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Research paper

Research nurses in New Zealand intensive care units: A qualitative descriptive study

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ABSTRACT

Background: This study explored the role of the research nurse in New Zealand (NZ) Level III intensive care units (ICU). Little was known about this role in NZ prior to this study.
Objectives: To describe the role and responsibilities of NZ ICU research nurses.
Methodology: A qualitative, descriptive approach, using semi structured interviews was used.
Results: The study was conducted in six Level III ICUs throughout NZ that employed a research nurse. Interviews were conducted with research nurses (n = 11), principal investigators (n = 6) and nurse managers (n = 6), and the findings were triangulated. The views across all ICUs and stakeholders were generally similar, with differences only being in some operational areas. This study found that the primary role of the research nurse was trial management, where they coordinated all elements of trial conduct. Almost half of the research nurses were involved in trial design through their positions on management committees. Research nurses also played a vital role in patient and trial advocacy, and they bridged the knowledge gap by bringing research to staff nurses, patients and their families. The majority of research nurses reported to a nursing line manager, and had an informal accountability to the PI.
Conclusion: The role of NZ ICU research nurses is similar to their international counterparts. This study provides clarity about the research nurse role and showcases their key contribution in ensuring that NZ ICUs undertake high quality research, thus contributing to potential improvements for future patients' outcomes.

1. Introduction

Nurses play an important role in delivering intensive care services internationally. Over time, their role has changed considerably to include leading hospital outreach programs,[1] transferring patients to home to die,[2] and research.[3] In New Zealand (NZ), there are currently 22 adult intensive care units (ICUs) in public hospitals and a further three in private hospitals. These ICUs follow the guidelines set out by the College of Intensive Care Medicine (CICM) professional group. In these guidelines, research is listed as an essential aspect of ICU work. Many also belong to the Australian and New Zealand Intensive Care Society Clinical Trials Group (CTG), which requires a research coordinator to be a member of a trial management committee, in order for that study to be CTG-endorsed. In NZ, the research coordinator role title is usually research nurse.[3] In other countries, research nurses are also referred to as research coordinators, study coordinators, clinical research nurses, and similar titles. Research nurses are employed to manage and coordinate clinical trials.[3,4] Despite the first research nurse being employed specifically for this role since 1997 at Auckland Hospital, little is known about the extent of their role in research, their routine activities, and their contribution to ICU patient care. This study explored the role of research nurses in NZ ICUs. Understanding who and how this role works is important for NZ to contribute to national and international research in intensive care.

2. Background

The term “research coordinator” in reference to nurses was first used in the literature in 1970[5] and the term research nurse in 1976.[6]

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The volume of literature on research nurses increased throughout the 1980s and 1990s, with much of the early literature being experiential accounts about this emerging role.[7–12] Issues about the role that were evident included whether research nurses could be considered nurses as their colleagues often regarded them as data collectors[13] and whether research nursing was a speciality.[12,14] Empirical studies quantifying and delineating the role of the research nurse began to emerge from North America in the mid-2000s, and several have been published since. These studies point to a clearly defined role for the research nurse of managing clinical trials and ensuring a study protocol is adhered to, in order to produce quality research.[15–19]

There is consistency in the literature about the activities research nurses perform for clinical trials. The most frequently reported activities concern clinical skills/patient monitoring, managing the study protocol, educating staff and patients/relatives, treatment administration (drug or other), collecting specimens and other research data, completing case report forms, monitoring for and treating adverse events, ensuring informed consent, monitoring of protocol adherence, and reporting non-compliance or protocol deviations.[15,19–26] Less commonly reported is the research nurse's contribution to protocol planning and development.[21,26] Nagel et al. found that more qualified clinical research nurses were more likely to participate in protocol assessment, subject recruitment, obtaining informed consent, data management, and performance of the professional nursing role.[19] One study reported that research nurses balance patient advocacy and welfare with the rights and welfare of a patient as a research participant (subject advocacy) and advancing research goals and ensuring that the right patients were recruited and the study protocol adhered to (study advocacy).[23]

Much of the literature about the role of research nurses has been undertaken in general settings with less acutely unwell participants. NZ ICUs have high acuity patients, catering for acutely injured and medical patients across the life span (excluding neonates) as well as caring for many patients during the first 24 h of postoperative care following major surgery. Studies set in Australasia include NZ respondents; but have not analysed for differences between the Australian and NZ ICUs.[21,26]

3. Methods

3.1. Aim

The main aim of this study was to describe the role and responsibilities of ICU research nurses. The objectives were to (i) describe the demographics of research nurses currently working in NZ ICUs and (ii) identify important components of the role, the work they did, and any differences across NZ.

3.2. Design

A qualitative descriptive design with semistructured interviews was used to describe the role and responsibilities of the research nurse. Qualitative description aims to accurately describe a particular phenomenon or aspect of society.[27]

3.3. Setting

Level III ICUs tertiary referral centres in NZ. This setting was chosen because the CICM guidelines require these ICUs to conduct research and employ research coordinators [sic]. ICUs which employed a research nurse at the time of the study were included, and paediatric ICUs were excluded. Staff from all six Level III units that met the eligibility criteria participated in the research.

3.4. Sample

Research nurses, principal investigators (PIs), and nurse managers who worked in the Level III ICUs were the participant groups. Inclusion criterion for research nurses was they had to have been in their role for more than 6 months and for PI, they had to be managing a current ICU research project. Sampling was purposive with potential participants initially approached by email by the primary researcher requesting research participation. All eligible participants consented to participate in the interview.

3.5. Data collection

Semistructured interviews were used as these enable participants to expand on topics they consider important, while also allowing for some uniformity in the data.[28] Interviews were audiotaped and took place in 2011. The setting for the interviews was a private office at the participants' workplace, except for one which was conducted by phone due to participant scheduling. The interviews asked about five areas: participant background, research accountability and funding, the research nurses' role and responsibilities, processes around studies, and future development of the role (Table 1). Emphasis on a particular area was adjusted according to the participant's role. A responsibility assignment matrix (RAM), more commonly used in project management,[29] was used to obtain participant's understanding about the responsibilities research nurses performed. RAM findings report level of responsibility of the research nurses on particular research tasks. The 23 interviews were an average of 59 min (range 30–101). Interviews were transcribed by the primary author and a professional transcriber. Participants were offered the opportunity to review their transcript and draft RAM, which five chose to do, with one research nurse making minor clarifications.

3.6. Analysis

Manual content and thematic techniques were utilised for analysis.[30,31] The eight steps involved are summarised in Table 2. Triangulation was used to examine the findings from different lenses including by role, topic, and ICU.

3.7. Rigour

As a research nurse at the time of the study, the first author (DM) identified “insider knowledge” as a source of potential bias during the interviewing and coding. To overcome this, she employed reflexivity, by being aware of her own values, following the interview schedules as closely as possible and recording field notes. Interview transcripts were reviewed by the second author (KN), who was DM's master's supervisor. An audit trail about analytical decisions was recorded.

3.8. Ethical considerations

The study was approved by the Victoria University of Wellington Human Ethics Committee. As the NZ ICU research community is small, all participants would have been known to each other; therefore confidentiality of participation was unavoidable. In the presentation of findings, participants are de-identified.

4. Results

Each ICU had one PI, one nurse manager, and between one and three research nurses participating.

Table 1
Interview schedule.

Topic	Type of question
Background	
FTE, remuneration, clinical/research mix, length of service, prior positions, training in role	Closed
Job description, recent performance appraisal	Closed
Expectations prior to starting role	
Accountability and funding	
No of research nurses/PIs	Closed
ICU structure, accountability, financial decisions	Open
ICU research/research nurse funding	Open
Mix of studies (pharmaceutical/investigator-led)	Open
CICM guideline about tertiary ICUs having a research nurse	Open
Hospital research department role	Open
Importance and funding of Australia/NZ research meetings	Open
Research nurse role	
Current studies	Closed
Work allocation	Open
Description of last or typical research day	Open
Description of an atypical day	Open
Importance of being a nurse for research role	Open
Contribution to patient care and advocacy	Open
Skills important for role	Open
Processes around studies	Open
Role in protocol development, consent, management committees	Open
Challenges	Open
Participation in nursing research	Open
Processes around studies	
Considering new trial	Open
Starting a new study (budget, Maori consultation, locality, ethics, information sheet, consent, contract, staff education, other)	Closed
Day to day management (ethics, recruitment, screening, consent, data collection, follow-up, monitoring, liaison with bedside nurse)	Open/closed
Development of the role	
What do you think needs to happen to develop the role?	Open
View of ANZICS CTG recommendation to have an RC on the management committee of CTG-endorsed studies	Open

ANZICS CTG = Australia and New Zealand Intensive Care Society Clinical Trials Group; CICM = College of Intensive Care Medicine; FTE = full-time equivalent; ICU = intensive care unit; PI = principal investigator.

4.1. Participants and employment conditions

Table 3 summarises the research nurse participant characteristics. The 11 research nurses were all female and all but one worked part-time in their research role (mean = 0.64 full-time equivalent [25.6 hrs], range 16–40 hrs per week). The research nurses were expected to be available after hours to answer research questions and enrol patients into some research studies. In one ICU, they were paid an on-call allowance; whereas, in the other five ICUs, this was a tacit arrangement based on goodwill. Some participants were employed on the national nurses' Multi Employer Collective Agreement Senior Nurse scale 2–3. Seven of the nurses also worked as a "bedside" ICU nurse, making their employment full-time in five cases. All research nurses were experienced ICU nurses (mean 17.8 yrs, range 4–33), and all had a postgraduate qualification with four having a Master's degree, one of whom was studying towards a doctorate. They had been employed in their research role for a mean of 6.1 years (range 1–14 yrs).

Table 2
Steps for data analysis.

Step	Activity
1	Read through all transcripts as a whole
2	Extract "content" data from transcripts, e.g., demographics; RAM
3	Open coding of each transcript
4	Synthesis and identification of codes into themes
5	Re read transcripts for review and confirmation of themes
6	Group analysis by ICU
7	Group analysis participant role
8	Triangulation of grouped analysis

ICU = intensive care unit; RAM = responsibility assignment matrix.

The most common model of accountability (n = 5) was a professional accountability to the nurse manager, and a usually informal clinical trial (operational) accountability to the PI. Despite the nurse manager being their official line manager in all but one ICU, several research nurses regarded the PI as their "boss", and some found this dual accountability challenging. Many participants reported that the research nurse had a closer working relationship with the PI, and some PI and research nurse participants questioned the appropriateness of a nursing hierarchy.

> *It's a little bit complicated in terms of the staffing because professionally they have to report through the nursing hierarchy, which I have to say is a bit inappropriate I think but that's the way it is. The salaries are on the nursing scale and we can't seem to get out of that and their professional accountability seems to go up through the nursing hierarchy whereas I'm a kind of a business manager I guess for that part of the business rather than the professional manager.* PI01, Lines 85–91

Although employed as senior nurses, not all participants, particularly the nurse managers, considered the research nurse role a senior role within the ICU structure. Where the nurse managers did consider them seniors, this tended to be related to their ICU experience and not their research role. PIs overwhelmingly regarded the research nurses as senior nurses and were their biggest advocates. The research departments were often considered "separate" from the ICU, which sometimes led to difficulties with recruiting for studies and being "part of the team".

The thematic analysis identified three themes: research nurses as trial managers, balancing patient needs with study requirements, and bridging gaps with staff, family, and others. There is overlap between the themes with the patient and their safety central to all aspects of the research nurse role. It was widely acknowledged by all participant groups that without research nurses, there would be little or no research in ICUs, being variously described as the "link", "lynchpin", the "driver of research", and the "glue that makes research happen".

4.2. Trial management

The primary role of the research nurse was the management of research trials. They were involved in trial design, selection of appropriate trials for their ICU, pre-trial activities, day-to-day management, and trial closure (Table 4). Much work was done prior to a trial commencing including ethics applications, budgets, contract negotiation, liaison with other departments, and staff education. The majority of trial work was in the day-to-day maintenance, where research nurses identified suitable patients, enrolled patients, ensured all trial-related activities were carried out, including tests and drug protocol adherence, monitoring and reporting of protocol violations, following up of patients, and where appropriate, obtaining patient consent. Significant time was spent screening for and recruiting patients. In some ICUs, it was predominantly the research nurses who identified patients, while in others, ICU staff assisted. The research nurses were also responsible for ensuring that ethical and governance standards were upheld. In the main, research nurses did these tasks either alone or in collaboration with the PI, with whom a close relationship was identified. The RAM findings show there was generally consensus

Table 3
Research nurse participants' demographics.[a]

Participant	Research FTE	ICU FTE	Time in ICU Research Nurse role (years)	Previous research experience (years)	ICU experience (years)	Highest qualification
RN	0.4	0.2	5.0	0.5	17	Post Graduate Diploma
RN	0.4	0.6	5.0	0	10	Post Graduate Diploma
RN	0.8	0	9.0	0	20	Post Graduate Certificate[b]
RN	1.0	0	14.0	0	33	Masters (coursework)
RN	0.6	0.4	1.5	0	10	Masters (coursework)
RN	0.6	0	1.2	0	17	Post Graduate Certificate[b]
RN	0.6	0.4	7.0	0	24	Post Graduate Diploma
RN	0.5	0	12.0	0	29	Masters (by thesis)
RN	0.8	0.1	6.0	0	18	Masters (by thesis)
RN	0.9	0.1	3.0	0	14	Post Graduate Certificate[b]
RN	0.5	0.5	1.0	5.0	4	Post Graduate Diploma

FTE = full-time equivalent; ICU = intensive care unit; RN = research nurse.
[a] Identifiers have not been included in this table, as it may lead to quotes being identifiable throughout the article.
[b] Refers to an ICU-specific qualification.

Table 4
Summary of participants' views of research nurse responsibilities.

Task	Research nurse (n = 11)				Principal investigator (n = 6)				Nurse manager (n = 6)			
	R	A	C	I	R	A	C	I	R	A	C	I
Assessing a study												
Study feasibility	8	2				1	2		3	1		
Workload assessment	7	1			2	1			3	1		
Final decision	3	1	1		1	1	1		1	1	1	
Study preparation												
Budget	10	1			2	1			4	1		
Maori consultation	9	7			1	5			3	2		
Locality assessment/hospital registration	11				5				5			
Ethics application and ongoing ethics requirements	10				6				6			
Development of information sheet and consent forms	10	1			6				5			
Contract/fee negotiations	6									1		
Educates nurses about study		9				5				5		
Educates doctors about study	5	2			1	1				4		
Liaises with other departments	1	2										
Study maintenance												
Identification of potential patients	11	10				4				2		
Completes screening log	11	11				4				2		
Feeds back to staff if patients are missed	10	10				2				1		
Participates in consent process	9	3			3				3	1		
Administration or facilitation of study treatment	10	10				2				1		
Data collection	10	10			4	4			2	2		
Data entry	10	10			4	4			2	2		
Answers data queries	8	8			2	2						
Patient follow-up	10	10			2	2			1	1		
Notices and reports protocol violations	10	10			5	5			2	2		
Notices and reports serious adverse events	8	2			5	2			3	1		
Monitoring visits	7	7			2	2						

A (Accountable) = person who has responsibility for a task; C (Consulted) = person who is consulted about a task; I (Informed) = person who is informed about a task; R (Responsible) = person who does a task.

between the participant groups and across the ICUs about the specific roles research nurses fulfilled (Table 4). Where there was inconsistency between the views of participants, it may have indicated that the participant did not view this as a role of the research nurse, or in the case of assessing a study for suitability for an ICU, that this was considered a team decision.

4.3. Consent

Research nurses played a significant role in the process of obtaining consent. In NZ, consent can only be obtained from a patient when they are conscious, yet patients usually need to enter into ICU studies when unconscious and can therefore not consent. A requirement for enrolling unconscious patients is to ascertain the patient's wishes, which research nurses often did by speaking with the family about research studies. In some cases, the nurses had sole responsibility for this process; while in others, they had an initial conversation with the family, which the doctor continued. Another requirement for enrolling unconscious patients into research studies is determining that the study is in the patient's best interests. Medical staff are the only people who can make that decision.

There was consensus that all patients or their families were asked as soon as they were able whether they would like to continue to participate in studies. All research staff involved in the process were aware that this process, enabled ICU patients to participate in research, and spoke about this practice with respect. The nurses' role was influenced by the different levels of consent risk. Studies which were considered lower risk such as comparing two standard treatments (e.g., intravenous fluids) commonly used in ICU largely had the research nurses (in five ICUs) obtain patient consent to the study, once they become conscious.

4.4. Balancing patient needs with research requirements

Patient advocacy was a key role identified primarily by research nurse participants. They reported that patient advocacy began at the beginning of a trial, with the development of the study protocol. Four research nurses had been or were currently on a study management committee. This allowed these nurses to give significant input into the trial protocol and therefore conduct of the trial. Once the protocol was developed and the trial was running, adherence to the protocol was considered important in protecting the safety of patients and the validity of the trial. Although PIs had overall responsibility for reporting adverse events and protocol deviations, the research nurses usually identified and reported these.

The research nurses reported that part of patient advocacy was ensuring patients received the opportunity to participate in research and supporting patients or families who did not wish to participate in research studies.

> *It starts right from the beginning, making sure you're putting the right patient into the study so that the study gets the right participants and is a true reflection of that group. So you're protecting the study requirements and then you're making sure that the intervention that's to be delivered is delivered correctly. And you might see that at the bedside or you might see it when you're collecting the data and realise that there's been a mistake made or something's gone wrong and then you're educating the staff at the same time in terms of the study requirements, what to watch out for, for adverse events or whatever. So you need some knowledge of the patient and the care that's being provided whether it's a standard care or the intervention. And then educating the family when you're talking to them for consent and the same with the patient hopefully later on as well. So making sure that the patient is getting the best possible care, that they're not at risk by being in the study. And that the study data and study requirements are all met and true*. (ResN08, L. 738–752)

4.5. Bridging gaps and making research happen

Research nurses were seen as having specialist knowledge, which bridged both ICU and research. There was variance about whether it was necessary to be an ICU nurse to be an ICU research nurse although being proficient in ICU was generally considered more important than a background in research as it was considered that research could be taught more easily than ICU care. One key reason why familiarity with ICU nursing was important was the relationship research nurses required with clinical nurses. Research nurses were identified as "bridging gaps" between research and the "bedside" nurse, and this bridge was critical for ensuring that a study protocol was maintained and patients were not put at any additional risk. This was achieved through frequent communication and education about research. In many cases, this meant that the research nurse did trial-specific activities themselves; while in other cases, they delegated and had responsibility for ensuring tasks were done correctly and in a timely fashion. This role extended to translating the research protocols to patients and their families in an understandable way.

There was significant frustration about the lack of research culture in four ICUs, and this was considered the greatest challenge for research staff. At the lower end of the spectrum, the research nurses knew that depending on which intensivist was in charge for the day, they would need to make a *"good case"* to be allowed to approach a patient for a study. At the other end of the spectrum NM05 stated that there were *"one or two* [senior] *doctors here who are quite obstructive and always don't want the patients in the trials"* (L. 610–611). Research Nurse04 summarised this issue: *"Everybody believes in evidence-based practice and they like to think that they do it, but there's a real aversion if it requires any extra work"* (L. 719–721).

5. Discussion/conclusion/implications for practice

5.1. Primary role—trial management

This study has shown that the main role of the research nurse is managing clinical trials, which is in line with international literature.[15,16,19–26,32] There was a shared consistency about the role between ICUs and the views of the three groups of participants. Research nurses became experts on individual trials and probably knew more about the practical aspects of conducting the study than any other person involved. There was a focus on administering the protocol, protocol adherence, data collection, patient follow-up, and consenting. The research nurses were responsible for the ethical components of trial set-up including writing ethics submissions, information sheets and consent forms. They also facilitated contract negotiations, liaised with other departments, and educated nurses (and sometimes doctors) about new trials. One important component of their daily work was screening and recruitment for studies. Where ICUs relied on funding from studies, recruitment was essential to generate this. This led to the research nurses working closely with other staff because patients can be admitted and therefore eligible for enrolment at any time. Recruitment was previously articulated as part of the role by Hill and MacArthur[32] and Roberts et al.,[26] with Hill and MacArthur reporting that research nurses were dependent on recruiting patients to pay their salary.

Research activities were divided between research nurses and PIs according to practicalities such as availability and expertise. This division of labour is not only the delegation of duties[16] but is also the practical application of teamwork in the healthcare setting.[33] Teamwork in research is not only practically advantageous but offers patients the best that professional groups have to offer. The finding that research nurses had different knowledge to doctors, who tended to have a more scientific approach was similar to those of Snelgrove and Hughes.[34] These authors identified nursing knowledge as being holistic which was similar to the findings in this study. When PIs spoke of the research nurse, they appreciated the practical elements and expertise they brought to the role; however, they never spoke about more nursing-focused activities such as patient advocacy. Similar to Anderson,[35] research nurses were found to work in partnership with PIs, and there was significant trust between them. The PI trusted the research nurses to do difficult trial-related tasks, which they would then "sign off". Research nurses respected that trust and would seek their guidance and help when required as seen in the study by Mueller and Mamo.[18] The research nurses had a close and autonomous working relationship with the PI, who held them in high regard. They worked with research nurses and delegated responsibilities such as obtaining consent to them, as the research nurses became more experienced. While this delegation was reminiscent of Mueller and Mamo's[17] findings that duties were delegated along socially stratified lines from higher (doctor) to lower (nurse), the close working relationship described in this study was more indicative of a collegial and collaborative division of labour according to skill set and work expectations. Research nurses were solely responsible for the day-to-day management of the trials, which was not delegated but was considered their work. This close nurse–doctor relationship is reportedly more common in specialised areas such as ICU, where nurses are seen as having specialised knowledge.[36,37]

The role of the research nurse was identified as essential for ICUs participating in the research. While some of the reasons may have been pragmatic, it was also recognised that research nurses had extensive skills and experience, both in ICU and research. The research nurse was the "face of research" for nurses and patients and "made research happen" on a daily basis. To achieve this, they needed to be skilled and knowledgeable. There was resistance from research nurses being referred to as "just data collectors". While all acknowledged data collection was an important aspect of their role and reflected a respect for the patients' contribution, research nurses did not want to be defined by this. Perhaps this side of the role is all that many clinical staff see, but the research nurses role was so much more. Research nurses were not "doing doctors work" although it was highlighted that few were leading their own research, which is an area that may be developed in the future.

Many research nurses and PIs spoke about their frustrations with medical and nursing staff, and the "lack of a research culture" was reported in four ICUs. This was reflective of the study by Spilsbury et al.[38] where management had agreed to participate in a trial, then the ward staff were uncooperative with study treatment. In the case of ICUs, this result is of concern given that the CICM Minimum Standards of Intensive Care[39] state that Level III ICUs should have an "active research program" and "employ a research coordinator". On the basis of the Minimum Standard, it could be assumed that all nurses and intensivists would want research to occur in their ICUs, yet the lack of cooperation was cited as a barrier to recruiting patients into research studies. Johnson[40] completed a thesis on the perspectives of nurses towards clinical trials in one NZ ICU. This study reported that nurses needed more education and support to implement clinical trials because of the impact on their workload. Without speaking to (non-research) intensivists, it is impossible to determine why they do not fully participate in studies, even though their ICU has agreed to participate.

5.2. Balancing patient and trial needs

The role of patient advocacy is congruent with the finding of Davis et al.[23] who identified research nurses as balancing the needs of the patient with the study requirements. This is extremely important in ICU, where there is the added factor of the patient's critical illness, bedside nursing staff, and dealing with patients' families at a very difficult time. Although nurses obtain patient consent for research in other research environments in NZ,[41] in ICU there is the added difficulty of patients being unconscious, some of whom will never recover. As outlined, a system has evolved in different ICUs where research nurses obtain consent for some trials where patients are receiving one of two standard treatments.

Research nurses' participation at the protocol development stage, by way of being a member of the study management committee was identified as a further and important way of advocating for the patient. The nurses also added a practical element to the study protocol, which would further balance the needs to the study with those of the patient. This unsurprisingly echoed the findings of Rickard et al. (2006) and Roberts et al. (2011b) who reported 67% and 73%, respectively, of study respondents identified protocol development as part of their role in Australian and NZ ICUs.

It is a guideline for all CTG-endorsed studies to have a research coordinator [sic] on the trial management committee. This is extremely important for both the smooth-running and practical elements of the trial, as well as the balancing of patient and trial needs. It is unknown whether this is common outside of Australia and NZ.

While this study did not aim to assess satisfaction of the ICU research nurses, several issues arose which could improve the role including stronger management structure, recognition of their role as senior nurses, and remuneration for being "on call". Issues such as these arise when a role evolves without clear structure or direction. These conditions have improved in NZ ICUs since this research was undertaken, with at least one hospital introducing a career pathway.

6. Limitations and research recommendations

The RAM study matrix was used to identify consistency about the role from the three participant groups. A limitation to these findings is that data are only available where the participants shared this information as each question was not specifically asked. It also did not address who completed a task if it was not part of the research nurse's role. On occasion where a participant did not know what the role of the research nurse was for a specific study task, no answer was given, which is not reflected in the RAM.

Several avenues for further research were identified throughout this study. These concern the issue of consent, research culture, knowledge translation, and other ICU professionals' views about research issues in ICU. Incorporating bedside nurses and non-PI doctors would be a useful adjunct to this study as their viewpoint has not been heard.

Although this study has extended the boundaries of what is known by seeking the views of the nurse manager and PI, it highlights that research nurses work with many other professional disciplines within ICU. The lack of research culture in ICUs was a significant problem and impacted directly on the research nurse role. It is difficult to know how to improve this, but further investigation is important. It would be useful to know what other intensivists and nurses in the ICU setting think about research and find out why they do not participate more actively. What are the barriers to conducting research? Do staff nurses and non-research doctors consider it part of their role?

Future research must also be, and to some extent already is, focused on the financial and social savings benefits of ICUs participating in research. Additionally, work must focus on translating these research findings into ICU patient care, thus improving outcomes for intensive care patients. The role of the research nurse in such practice development work should be explored. Finally, the increased value research nurses add to this research through increased recruitment and having a dedicated role should be included in these studies.

7. Conclusion

Research nurses in NZ ICUs had similar roles and responsibilities to their international counterparts, which mainly involved the management of clinical research trials within their ICU. In addition, the NZ-based research nurses had a role as patient advocates, balancing the needs of the patient with those of the trial, as well as bridging gaps between staff, patients, and families. Research in ICU patients is essential to improve patient survival and long-term outcomes, and research nurses have a significant role in ensuring that research is conducted safely in this challenging environment. There was shared understanding of the role, except related to seniority, which means that the nurses have fairly clear boundaries around their work which is recognised. The importance of this is it means that the clinical team is likely to understand and appreciate their role.

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