health status...identifying health risk factors; evaluating social determinants of health that may influence the patients’ health and wellness.” (American Association of Nurse Practitioners, 2022)
	Promotion of safe environment	“RANPs promote provision of quality care that ensures effective patient outcomes in safe environments.” (Nursing and Midwifery Board of Ireland, 2017)
	Community outreach	“NP roles were evaluated at three levels with the highest level demonstrating an aspect of leadership in the community outside of the orthopaedic department.” (Palmer, 2018)



**Table 6***Negative Clinical Activities*

SUB-HEADING	CODES	EXAMPLES
Undesired role descriptions	Doing leftover jobs Helper	“...doing jobs that nobody else wants to do...” (Kvarnström et al., 2018) “Perceptions of the ONP varied...independent provider, helper, team support, physician extender...” (Palmer, 2018)
	Caring for less complex patients	“NPs functioned more independently and cared for less complex patients.” (Spence et al., 2019)
	Require endorsement from physicians	“We can only do patient assessment and make suggestions to the physicians. The final decision still lies with the physicians.” (Chun et al., 2021)

## 7 Discussion

The aim of this study was to identify clinical activities that APNs perform in acute tertiary surgical inpatient settings. The results of this scoping review (n=25 articles) show that while the identified tasks are very broad, they were able to be classified into four main role affirming categories that are in alignment with previous knowledge: independent clinical care, clinical and professional advancement, management, and education (Mick & Ackerman, 2000; Schober et al., 2020). The results of the review have also identified a category of negative clinical activities, which has not always been highlighted in previous literature.

### 7.1 Independent clinical care

A majority of identified activities occurred under the category of independent clinical care. Activities being performed under the independent clinical care category, such as holistic care, ordering and interpreting clinical tests and findings, patient advocacy, and providing patient and family support, reflect the centrality of the patient to the APNs role, as highlighted in the Strong Model of Advanced Practice Nursing (American Association of Nurse Practitioners, 2022; APHRA - Nursing and Midwifery Board of Australia, 2021; Canadian Nurses Association, 2019; Chief Nursing and Midwifery Officers, 2020; Chun et al., 2021; Griffiths et al., unknown; Mick & Ackerman, 2000; Naef et al., 2020; O'Rourke, 2022; Palmer, 2018; Parlour et al., 2020; Royal College of Nursing, 2018b; Spence et al., 2019). The importance of clinical patient care to APNs is also represented by this category having more identified activities than the other categories. Direct patient centred care and advanced medical/nursing skills also reflect the descriptions of NPs being clinically based APNs (Henni et al., 2021; Schober et al., 2020).

Many of these advanced medical/nursing skills identified in the independent clinical care category correspond to those mentioned by De Raeve (2017), and have been adopted through task shifting. Task shifting is the performing of tasks that have been previously performed by other health care professionals, usually doctors (Maier & Aiken, 2016; Parlour et al., 2020; Persaud-Sharma & Hooshmand, 2021; Whitehead et al., 2022). The ability of APNs to complete patient assessments and take comprehensive patient histories, diagnose, prescribe, refer, discharge, and even perform minor procedures, have led to APNs sometimes being called mini doctors (American Association of Nurse Practitioners, 2022; APHRA - Nursing and Midwifery Board of Australia, 2021; Batty, 2021; Canadian Nurses Association, 2019; Coventry et al., 2017; Dreyer et al., 2018; Griffiths et al., unknown; Kvarnström et al., 2018;

Mc Conkey & Hahessy, 2018; New Zealand Council of Nurses, 2017; New Zealand Nurses Organisation, 2020; O'Rourke, 2022; Parlour et al., 2020; Persaud-Sharma & Hooshmand, 2021; Royal College of Nursing, 2018b; Scottish Government, 2017; Spence et al., 2019). However as identified in the literature, APNs are not acting as doctors, but they are able to perform independently to the full extent of their APN education while remaining within the prescribed limits to practice, as described within clear scopes of practice that are non-setting specific (American Association of Nurse Practitioners, 2022; New Zealand Nurses Organisation, 2020; Palmer, 2018; Royal College of Nursing, 2018b; Sevilla Guerra et al., 2018).

The ICN (Schober et al., 2020) in its Guidelines for advanced practice nursing describes scope of practice for CNS broadly as direct or indirect care, but doesn't describe any particular tasks. NP scope of practice is described generally as providing advanced clinical care in different clinical settings with broader autonomy, and including referral of patients and integration of education, research, and leadership. No specific tasks or roles are described, but examples of more descriptive national scopes of practice are given (Schober et al., 2020). Various scopes of practice or APN guidelines developed by national nursing bodies were found as grey literature during this review. They contain broad examples of clinical activities the APN can perform, which are categorised similarly to those identified by this review (American Association of Nurse Practitioners, 2022; Canadian Nurses Association, 2019; Chief Nursing and Midwifery Officers, 2020; Griffiths et al., unknown; New Zealand Council of Nurses, 2017; Nursing and Midwifery Board of Ireland, 2017; Royal College of Nursing, 2018b; Scottish Government, 2017).

## **7.2 Clinical and professional advancement**

The second category identified from the analysis incorporates clinical and professional advancement. Through scholarship (Mick & Ackerman, 2000), the acquirement of higher levels of knowledge and experience, APNs are able to make advanced judgements in patient care (Griffiths et al., unknown; New Zealand Council of Nurses, 2017; New Zealand Nurses Organisation, 2020; Parlour et al., 2020; Royal College of Nursing, 2018b). APNs are not only required to improve their own skills, but utilise research and clinical development to assure quality clinical care (American Association of Nurse Practitioners, 2022; APHRA - Nursing and Midwifery Board of Australia, 2021; Batty, 2021; Canadian Nurses Association, 2019; Chun et al., 2021; Coventry et al., 2017; Griffiths et al., unknown; Kvarnström et al., 2018;

New Zealand Council of Nurses, 2017; Nursing and Midwifery Board of Ireland, 2017; Palmer, 2018; Parlour et al., 2020; Persaud-Sharma & Hooshmand, 2021; Royal College of Nursing, 2018b). The amount of research performed by APNs varies depending on the position description and context the APN is working in (Chun et al., 2021; Griffiths et al., unknown). Research by van Kraaij et al. (2020) suggests that current NPs would like more opportunities to participate in research projects and policy related tasks. Evidence based practice should be used by the APN to influence nursing practice in their workplace, and also health policy at an institutional level (American Association of Nurse Practitioners, 2022; APHRA - Nursing and Midwifery Board of Australia, 2021; Canadian Nurses Association, 2019; Chief Nursing and Midwifery Officers, 2020; Griffiths et al., unknown; New Zealand Nurses Organisation, 2020; Nursing and Midwifery Board of Ireland, 2017; Sevilla Guerra et al., 2018; Woo et al., 2019).

An important aspect of professional advancement is the advertising of the APN role. In areas where positions are emerging, APNs need to be able to describe what activities they are able to perform, and how the position can benefit the patient and organisation (Alberto et al., 2017; APHRA - Nursing and Midwifery Board of Australia, 2021; Mc Conkey & Hahessy, 2018). Previous research has shown that the APN must have a clear understanding of their role, and be able to communicate this to both staff and patient groups (Brimblecombe & Nolan, 2021; Henni et al., 2021; Ljungbeck et al., 2022).

### **7.3 Management**

Category three identifies management tasks related to multi-professional teamwork and ward level organisational roles of the APN. APNs often take a leadership role on wards, sometimes being required to take on the role of charge nurse in the absence of managers (Alberto et al., 2017). APNs are also utilised to manage nurse-led clinics which may involve ordering of supplies and administration tasks (Alberto et al., 2017; Canadian Nurses Association, 2019; Chun et al., 2021; O'Rourke, 2022; Palmer, 2018; Parlour et al., 2020; Persaud-Sharma & Hooshmand, 2021; Spence et al., 2019). In both of these settings the APN is required to utilise their advanced problem solving, conflict resolution, communication and decision making skills (APHRA - Nursing and Midwifery Board of Australia, 2021; Canadian Nurses Association, 2019; Griffiths et al., unknown; Kvarnström et al., 2018; New Zealand Council of Nurses, 2017; Nursing and Midwifery Board of Ireland, 2017; Palmer, 2018; Royal College of Nursing, 2018b; Spence et al., 2019).

Networking can help to be utilised to promote and develop both advanced practice and APN roles (Griffiths et al., unknown; Royal College of Nursing, 2018b). Prior research shows that networking with other NPs can provide support both professionally and educationally (Whitehead et al., 2022). APNs may also be required to act as a consultant for other health care professionals (American Association of Nurse Practitioners, 2022; Chief Nursing and Midwifery Officers, 2020; Palmer, 2018). APNs working in acute care rely on teamwork and collaboration with other professionals (Alberto et al., 2017; Canadian Nurses Association, 2019; Chief Nursing and Midwifery Officers, 2020; Kvarnström et al., 2018; Nursing and Midwifery Board of Ireland, 2017; Palmer, 2018). This is seen as crucial by Henni et al.(2021) to the development of the APN role, and research shows collaboration with physicians can lead to better patient outcomes (Htay & Whitehead, 2021).

As a reflection of the APNs advanced medical/nursing knowledge, role as a consultant, and participation in multi-professional teamwork, APNs may be seen to be in a bridging role between nursing and medicine (Batty, 2021; Kvarnström et al., 2018; Mc Conkey & Hahessy, 2018; Schlunegger et al., 2022). However the organisation of the multi-professional team, and the place the APN takes within the team may lead to questions regarding the autonomy of the APNs practice. This supposition is supported in research by van Kraaij et al. (2020) that suggests that overlapping scopes of practice between APNs and doctors may make it difficult for APNs to practice autonomously. Chun (2021) explains that while APNs in Hong Kong and mainland China are able to perform patient assessments, it is the doctor who oversee the process and made final decisions. There are also descriptions as to how APNs work in “colleague pairings” (Kvarnström et al., 2018, p. 769) to discuss patient care, in collaboration with consultants to plan patient care (O’Rourke, 2022), as an extension of the physician (Palmer, 2018; Spence et al., 2019), or under the supervision of doctors (Persaud-Sharma & Hooshmand, 2021). While this may seem to limit the autonomy of the APNs, they are still performing as APNs according to the level of education they have attained, and the prescribed scope of practice of their national nursing body in respect to the other tasks they are performing such as clinical assessment, ordering and interpreting investigations, performing minor clinical procedures, prescribing medications, providing patient education, and maintaining care quality (Kvarnström et al., 2018; O’Rourke, 2022; Persaud-Sharma & Hooshmand, 2021). While the ICN and various countries scopes of practice identify APNs as independent practitioners, there is also recognition that roles and tasks will vary according to the context of practice (Schober et al., 2020).

## 7.4 Education

Education, which includes educating nursing colleagues, medical colleagues, patients and their families, and performing health care promotion and risk prevention, is the fourth category identified from the analysis and also one of the Strong model's practice domains (Mick & Ackerman, 2000). APNs act as educators by sharing their advanced medical/nursing knowledge and skills with both nursing and medical colleagues, either through formal methods or informal bed-side teaching (Batty, 2021; Kvarnström et al., 2018; Parlour et al., 2020; Royal College of Nursing, 2018b). The benefits of this task is supported by previous research which shows that when NPs teach others, this can lead to increased competence among other staff (Ljungbeck et al., 2022). The constant presence of the APN in the work environment allow the provision of learning support to nurse colleagues by being physically present to teach nurses new skills and organisational support to junior doctors (Alberto et al., 2017; Batty, 2021; Chun et al., 2021; Kvarnström et al., 2018; Mc Conkey & Hahessy, 2018; Parlour et al., 2020). APNs are also required to supervise newer APNs, and be a role model or mentor as needed (APHRA - Nursing and Midwifery Board of Australia, 2021; Canadian Nurses Association, 2019; Griffiths et al., unknown; New Zealand Council of Nurses, 2017; Nursing and Midwifery Board of Ireland, 2017; Palmer, 2018; Woo et al., 2019). The availability of and access to mentors and suitable supervision must be considered when developing new APN positions (Brimblecombe & Nolan, 2021). The importance of the mentor role is shown in research by Whitehead et al. (2022), that suggests support received from a mentor is imperative to the successful implementation of NP positions as well as job satisfaction and retention of NPs.

Patient and family education is also an important responsibility of the APN. The APN should provide the patient with information on current treatment as well as possible disease progression, complications or follow up required, while assessing for possible health risk factors or social circumstances that may affect the patients' health and treatment (American Association of Nurse Practitioners, 2022; APHRA - Nursing and Midwifery Board of Australia, 2021; Dreyer et al., 2018; O'Rourke, 2022; Palmer, 2018; Spence et al., 2019). Through community outreach the APN can promote health, safe environments and provide preventative health care to the broader population (American Association of Nurse Practitioners, 2022; APHRA - Nursing and Midwifery Board of Australia, 2021; Canadian Nurses Association, 2019; New Zealand Council of Nurses, 2017; Nursing and Midwifery Board of Ireland, 2017; O'Rourke, 2022; Palmer, 2018).

## 7.5 Negative clinical activities

The national guidelines and scopes of practice identified as grey literature focused on positive aspects of APN roles and tasks. However negative aspects to APN roles were often discussed in the research papers identified in this scoping review. Therefore a fifth category of activities was required in the analysis, that of negative clinical activities including undesired position descriptions. APNs were recorded as performing tasks that were not seen as advanced practice, or were simply left over jobs (Kvarnström et al., 2018). The APN was seen as a helper to the medical team (Palmer, 2018), or able to care only for less complex patients (Spence et al., 2019). As previously described, some APNs were also required to get endorsement from physicians when treating patients (Chun et al., 2021).

The reasons for these undesired tasks are most probably due to lack of understanding of the APN role, lack of support for the role or failure to consider the practicalities of role development. Brimblecombe and Nolan (2021) state that unclear roles provide a major challenge to APN role development. This is supported by Henni et al. (2021) who explains that lack of guidelines or regulations for APNs makes it difficult to develop roles. However, APNs can utilise collaboration with medical staff to demonstrate their advanced knowledge and skills and improve understanding of the APN role (Henni et al., 2021). Without the support of medical staff the introduction of APN roles may not be successful (Brimblecombe & Nolan, 2021).

## 7.6 General discussion

APN roles have been established in various acute care specialties such as orthopaedics, gastroenterology, urology, vascular and ophthalmology (Alberto et al., 2017; Batty, 2021; Coventry et al., 2017; Dreyer et al., 2018; Mc Conkey & Hahessy, 2018; McCabe & Burman, 2006; Naef et al., 2020; O'Rourke, 2022; Palmer, 2018; Persaud-Sharma & Hooshmand, 2021; Spence et al., 2019). In Finland these roles are more commonly known as "specialist nurse roles" (Jokiniemi et al., 2020, p. 6). It has been acknowledged that it is essential that the APN has advanced knowledge of the specific speciality (Batty, 2021; Mc Conkey & Hahessy, 2018; Palmer, 2018). APNs in these established positions seem to perform more independent and perhaps more advanced activities, which are spread over all of the identified activity categories, ranging from assessment and making diagnoses (O'Rourke, 2022; Spence et al., 2019), developing clinical management plans and performing clinical procedures, to implementing evidence based practice, providing patient education, providing timely patient discharge, and

mentoring of fellow staff members (Batty, 2021; Coventry et al., 2017; Mc Conkey & Hahessy, 2018; O'Rourke, 2022; Palmer, 2018; Persaud-Sharma & Hooshmand, 2021; Spence et al., 2019). This is consistent with previous research that has established that in countries who have highly developed scopes of practices, there is a higher degree of medical task shifting towards APNs (Maier & Aiken, 2016).

The findings of van Kraaij et al. (2020) showed that tasks are influenced by the context of the workplace, and there may be similarities between current APN activities and those performed in earlier nursing roles. This is supported in this study where tasks identified as being ascribed to APNs in different contexts include discharge planning, performance of patient falls, pressure area and malnutrition risk assessments, and contacting multidisciplinary team members (Chun et al., 2021; Coventry et al., 2017). Personal experiences would suggest that these tasks are usually performed by general registered nurses in Australia and Finland. By utilising the Strong Model APRD tool it was shown in Spain and Australia that registered nurses in lower positions perform more APN tasks related to clinical care than APNs or higher grade nurses, whereas APNs and higher positioned nurses performed more research and management related tasks (Gardner et al., 2006; Sevilla Guerra et al., 2018). Diversity in tasks performed by APNs in different settings may reflect the level of practice of general registered nurses in the country being examined.

APNs employed in acute surgical contexts in tertiary settings utilise their advanced medical/nursing knowledge and skills to perform clinical activities across four main categories as identified in this analysis. The extent to which activities within each of the four categories are performed depends on the context of the acute surgical APN role. The APNs activities will reflect the identified needs of the population, and context of the workplace. Lack of knowledge about what activities an APN can perform can lead to APNs not being able to practice to the full extent of their education.



## **8 Methodological considerations**

Limitations in the study can be related chiefly to it being performed by only one researcher. The researcher has no previous experience in completing a scoping review, collecting data or performing an inductive content analysis, which could diminish the methodological rigor of the study (Forman et al., 2008). Having only one data collector could perhaps lead to bias in the results, as well as affect the degree of reflexivity and therefore methodological rigor of the study (Forman et al., 2008).

A librarian was accessed to assist with the inclusion and exclusion criteria, and search parameters. However, there was still some difficulty in finding appropriate search terms due to the inexperience of the researcher, and this could have affected the results of the literature search.

The qualitative inductive analysis, which was performed for the first time and completed by the single researcher, may have been exposed to some bias in the categorisation due to knowledge of previously identified practice domains or scopes of practice. However, the thesis supervisor was used in validation of the analysis process. As the study looked at clinical activities in the context of surgical inpatients in tertiary hospitals, it may be too broad an overview to result in meaningful clinical activity descriptions which could be transferred to APN positions in specific surgical specialities.

## 9 Conclusion

In response to worldwide nursing shortages, health services are being forced to look at how they can encourage recruitment and retention of nurses. One such method is the development of advanced practice nursing with an advanced knowledge and skill base. This scoping review shows that in countries with established APN positions there is a general set of activities performed by APNs, which have been identified and documented as scopes of practice. In addition to these, role specific tasks can be found when describing what APNs can do in specific contexts such as acute care surgical APN roles. Clinical activities identified in the analysis as being performed by acute care APNs in a surgical setting can be categorised into four broad categories, independent clinical care, clinical and professional development, management and education. These are similar to those utilised in the Strong model of Advanced nursing practice and described in advanced nursing domains of practice. APNs perform tasks across all of these categories, but the extent to which each category is performed depends on the context of the surgical APN role. This study has also discovered negative role attributes that should be considered when discussing tasks performed by APNs, to ensure that APNs are able to practice to their full capabilities.

This research could be used to assist in the development of acute surgical care APN roles and position descriptions. The results could be used in conjunction with participatory action research or the PEPPA framework to develop NP roles. In Finland where NP roles are in development, the results could be used as part of the process to prepare general scopes of practice. Further research could be performed following on from this scoping review to identify more specialty specific clinical activities.

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