Journal of Clinical Nursing

WILEY

Journal of Clinical Nursing

SCOPING REVIEW OPEN ACCESS

Exploring the Role and Skill Requirements of Registered Nurses Working in Rural and Remote Areas. A Scoping Review

Danielle Rogers[1,2] | Pauline Calleja[3,4] | Amy-Louise Byrne[5] | Ashlyn Sahay[1]

[1]Central Queensland University, Norman Gardens, Queensland, Australia | [2]University of Sunshine Coast, Hervey Bay, Queensland, Australia | [3]James Cook University, Douglas, Queensland, Australia | [4]Central Queensland University, Cairns, Queensland, Australia | [5]Central Queensland University, Sydney, New South Wales, Australia

Correspondence: Danielle Rogers (danielle.jocumsen@cqumail.com)

Received: 27 October 2024 | **Revised:** 23 January 2025 | **Accepted:** 3 February 2025

Funding: This research was completed as part of a Doctor of Philosophy through CQ University and gratefully acknowledges the Australian Government Research Training Program (RTP) funding. The primary author would like to gratefully acknowledge the University of Sunshine Coast for the allocation of workload towards this research.

Keywords: registered nurse | roles | rural and remote | skills required

ABSTRACT

Introduction: Registered nurses (RN)s account for the majority of the rural and remote health workforce and require different skills, knowledge and working practices compared to their metropolitan counterparts. Given the complexity and diversity of the rural and remote work environment, it is important to investigate the contemporary literature on the role and skill requirements of the RNs in these locations.

Methods: A scoping review was undertaken in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews. With the permission of the authors, this scoping review extends the work by Muirhead and Birks (2020) who explored the RN role in these locations in 2017. Database searches were conducted in the Cumulative Index for Allied Health and Nursing Literature (CINAHL), Cochrane, JBI, OVID (Emcare), Proquest, PubMed, Scopus and Rural and Remote Health Database. Studies published from November 2017 to June 2024 were included to reflect the current international roles of rural and remote RNs.

Results: A total of 74 articles were included in the study. The overarching categories identified were clinical roles and non-clinical roles. Ongoing analysis established the subcategories of fundamental/foundational, specialist, management roles, support roles and ancillary roles. Four tensions within the rural and remote context were also identified; Generalist and specialist role; Poorly prepared or unprepared; Extended scope of practice; and Role uncertainty.

Discussion: Registered Nurses in rural and remote locations conduct a wide variety of skills and tasks. Their role is expansive, context-dependant, and dynamic. Analysis of the literature found that globally, similarities exist for the role, including comparable challenges, barriers and opportunities Resource availability in a country impacts RN preparation, emphasising the need for systemic improvements to ensure equitable outcomes, especially in rural and remote areas.

Conclusion: The role of the rural and remote RN is broad and unique and requires different breadth and depth of skills and knowledge. The rural and remote RN role includes all levels of care for all patients across the lifespan, with varying resource and support levels. This scoping review provides valuable insight into the skills required to care for diverse communities. Understanding these

requirements is essential, as it can inform the future focus on rural and remote nurse education and training and its subsequent impact on the quality of care for people living in rural and remote communities.

1 | Introduction

Globally, registered nurses (RN)s comprise the largest group of health care professionals in rural and remote areas (Jones et al. 2019; McCullough et al. 2022) and require different or broader skill sets, knowledge and working practices compared to nursing in metropolitan areas (McCullough et al. 2022; Croxon et al. 2018). A registered nurse is a healthcare professional who has completed formal training through an accredited nursing programme and passed a national licensing exam (American Nurses Association 2024; Australian Nursing and Midwifery Accrediation Council 2019; South Africian Nursing Council 2021). This varies on the country, for example, in the United States of America each state has its own licensing practice act (American Nurses Association 2024), in South Africa, each country has different nursing councils which may have additional requirements (South Africian Nursing Council 2021) and in Australia an individual must first complete a programme of study accredited by the Australian Nursing and Midwifery Accreditation Council (ANMAC) and approved by the Nursing and Midwifery Board of Australia (NMBA) (Australian Nursing and Midwifery Accrediation Council 2019). Registered nurses working in these areas are often referred to as generalist RNs (Whiteing et al. 2021; Australian Government Department of Health and Aged Care 2023) or RN specialists (RNS) (Bell et al. 2018). A generalist RN is defined as a RN who delivers comprehensive care across diverse health needs, working within their full scope of practice (SOP) in various settings encompassing a wide range of specialised skills used to navigate unique challenges (Whiteing et al. 2021; Australian Government Department of Health and Aged Care 2023). A specialist RN is defined as a RN who has advanced nursing skills that enables independent, autonomous practice in an area of specific discipline (Bell et al. 2018). The role and SOP of rural and remote RNs include all levels of care for patients across the whole lifespan (Bell et al. 2018; Hendrickx 2017). These RNs may be responsible for a multipurpose service, which on any given shift may involve coordinating care for residential aged care, emergency presentations, acute admitted patients, minor surgical procedures as well as community health consultation (CRANAplus 2018; National Rural Health Alliance 2019). Workforce shortages, attracting RNs to the rural and remote environment and retention are some of the challenges currently facing rural and remote health services. Workforce shortages, particularly attracting RNs to the rural and remote environment and the challenges in retaining them are some of the significant barriers affecting the services provided in these isolated areas (Whiteing et al. 2021; Bell et al. 2018). These unique health care settings often have to compete with metropolitan areas that offer RNs greater social amenities, professional opportunities and development and therefore innovative recruitment, and retention strategies are needed.

The pre-registration nursing curriculum does not actively prepare RNs for practice in rural and remote areas (McCullough et al. 2022; Central Australian Rural Practitioners Association 2022). Some rural and remote areas report comprehensive orientation programmes, guidance from practice manuals such as the Primary Clinical Care Manual (PCCM) and post registration support and education opportunities (McCullough et al. 2022; Central Australian Rural Practitioners Association 2022). While these are undoubtedly beneficial, there is no consistent training or transition program for those working in these locations, often due to the broad breadth and depth of tasks and roles that nurses must complete (Connolly 2023; Smith et al. 2019a; Penz et al. 2019). Indeed, there is a gap in the literature examining the specific roles and skill requirements of RNs who work in rural and remote areas (McCullough et al. 2022).

2 | Background

Rural and remote healthcare services are very different to their urban or metropolitan counterparts (MacLeod et al. 2021; World Health Organization 2020). People living in these locations are more dependent on primary health care or nurse-led services and have very limited availability of specialised services, for example, midwifery or mental health (Australian Government Department of Health and Aged Care 2023; Muirhead and Birks 2020). Globally, the challenges facing rural health care have many similarities (Australian College of Nursing 2018). The World Health Organization (WHO) recognises 51%–67% of the world's rural populations have limited access to essential health services and that rural populations typically experience lower economic status and poorer health outcomes (World Health Organization 2021). Australian studies indicate people living in rural and remote areas face unique challenges such as shorter life spans, higher levels of disease, injury and mortality rates and poorer access to appropriate health services compared to people living in metropolitan areas (Muirhead and Birks 2020; Campbell et al. 2021; Calleja et al. 2019). The health disparities of vulnerable populations are exacerbated by the inability to provide and retain RNs.

Globally, staff shortages, difficulties in recruitment, lack of education, support and resources and undervaluing of nurses contributes to them not working to their full potential (Australian College of Nursing 2018; McCallum et al. 2024). In Canada, rural nursing practice is compounded by long-standing power imbalances linked to rural marginalisation, political influences and structural factors, which have contributed to persistent nursing shortages over the past century (McCallum et al. 2024). In the United States of America, many nurses choose to commute away from their rural home communities to larger hospitals for employment, due to resources, wage disparities between rural and metropolitan healthcare settings and undervaluing of staff (Johansen et al. 2018). All these factors impact the quality of care for people living in rural and remote communities (Australian College of Nursing 2018; Johansen et al. 2018). In Australia, 28% or one third of the total population, live in rural and remote areas (Australian Institute of Health and Welfare 2024).

Summary

- Transition to rural and remote practice for the registered nurse is complex.
- Registered nurses need a wide variety of skills and knowledge to work in such dynamic environments.
- Clinical and non-clinical role elements are necessary to understand to ensure safe and effective care in such environments and are comprehensively mapped and presented in this article.

Given the complexity and diversity of the rural and remote work environment, it is important to investigate the current role and skills requirements of the RNs in these locations. Understanding which roles and skills RNs need to deliver essential care to individuals living in isolated areas is necessary to help education providers to plan and deliver programs to meet the needs of RNs and the communities they serve. The research question guiding this review is: what is the role and skill requirements of registered nurses working in rural and remote areas?

The following definitions differentiate what is a role and skill requirement. A role is defined by various elements, including the context of care, professional practice, and governance (Jackson et al. 2022; Brown and Crookes 2016). It refers to the overall job encompassing the skills, responsibilities, and duties required (Jackson et al. 2022). The role is shaped by factors such as the health setting, employer expectations and regulations set by professional registration bodies (Jackson et al. 2022). It outlines the tasks, competencies, scope of practice, ethical guidelines and legal responsibilities (Jackson et al. 2022; Brown and Crookes 2016). A skill is defined as the specific ability or competency that a RN develops through education, training and experience (Jackson et al. 2022; Brown and Crookes 2016). Skills are practical, learned techniques that enable a RN to perform their duties safely and effectively (Brown and Crookes 2016). As RNs progress in their career, they continue to refine and expand this skill set to meet the evolving demands of the healthcare environment and patient's needs (Brown and Crookes 2016; Berman et al. 2021).

3 | Methods

3.1 | Research Design

A scoping review was undertaken in accordance with the Joanna Briggs Institute (JBI) methodology for scoping reviews (Joanna Briggs Institute 2023). The review aims to map the breadth of literature available on this topic and identify and examine any gaps found in the literature (Munn et al. 2022). This review forms the groundwork for the first author's doctoral thesis. By conducting this comprehensive scoping review, we can identify research gaps, refine the study's focus, and ensure a strong, evidence-based foundation for advancing the field and contributing to the body of knowledge.

3.2 | Data Sources and Search Strategy

With the permission of the authors, this scoping review extends the work by Muirhead and Birks (2020). Muirhead and Birks completed an integrative review using literature between 1995 and October 2017 focussing on the roles of rural and remote RNs in Australia (Muirhead and Birks 2020). Even though the initial work was focused on the Australian context, many of the issues identified are also prevalent in geographically remote areas worldwide. As such, there may be valuable insights that were not highlighted in previous global research, which could be important to consider. This article extends this work with contemporary literature, thus expanding the knowledge on the role of the rural and remote RN. Aligning with the work of Muirhead and Birks (2020), this review searched the Cumulative Index for Allied Health and Nursing Literature (CINAHL), Cochrane, JBI, OVID (Emcare), Proquest and Scopus, and extended the search to PubMed and the Rural and Remote Health Database. As this review aimed to extend the work of Muirhead and Birks outside of the Australian Context, a scoping review was a more suitable design.

Rural areas are defined as geographical areas that are located outside of towns and cities and have low populations (Australian Institute of Health and Welfare 2024). The term 'rurality' lacks a universal definition and varies across different geographical and temporal contexts (Mubangizi 2023). What is considered rural in the Global North may differ considerably from rural concepts in the Global South, due to significant socio-economic and cultural differences (Australian Institute of Health and Welfare 2024; Mubangizi 2023). Additionally, perceptions of rurality change over time; areas that were once regarded as rural may now be seen as part of the urban fringe, shaped by the expansion of cities and infrastructure (Mubangizi 2023; U.S. Department of Agriculture ERS 2025). Definitions of rurality were considered based on the origin of the paper and how these different countries define rurality, as shown in Table 1 below.

There are various rural classifications however, no universal global classification for rural nursing was found. As a result, we took markers from the Australian Modified Monash Model (MMM) including population size and geographic proximity and applied these to the evaluation rural context globally, based on population. Area classification affects the allocation of resources such as staffing and staff roles, funding and physical resources to meet the needs of the community (Australian Institute of Health and Welfare 2024; Department of Health and Aged Care 2023). For determining the rural and remote status of global studies, the Australian MMM was used as a guide to assess population location. Similarities were drawn for population ranges using the MMM as a basis and self-determination within the articles about rurality. These were then compared with the definitions outlined in Table 1. The authors then looked at maps and each study by a case-to-case basis to ensure there was some level of connectedness to the rural components. The search strategy is outlined in Table 2. This search strategy was applied across all databases, with the only variation being the use of different Boolean operators and connectors. Studies published in English between November 2017 and June 2024 were

TABLE 1 | Definitions of rurality.

Country	Definition
United States of America	In the United States, rural towns are defined as areas with a population of fewer than 5000 people and fewer than 2000 housing units (U.S. Department of Agriculture ERS 2025).
Canada	In Canada, rural areas are classified using the terms core, fringe, and rural area. Typically, a rural area refers to a community with a population of fewer than 10,000 people, based on data from the most recent census (Statistics Canada 2021)
Southern Africa	In Southern Africa, a rural area is defined as a region where < 40% of the total population resides (Mubangizi 2023)
Australia	The Modified Monash model is used to define whether a location is metropolitan, rural, remote or very remote (Department of Health and Aged Care 2023). The model measures remoteness and population size on a scale of MM categories MM 1 to MM 7 (Department of Health and Aged Care 2023). A major city is identified as MM 1 whereas MM 7 is very remote (Department of Health and Aged Care 2023). These definitions are important to understand as their classifications have a significant impact on the health and workforce requirements of the community they are associated with (Department of Health and Aged Care 2023).

included to reflect the current international roles of rural and remote RNs. Inclusion and exclusion criteria were employed, see Table 3.

This scoping review focussed on RNs without significant rural and remote experience or graduate RNs. The search was limited to this type of RN, as most people entering rural practice do not possess the advanced skills of nurse practitioners (NPs) and endorsements such as the 'Rural and Isolated Practice Registered Nurse (RIPRN)' as found in Australia for example. These advanced roles involve additional training, equipping practitioners with additional skill sets in these areas. Another area of focus was acute care as RNs working in community care settings often have a very different scope of practice and level of experience. Most RNs who begin working in rural and remote areas start in acute care which provides a foundation level of experience. Acute care in rural and remote settings is defined as care provided to patients with a range of acute conditions and/or illnesses, such as disease, trauma and post-surgical needs (this means, in settings that provide emergency care and inpatient care such as hospital or clinics) (Paliadelis et al. 2012). Facilities offering acute care typically provide services like emergency care, maternity services and general medical and surgical care (Paliadelis et al. 2012).

TABLE 2 | Search strategy applied to databases.

Search number	Search terms
S1	Registered Nurse OR RN OR Remote Area Nurse OR RAN OR Novice Nurse OR Graduate Nurse OR New Graduate Nurse OR Trainee Nurse OR General* Nurse OR Neophyte Nurse OR Agency Nurse OR Travel Nurse
S2	Role* OR Skill* OR Duties OR Responsibilit* OR Job* OR Require* OR Work OR Task* OR Competen*
S3	Rural OR Remote OR Isolated OR Provin* OR Non-Metropolitan OR Regional
S4	S1 AND S2 AND S3

TABLE 3 | Inclusion and exclusion criteria.

Inclusion criteria	Exclusion criteria
Registered nurse	Enrolled nurse
Description of role or task	Nurse practitioner or specialised advanced roles
Rural and/or remote setting	Student nurse
Primary peer-reviewed papers published in English	Assistant nurse or personal care worker
Acute care setting	Additional endorsements such as 'rural and isolated practice registered nurse'
	Other health professional such as, Medical Officer, Allied Health Professionals
	Regional areas
	Metropolitan/Urban areas
	Other aspects of rural and remote nursing not related to roles (e.g., stress)
	Non acute care setting (aged care, long-term care, community care)
	Other literature reviews, commentary papers or thesis
	Written in a language other than English or full text could not be sourced

3.3 | Data Extraction

Data was extracted using a purpose built table which served as a primary tool for organising the included articles. The extraction table fields were agreed upon by all authors prior to data extraction commencing and included author, methods,

role and limitations. Two authors undertook data extraction activities on every paper. Through an iterative process, the data extraction tool was tested and refined, ensuring robust data collection.

3.4 | Analysis

The JBI framework was used to guide analysis by providing clarity on data extraction processes and providing suggestions for data presentation (Pollock et al. 2023). The data underwent analysis through extraction into a purpose-built table using Microsoft Excel. Due to the volume of articles included, the tool was used to understand the role of the RN in rural and remote locations and categorise this. Initial extraction was conducted by the lead author however, all four authors engaged in discussions and reached consensus iteratively on interpreting the data and refining the visualisation of the results. To better understand the role of the RN in rural locations within the literature, comparative mapping between the study by Muirhead and Birks (2020) and this review was conducted, allowing for exploration of the evolution of the rural and remote RN role.

4 | Results

4.1 | Study Selection

The initial search within the eight databases returned 4982 articles which were transferred to Endnote (Clarivate 2013) where 456 duplicates were removed. Articles were then exported to Covidence (MOFFITT Cancer Center 2023), where additional duplicates were removed ($n = 102$) and the first level blinded screening, in the form of title and abstract screening by two reviewers (DR, PC), occurred. Conflicts were resolved by a third author (AS). Next, 244 articles underwent full text review by all four reviewers with conflicts resolved through discussion and consensus on included articles. A further hand search was completed by reviewing the reference lists of included articles. A total of 74 articles were included in the study (Figure 1).

The overarching categories were clinical roles and non-clinical roles. Ongoing analysis established the subcategories of fundamental/foundational, specialist, management roles, support roles and ancillary roles. The research papers included a mixture of qualitative ($n = 35$), quantitative ($n = 31$), and mixed methods

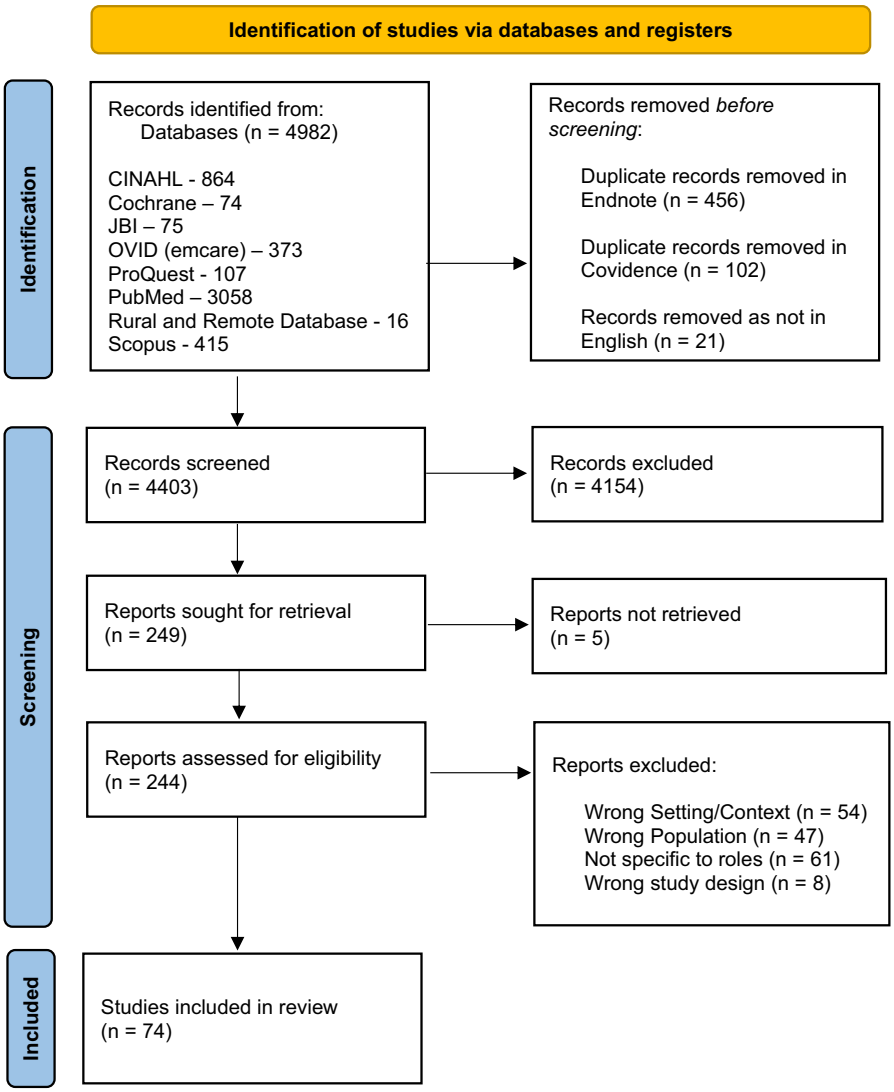

FIGURE 1 | Prisma diagram. n = number.

TABLE 4 | Summary of included articles—Role and skill mapping.

	Clinical roles
Role elements	**Fundamental/Foundation**
Aged care (Baernholdt et al. 2017; Baernholdt et al. 2018; Hoppe and Clukey 2021; Smith and Vandall-Walker 2017)	Assessment & management of pressure ulcers Assessment & management of falls Assistance of activities of daily living for aged care residents Planning & management of complex care for the older adult Neurological monitoring Unique care processes (restraints)
Cancer care (Gunn et al. 2021)	Post operative care & support for Cancer patients
Child Health/Neonatal Health (Bell et al. 2018; Smith and Vandall-Walker 2017; Beck et al. 2018; Fedele 2017; Marshall et al. 2018; Martin, Sweeney, et al. 2020; Richardson et al. 2021; Rurangirwa et al. 2018; Spangaro et al. 2022)	Assessment, management & treatment of children & adolescents Communicate with children Pain assessment Prepare & package patients for transfer
Emergency care (Whiteing et al. 2021; Bell et al. 2018; Hendrickx 2017; Hoppe and Clukey 2021; Smith and Vandall-Walker 2017; Marshall et al. 2018; Chen et al. 2020; Edwards et al. 2022; Edwards et al. 2018; Fournier et al. 2021; Grant and Buckley 2019; Martin-Misener et al. 2020; Moore et al. 2017; Munroe et al. 2022; Peltan et al. 2020; Phukubye et al. 2019; Porter 2019; Porter et al. 2017; Prengaman et al. 2017; Rocha et al. 2023; Stevens et al. 2020; Varndell et al. 2020; Varndell et al. 2019; Martin, Lewis, et al. 2020; O'Hara and Reid 2024; Mamalelala et al. 2023)	Activate on-call doctor Administering antidotes Administering intravenous medications & fluids Administering standing order medication Appropriately prepare & package patients for transfer Assess pain using instruments & tools Assess patients across the lifespan Autonomous decision making Blood Collection Cardiac arrest resuscitation (basic life support) Caring for newly arrived, acutely unwell or traumatic injury patients Checking & maintaining resuscitation trollies Clinical assessment Complete medical/social history-taking Deliver direct patient care (activities of daily living, hygiene care, dressings) Deliver indirect care (reviewing results, planning care, washing hands, documentation & returning equipment) Documentation via electronic medical records Early deterioration assessment Emergency transport of patients Focussed assessments Grief counselling Handover (Clinical & Royal Flying Doctors Service) Health promotion & education High-level assessment skills Inhaled oxygen therapy Initiating fluid therapy Identify life-threatening situations Liaising with primary & secondary medical services Medication administration Nursing documentation (assessment findings, history, actions taken, outcomes & plans) Organising aeromedical retrieval Pain management Patient education Performing a 12-lead electrocardiograph Physical assessments & examinations Point of care testing Provide emergency care & management across the lifespan Screen & assess for intimate partner violence Telehealth

Specialist	Non-clinical roles			Country
	Management	Support	Ancillary	
Not applicable/reported	Not applicable/ reported	Peer mentoring & support	Not applicable/reported	Canada (Smith and Vandall-Walker 2017) United Stated of America (Baernholdt et al. 2017; Baernholdt et al. 2018; Hoppe and Clukey 2021)
Not applicable/reported	Not applicable/ reported	Not applicable/ reported	Not applicable/reported	Australia (Gunn et al. 2021)
Assessment of a well child Blood collection Intravenous cannulation Malnutrition assessment in children Neonatal feeding Screening/assessment, diagnosis, management/treatment, evaluation & prevention of sleep disorders Special care nursery skills (caring for an acutely unwell infant) Stabilise acutely unwell paediatric patients	Not applicable/ reported	Not applicable/ reported	Not applicable/reported	Australia (Fedele 2017; Martin, Sweeney, et al. 2020; Richardson et al. 2021; Spangaro et al. 2022) Canada (Smith and Vandall-Walker 2017; Marshall et al. 2018) Rwanda (Beck et al. 2018; Rurangirwa et al. 2018) New Zealand (Bell et al. 2018)
Administer & supply medications through delegated practices regulated by protocols & treatment guidelines Advanced assessments & treatments Advanced life support (adult & paediatric) Advanced knowledge for caring for critically ill patients or patients in crisis situations. Assist with intubation Assist with surgery Defibrillation Electrocardiograph interpretation Independently make a preliminary diagnosis following protocols/ decision-support tools Intra osseous needle insertion Intravenous cannulation Interpret investigations (pathology tests & diagnostic imaging) Laryngeal mask airway insertion Needle thoracostomy Nurse initiated medications Order diagnostic tests & imaging Plastering Point of care testing interpretation Radiographic procedures & exposure factors Resuscitation using telemedicine technology Referrals to supportive services (palliative care, diabetic educator) Stabilising patients Support & maintain critically ill/injured patients without medical officer present Suturing Thrombolysis Triage Undertake on-call duty	Not applicable/ reported	Education Mentorship Peer mentoring and support Teaching role Training	Administrative duties Ambulance driving Familiar with supplies and protocols First-responder Ambulance Knowledge of technology Medical emergency response	Australia (Whiteing et al. 2021; Chen et al. 2020; Edwards et al. 2022; Edwards et al. 2018; Grant and Buckley 2019; Moore et al. 2017; Munroe et al. 2022; Porter 2019; Porter et al. 2017; Prengaman et al. 2017; Stevens et al. 2020; Varndell et al. 2020; Varndell et al. 2019; Martin, Lewis, et al. 2020) Botswana (Mamalelala et al. 2023) Brazil (Rocha et al. 2023) Canada (Smith and Vandall-Walker 2017; Marshall et al. 2018; Fournier et al. 2021; Martin-Misener et al. 2020) New Zealand (Bell et al. 2018) South Africa (Phukubye et al. 2019) United States of America (Hendrickx 2017; Hoppe and Clukey 2021; Peltan et al. 2020; O'Hara and Reid 2024)

(Continues)

TABLE 4 | (Continued)

	Clinical roles
Role elements	**Fundamental/Foundation**
Indigenous Health (Fedele 2017; Fournier et al. 2021; Wilcox et al. 2022)	Assessment of Indigenous peoples
Maternity Care (Whiteing et al. 2021; Hoppe and Clukey 2021; Smith and Vandall-Walker 2017; Fedele 2017; Martin, Sweeney, et al. 2020; Rurangirwa et al. 2018; Edwards et al. 2018; Mamalelala et al. 2023; Bidner et al. 2022; Katuta and Nuuyoma 2023)	Discharge planning including referral for follow-up Family planning Health education Partner violence screening Prepare & package patients for transfer
Mental Health (Whiteing et al. 2021; Adams et al. 2019; Brewer et al. 2020; Gerace and Muir-Cochrane 2019; MacLeod et al. 2022; Ngune et al. 2021)	Mental Health Assessment
General nursing care (Hendrickx 2017; MacLeod et al. 2021; Johansen et al. 2018; Hoppe and Clukey 2021; Smith and Vandall-Walker 2017; Fedele 2017; Fournier et al. 2021; Wilcox et al. 2022; Katuta and Nuuyoma 2023; Adams et al. 2019; Brewer et al. 2020; Baker et al. 2022; Beattie et al. 2019; Broom et al. 2019; East et al. 2020; Endacott et al. 2018; Lea and Cruickshank 2017; Pennington et al. 2020; Rohatinsky et al. 2020; Scrymgeour et al. 2020; Sims et al. 2020; Smith et al. 2019b; Smith et al. 2020; Williams et al. 2024)	Administration of prescribed medication Assess health literacy Assess skin integrity for pressure areas/risk of pressure areas Assisting with activities of daily living Autonomous decision making Basic nursing skills/general nursing care Bedside Care Blood collection Broad skill set Discharge Planning Documentation Emotional support for patients Environment Assessment Health promotion Intentional patient rounding Notification of errors & events (falls, medication errors, pressure areas) Nursing care plans/pathways Oral hygiene Pain Assessment & Management Patient assessment Patient care Patient education Point of care testing Positioning patients Surgical care Timely transfers of patients to metropolitan facilities Transition services nurse Treatments/procedures

Specialist	Non-clinical roles			Country
	Management	Support	Ancillary	
Cultural awareness Culturally safe care Care of Indigenous peoples Organise patient assisted transport service	*Not applicable/ reported*	*Not applicable/ reported*	*Not applicable/reported*	Australia (Fedele 2017; Wilcox et al. 2022) Canada (Fournier et al. 2021)
Antenatal, intrapartum, postpartum & postnatal assessment Antenatal care Assessment, management & support (Pregnancy loss < 20 weeks) Delivery of a newborn Intrapartum care Maternity emergencies Obstetric care Postnatal care Post partum care Prenatal care including nutrition advice	Not applicable/ reported	Not applicable/ reported	Porter (transfer maternity patient to outpatient clinic)	Australia (Whiteing et al. 2021; Fedele 2017; Martin, Sweeney, et al. 2020; Edwards et al. 2018; Bidner et al. 2022) Botswana (Mamalelala et al. 2023) Canada (Smith and Vandall-Walker 2017) Rwanda (Rurangirwa et al. 2018) Namibia (Katuta and Nuuyoma 2023) United States of America (Hoppe and Clukey 2021)
Counselling Health education, prevention & promotion Manage self-injury Primary health care response Post-traumatic stress disorder assessment Seclusion of mental health consumers Self-injury assessment Setting up services Physical & mechanical restraint of mental health consumers Violence de-escalation	Not applicable/ reported	Not applicable/ reported	Not applicable/reported	Australia (Whiteing et al. 2021; Adams et al. 2019; Brewer et al. 2020; Gerace and Muir-Cochrane 2019; MacLeod et al. 2022; Ngune et al. 2021)
Assessment within guidelines such as the Primary Clinical Care Manual Clinician radiography by a licensed nurse Diagnosis with the Primary Clinical Care Manual or similar Medication administration dispensing/supplying, storing, education & documentation Pharmacist stock control & management Respiratory technician/therapists Social work	Assume management & leadership responsibilities Delegation to enrolled nurses Delegation to health support staff Directing & co-ordinating roles Ratifying care planning performed by enrolled nurses Role models & clinical leaders Shift in charge Understanding an enrolled nurse scope of practice Workload responsibilities	Disaster wellbeing Mentorship Peer mentoring & support Precepting	Administrative Roles Ancillary support staff (administrative clerks, medical records personnel, environmental services staff, maintenance workers, etc.) Mortuary attendant Patient's laundry Providing ambulance service Reception duties Transition services nurse	Australia (Fedele 2017; Wilcox et al. 2022; Adams et al. 2019; Brewer et al. 2020; Baker et al. 2022; Beattie et al. 2019; Broom et al. 2019; East et al. 2020; Endacott et al. 2018; Lea and Cruickshank 2017; Pennington et al. 2020; Scrymgeour et al. 2020; Smith et al. 2020) Canada (MacLeod et al. 2021; Smith and Vandall-Walker 2017; Fournier et al. 2021; Rohatinsky et al. 2020) England (Sims et al. 2020) Namibia (Katuta and Nuuyoma 2023) New Zealand (Scrymgeour et al. 2020) United States of America (Hendrickx 2017; Johansen et al. 2018; Hoppe and Clukey 2021; Smith et al. 2019b; Williams et al. 2024)

(Continues)

TABLE 4 | (Continued)

	Clinical roles
Role elements	**Fundamental/Foundation**
Palliative Care/End-of-life Care (Croxon et al. 2018; Smith and Vandall-Walker 2017; Porter 2019; Aquino et al. 2022; Gerber et al. 2022; Isaacson et al. 2019; Shepherd et al. 2021; Styes and Isaacson 2021; Trankle et al. 2020)	Administer medications Advocating for patients & family Communicate & support family during end-of-life care Environment modification Emotional support to families End-of-life care, including physical, emotional, spiritual & practical support Pain management Palliative care Patient assessment (symptoms) Talking to patients & families about end-of-life decisions
Primary Health Care (McCullough et al. 2022; Whiteing et al. 2021; Bell et al. 2018; Hoppe and Clukey 2021; Smith and Vandall-Walker 2017; Fedele 2017; Fournier et al. 2021; Martin-Misener et al. 2020; Moore et al. 2017; Prengaman et al. 2017; Rocha et al. 2023; O'Hara and Reid 2024; Mamalelala et al. 2023; Katuta and Nuuyoma 2023; Cross et al. 2021; Wright et al. 2024)	Acute & chronic disease management Administration of medication via a webster pack Administer intravenous antibiotics Assess & care for patients across the lifespan Appropriately prepare & package patients for transfer Autonomous decision making Blood collection Communicate/consult with on-call/offsite doctor Community health nursing services Complete medical/social history-taking Dementia assessment & care Documentation via electronic medical records Emergency transport of patients Handover (Clinical & Royal Flying Doctors Service) Independently make a diagnosis following protocols/decision-support tools Medication administration Observations Outpatient clinics & treatments Physical examinations Telehealth
Public Health (Bell et al. 2018; Katuta and Nuuyoma 2023; Broom et al. 2019; Newhouse et al. 2018)	Admission assessment including screening & documentation of tobacco use Administration of prescribed medication Health promotion (smoking cessation) Immunisations Referral to services
Renal/Dialysis care (Lillebuen et al. 2020)	*Not applicable/reported*
Security & Disaster Management (Chen et al. 2020; Brewer et al. 2020; MacLeod et al. 2022; Beattie et al. 2019; Bryce et al. 2017; Jacob et al. 2022; Pich and Roche 2020; Garren-Grubbs and Hendrickx 2023)	Assessment & management of agitated, aggressive & uncooperative patients Chemically restrain violent patients De-escalation processes Duty of care to aggressive patients Identify risks to safety & security Manage verbal & physical violence Manage sexual harassment Provide care to challenging patients Search patient belongings Violence de-escalation
Sexual Health (Fedele 2017; Rurangirwa et al. 2018; Lafferty et al. 2021)	*Not applicable/reported*

Specialist	Non-clinical roles			Country
	Management	Support	Ancillary	
Assessment of the deceased patient Death verification Determining when to depart from life-sustaining treatment Initiate end-of-life care Make autonomous decisions, especially regarding the administration of 'as needed' medications including opioids	Team communication	*Not applicable/ reported*	Cleaning (bed washes)	Australia (Croxon et al. 2018; Porter 2019; Aquino et al. 2022; Gerber et al. 2022; Shepherd et al. 2021; Trankle et al. 2020) Canada (Smith and Vandall-Walker 2017) United States of America (Isaacson et al. 2019; Styes and Isaacson 2021)
Advanced generalist role Assist with surgery Dispense medications Intravenous cannulation insertion Management of time critical conditions Order diagnostic tests & imaging Prescribing medications through delegated practices regulated by protocols & treatment guidelines Refer to other healthcare practitioners Undertake on-call duty	Developing, implementing & following-up workplace health & safety strategies Meeting community expectation & demands Selecting or implementing new technology & equipment	Mentoring Orientation & preceptorship for new nurses Teaching	Administrative role Cleaning (bed & bedside washes)	Australia (McCullough et al. 2022; Whiteing et al. 2021; Fedele 2017; Moore et al. 2017; Prengaman et al. 2017; Cross et al. 2021; Wright et al. 2024) Botswana (Mamalelala et al. 2023) Brazil (Rocha et al. 2023) Canada (Smith and Vandall-Walker 2017; Fournier et al. 2021; Martin-Misener et al. 2020) Namibia (Katuta and Nuuyoma 2023) New Zealand (Bell et al. 2018) United States of America (Hoppe and Clukey 2021; O'Hara and Reid 2024)
Cervical pap-smears	Not applicable/ reported	Not applicable/ reported	Not applicable/reported	Australia (Broom et al. 2019) Namibia (Katuta and Nuuyoma 2023) New Zealand (Bell et al. 2018) United States of America (Newhouse et al. 2018)
Peritoneal dialysis	Not applicable/ reported	Assist with clinical skills development	Not applicable/reported	Canada (Lillebuen et al. 2020)
Disaster assessment, management, coordination & planning Frisk searching patients for weapons Wand metal detector search patients	Manage risks to safety & security	Not applicable/ reported	Not applicable/reported	Australia (Chen et al. 2020; Brewer et al. 2020; MacLeod et al. 2022; Beattie et al. 2019; Bryce et al. 2017; Jacob et al. 2022; Pich and Roche 2020) United States of America (Garren-Grubbs and Hendrickx 2023)
Management of sexual health conditions Sexual health screening Sexually transmitted infection assessment, point of care testing, treatment & contact tracing	Not applicable/ reported	Not applicable/ reported	Not applicable/reported	Australia (Fedele 2017; Lafferty et al. 2021) Rwanda (Rurangirwa et al. 2018)

($n = 8$) literature. A detailed summary of the 74 included studies is given in Table 4.

4.2 | The Role of the Rural and Remote Registered Nurse

4.2.1 | Clinical Roles

Clinical roles for the rural and remote RN can be organised into fundamental/foundation, and specialist categories.

Fundamental or foundational roles/skills can be defined as nursing responsibilities that focus on a person's essential needs to ensure their physical and psychosocial wellbeing (Berman et al. 2021; Muntlin et al. 2023; Feo et al. 2018; Kitson 2018). A prominent RN role that emerged from the literature was health assessment and physical examination, hereafter referred to as assessment. Eight out of the 14 role elements included some form of assessment in their role description. Assessment was largely reported in articles that discussed emergency care and included fundamental assessments such as physical and psychological assessment, pain assessment and medication assessment (Bell et al. 2018; MacLeod et al. 2021; Martin, Sweeney, et al. 2020; Martin, Lewis, et al. 2020) in addition to more specific assessments such as focussed assessment, early deterioration assessment, child and adolescent assessment and high-level assessment (Bell et al. 2018; Hendrickx 2017; Fedele 2017; Marshall et al. 2018; Edwards et al. 2018; Munroe et al. 2022; Varndell et al. 2019; Brewer et al. 2020; Ngune et al. 2021).

There are several fundamental/foundational elements to the RN role. These range from assisting with activities of daily living (ADL)s, performing observations, medication and intravenous fluid administration and prepare and package patients for transfer, for example, administering pre-transport medications and photocopying relevant documentation. The articles in the literature review found that there are certain pivotal skills that transition across various nursing context. However, specific aspects of delivering care in rural and remote settings necessitate unique approaches for RNs in applying these fundamental skills (Croxon et al. 2018; Fournier et al. 2021). The application of this can be difficult to fully comprehend and can be challenging for RNs who have never been exposed to the environment (Croxon et al. 2018; Fournier et al. 2021).

Specialist roles/skills can be defined as advanced knowledge, education and skills that meets a prescribed standard of specialist nursing practice and authorised within a defined SOP in a specialised field of nursing (Internation Council of Nurses 2020; Jokiniemi and Miettinen 2020). Assessments within specialist roles related to more in-depth and specialised assessments such as sexually transmitted infection (STI) assessment, assessment of a deceased patient, assessment using the PCCM, assessment of a well child, malnutrition assessment in children, mental health assessments and antenatal, intrapartum, postpartum and postnatal assessments (Whiteing et al. 2021; Bell et al. 2018; Beck et al. 2018; Martin, Sweeney, et al. 2020; Adams et al. 2019; Brewer et al. 2020; MacLeod et al. 2022; Pennington et al. 2020; Gerber et al. 2022; Lafferty et al. 2021). Given the paucity of healthcare staff in rural and remote areas, nurses in these locations often assume specialist roles to meet community needs (Marshall et al. 2018; Adams et al. 2019).

Another prominent role that emerged from the literature was the interpretation of investigations or managing the undiagnosed patient. The role of the RN was extended to making a health diagnosis based on presenting symptoms and the PCCM and interpretating electrocardiograms (ECG)s, pathology results, radiology tests or point-of-care-testing (POCT) (Bell et al. 2018; Chen et al. 2020; Edwards et al. 2022; Fournier et al. 2021; Grant and Buckley 2019; Baker et al. 2022). While rural and remote hospitals may have reduced access to onsite radiology and pathology departments, they compensate with the increased availably of POCT and clinician-operated radiography (Baker et al. 2022). This demonstrated the breadth and depth of the SOP in such nursing roles.

4.2.2 | Non-Clinical Roles

Within the category of non-clinical roles, three subgroups were identified: management, support and ancillary roles.

Management roles included workload responsibilities (Endacott et al. 2018; Lea and Cruickshank 2017), understanding different scopes of practice (Endacott et al. 2018; Lea and Cruickshank 2017), delegation (Endacott et al. 2018; Lea and Cruickshank 2017), meeting community expectations and demands (Endacott et al. 2018; Lea and Cruickshank 2017), and selecting and implementing new technology and equipment (Bell et al. 2018; Prengaman et al. 2017; Endacott et al. 2018; Lea and Cruickshank 2017). It was clear in some of the literature, that most RNs were expected to perform some sort of health service management role (Bell et al. 2018; Prengaman et al. 2017; Endacott et al. 2018; Lea and Cruickshank 2017; Scrymgeour et al. 2020; Bryce et al. 2017), however, it was not articulated as clearly, compared to the direct patient care roles. In a study about new graduate nurses (NGN)s by Lea and Cruickshank (Lea and Cruickshank 2017), it was found that NGNs were performing management and leadership roles such as being in charge, delegating work allocations, workload responsibilities and directing and coordinating roles.

Support roles included education (Bell et al. 2018; Varndell et al. 2019; MacLeod et al. 2022; Shepherd et al. 2021; Lillebuen et al. 2020), mentoring (MacLeod et al. 2021; Hoppe and Clukey 2021; Prengaman et al. 2017; Varndell et al. 2019; Wilcox et al. 2022; Rohatinsky et al. 2020), teaching (Fournier et al. 2021), training (Gerber et al. 2022) and preceptorship for new nurses and student nurses (Prengaman et al. 2017; Wilcox et al. 2022) and assisting with clinical skills development (Lillebuen et al. 2020). In a study by Hoppe and Clukey (2021), challenges were noted in fulfilling these support roles because of the heightened workload responsibilities of rural and remote RNs and the scarcity of suitably experienced staff. Another study identified challenges with teaching, training and orientation due to geographical isolation (Prengaman et al. 2017). Studies indicate that positive workplace culture and environments are needed to be able to provide these support roles, particularly for early career RNs transitioning to rural and remote practice by developing clear career pathways (MacLeod et al. 2021; Fedele 2017; Fournier et al. 2021; Prengaman et al. 2017).

Ancillary roles were identified in the literature. This referred to how RNs manage daily activities on a recurrent basis, for example performing administrative tasks (Fournier et al. 2021; Prengaman et al. 2017), reception duties (Fournier et al. 2021), medical record management (Smith and Vandall-Walker 2017) and ordering supplies (Hoppe and Clukey 2021; Smith and Vandall-Walker 2017). Other ancillary tasks included ambulance driving or providing an ambulance service (Whiteing et al. 2021; Wilcox et al. 2022), bed, and bedside cleaning (Croxon et al. 2018), attending to patient laundry (Wilcox et al. 2022), environmental services such a as janitor role (Smith and Vandall-Walker 2017), porterage (Mamalelala et al. 2023), and mortuary assistance (Katuta and Nuuyoma 2023).

4.3 | Tensions Within the Rural and Remote Context

Four tensions within the rural and remote context were found when examining the literature. These included the unique 'generalist/specialist' role, the unpreparedness of RNs and uncertainties around the RN SOP and role.

4.3.1 | Generalist or Specialist Role

The terms 'nurse generalist', 'nurse specialist' or 'specialist generalist' have been used frequently in the literature to describe the role of the rural and remote RN (Croxon et al. 2018; Whiteing et al. 2021; Hendrickx 2017; Smith et al. 2019a; MacLeod et al. 2021; Johansen et al. 2018; Hoppe and Clukey 2021; Smith and Vandall-Walker 2017; Fedele 2017; Marshall et al. 2018; Fournier et al. 2021; Adams et al. 2019; East et al. 2020; Isaacson et al. 2019). The term has been defined as a RN with advanced nursing skills, enabling independent and autonomous practice (Bell et al. 2018), a specialty that is as diverse as it is complex (Smith and Vandall-Walker 2017), relationship-centred and focused on community needs (Bell et al. 2018). Smith and Vandall-Walker (2017) described the term as an example of how a RN adeptly transitioned between multiple roles while acquiring new skills and knowledge in real-time. Skilfully Marshall et al. (2018) chose the term to describe the competence required to provide care to patients and families across the lifespan. In metropolitan hospitals, RNs more commonly practice in health-care specialties whereas RNs working in rural hospitals need to be expert generalists to care for patients across the lifespan (Smith et al. 2019a), and provide a range of clinical roles within the one shift. A unique description that was discovered in the literature of this nursing role included the phrase 'jack of all trades and master of none' (Marshall et al. 2018). This description was distinctive to general RNs as our inclusion criteria did not include those RNs with expanded SOPs from education and/or advanced practice roles for example, NPs or RIPRNs. Four other papers agreed that due to the extensive range of rural and remote RN roles, the analogy 'jack of all trades' was an appropriate description of this distinctive role (Johansen et al. 2018; Smith and Vandall-Walker 2017; Fedele 2017; Lillebuen et al. 2020). The expanse of the rural and remote nurse means that adequate preparation and understanding of the role requirements can be a challenge.

4.3.2 | Poorly Prepared or Unprepared

In relation to skill requirements, a number of authors revealed RNs are often poorly prepared or unprepared to deliver care to people living in rural and remote areas (Hendrickx 2017; Fournier et al. 2021; Adams et al. 2019; MacLeod et al. 2022; Shepherd et al. 2021) or are poorly equipped to manage patient care delivery (Hendrickx 2017). Some of the reasons for this included geographic location, isolation, lack of access to ongoing education and support, career advancement opportunities, cultural and professional challenges and the ability to fully comprehend the breadth of nursing roles that are provided by a single RN (Fournier et al. 2021; MacLeod et al. 2022; Smith et al. 2020). For example, Mcleod et al. (2022) found RNs were driving to and from remote communities alone in treacherous weather, road conditions and animals on the road with long stretches of travel without encountering another vehicle. Fournier et al. (Fournier et al. 2021) attributed unpreparedness to cultural and professional challenges that await these RNs. In specialty areas such as mental health, maternity, and paediatric care, RNs often experience isolation, lack of support and unpreparedness when delivering care (Smith and Vandall-Walker 2017; MacLeod et al. 2022). Rural nurses experiencing isolation and feelings of disconnection within the practice environment, are more likely to move to metropolitan areas (Rohatinsky et al. 2020).

Rural and remote RNs must also care for critically ill patients with lack of resources over a more prolonged period of time, while waiting for retrieval/aeromedical services (Adams et al. 2019). It is difficult for RNs to fully comprehend what the role involves prior to their initial experience (Fournier et al. 2021). This means that RNs are unable to fully grasp the expanded nursing role itself or the technical, social, geographical, cultural and working environment (Fournier et al. 2021). Having a wider range of generalist knowledge and skills, specialising in all aspects of nursing care can be overwhelming for RNs working in these facilities (MacLeod et al. 2021).

4.3.3 | Extended Scope of Practice (SOP)

Several authors discussed RNs working beyond their SOP or practicing with an extended SOP. A study by Martin-Misener et al. (2020) noticed continual task shifting where RNs assumed responsibilities without extra training/certification (from other health professionals such as physicians, pharmacists, laboratory technicians and paramedics). Three other studies identified difficulties within the RN SOP when initiating potentially lifesaving treatment in injured or critically ill patients or in a crisis situation while awaiting a MO or retrieval services to attend (McCullough et al. 2022; Hendrickx 2017; Grant and Buckley 2019). McCullough et al. (2022) found this created a discrepancy between the SOP needed and RN's competence and confidence in providing that level of care. Autonomous practice and the broader SOP has been determined as one of the reasons RNs choose to work in rural and remote areas, where practicing autonomously is viewed as an attractive environment for nurses (Smith and Vandall-Walker 2017). An example in this study saw RNs choosing rural nursing due to previous limited scopes in previously worked larger contexts (Smith and Vandall-Walker 2017).

Making autonomous decisions around medication administration and dispensing was also repeatedly commented on in the literature. In the study by Gerber et al. (2022), there was a lack of consistency between staff administering 'as needed' medication to end-of-life (EOL) patients due to interconnected barriers concerning staff's fears, knowledge, beliefs, communication and institutional limitations. A recurring subject was RNs completing assessments and physical examinations, analysing laboratory and radiology test results to inform diagnosis, followed by administering and/or dispensing medications (Fournier et al. 2021; Martin-Misener et al. 2020; Munroe et al. 2022; Pennington et al. 2020). Fournier, Blanchet and Pepin (2021) found that because of the geographic isolation, low population density, limited resources and support, and the requirement to meet workplace and community demands, the SOP is broad, and it has been acknowledged that RNs regularly work within, below and beyond their legislated SOP. Lastly, the paper from Lafferty et al. (2021) focused on the specific SOP needed when providing STI point of care treatment, contact tracing and education. In this study most staff recruited to work remotely were ED trained staff and therefore, not trained in other specialty areas such as primary healthcare and sexual health (Lafferty et al. 2021).

4.3.4 | Role Uncertainty

Rural and remote RNs work in diverse, dynamic environments and therefore may exhibit an element of role uncertainty, particularly if they have transitioned from one particular specialty into rural and remote contexts. Role uncertainly has been described in the literature as a perceived inability to determine probabilities for outcomes and can influence emotional and behavioural responses and lead to lack of confidence (Cranley et al. 2012). The role of the rural and remote RN is a unique role, complicated by staff ratios and resources (Lea and Cruickshank 2017). In environments where clinical acuity and patient numbers change rapidly and frequently, it can be difficult to ensure these areas are resourced accordingly to meet the public demands (Smith et al. 2020). Likewise, RNs working in metropolitan areas may not fully understand the rural and remote role, with one study suggesting that metropolitan nurses may focus only on lack of materials and equipment (Prengaman et al. 2017).

Role uncertainty was also described when discussing speciality care such as palliative care. For example, challenges such as discussion and responsibility around EOL options caused role uncertainty for these RNs working in the rural area (Isaacson et al. 2019). The literature repeatedly expressed the requirement for nurses be rural generalist rather than specialists in certain areas. Indeed, those transitioning from metropolitan areas to the rural acute setting expressed fluctuations in emotions, as they learned and enacted the role of the rural generalist (Smith and Vandall-Walker 2017).

Lastly, some authors noted role uncertainty was also felt by the community. Registered nurses needed to build community trust and rapport and had to prove their knowledge levels and abilities when first commencing work in a rural or remote area (Smith and Vandall-Walker 2017). At times the community was significantly influenced by other community members and it took time for these RNs to be accepted and trusted (Smith and Vandall-Walker 2017). Some communities noted that local residents hesitated to invest time in building relationships with RNs because they were unsure if these nurses would depart abruptly (Wright et al. 2024). Some RNs were viewed to be 'outsiders' and therefore felt they did not belong to the community (Katuta and Nuuyoma 2023). As this study was specific to newly qualified RNs, there was the added concern that this attitude and behaviour from the community could negatively affect their performance and may result in them resigning from their post or even their profession (Katuta and Nuuyoma 2023). Registered nurses who feel a sense of connection to rural communities and certainty within their roles are more inclined to remain in their positions and to provide the much-needed extended services to people living in rural and remote areas (Prengaman et al. 2017; Rohatinsky et al. 2020).

4.4 | Evolution of the RN Role in Rural and Remote

It is clear from the literature that RNs in rural and remote locations conduct a wide variety of skills and tasks and that their role is expansive, context-dependent and dynamic. In keeping with the expansion of the work of Muirhead and Birks (2020), the below mapping (Figure 2) allows for a comparison between the previous study and this research.

The left circle represents the work of Muirhead and Birks whereas the right circle represents the work of this review. Through comparing the two, the common elements of the rural and remote RN roles are represented in the middle. It was observed that literature on men's health and dental problems was not found in the contemporary search. Instead, it is noted RN roles are now evolving to allied health roles, assisting with surgery, cancer and neonatal care, sleeping disorders and pharmacy roles. While this does not mean that RN roles do not contain a focus on men's health and dental problems, we note the emphasis may have shifted in recent published materials.

5 | Discussion

This scoping review was conducted to determine what the current role and skill requirements are for RNs working in rural and remote facilities. We found that globally, similarities exist for the role, with comparable challenges, barriers and opportunities.

*It was evident from the literature that t*here are some key skills that are common across all RN roles, no matter the context. However, the difference between metropolitan and rural and remote areas was around how the RN must apply their fundamental or foundational skills to deliver effective care, and to all people across the lifespan, acuity and care concerns for example, one RN must be able to care for an antenatal patient, and acute trauma, sexual health screening, paediatric presentations, and end of life care, often within the one shift, this demonstrating the mix of foundation and specialist skills required by a single person in the one site and time frame. Training and educating nurses to be prepared for this diversity is challenging and complex.

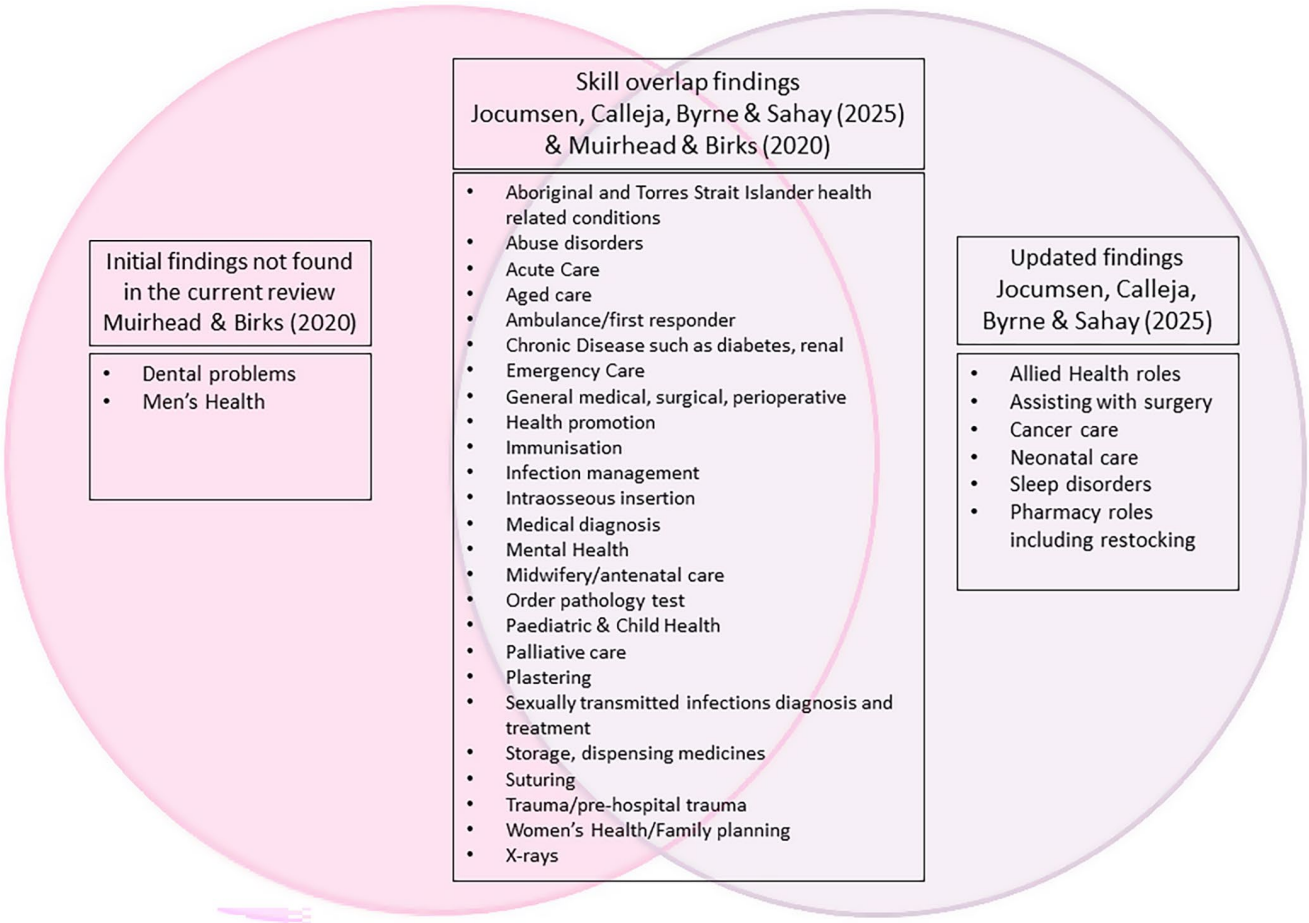

FIGURE 2 | Comparison of the roles of rural and remote registered nurses.

Historically, nursing education took place in hospitals as an apprentice style training and in the 20th century transitioned to university-based education (Australian College of Nursing 1980). In the majority of western countries, nursing is a degree that teaches fundamental concepts and basic knowledge of nursing and nursing skills over a 3 or 4 year duration (Deng 2015; Armstrong et al. 2023) Since 1993, all RNs in Australia have undergone nursing education via a tertiary education pathway (Australia College of Nursing 2020), however, preregistration nursing curriculum may not prepare RNs for practice in remote areas (McCullough et al. 2022), placing importance on the learning of foundational skills within universities. Orientation programmes, post-registration education and clinical practice manuals are used to assist the nurses transition to the rural and remote role (McCullough et al. 2022; Carson et al. 2022). Despite education and orientation strategies, reports continue to indicate that RNs still feel unprepared with limited clarity on what their role is (Hallaran et al. 2023; Najafi and Nasiri 2023), and this may be due to the lack of contextualisation in qualifying training and education programmes.

Potentially, what we consider fundamental skills in rural and remote settings might be viewed as more specialised roles in metropolitan areas. For instance, tasks such as, blood collection, cannulation and POCT might be considered advanced within the scope of RNs in general wards in metropolitan areas, whereas there's an assumption that all RNs in rural and remote areas can perform these roles, as well as initiate when to implement them, along with specialist knowledge and skills such as those found in emergency nursing. Specialist roles were very dependent on the context. The more isolated the RN was, the more specialist roles they needed to perform. This was also inclusive of nurse-led facilities as the majority of the time there was no MO present to assist. Non-clinical roles were also dependent on context. The larger facilities offered some support, management and ancillary staff however the smaller the facility, the more the responsibility existed for the RN to complete all these roles.

5.1 | Generalist or Specialist Role

Muirhead and Birks (2020) supported the perception of the advanced generalist role in rural and remote areas. Croxon et al. (2018) reported that RNs commonly take on a nurse generalist role rather than a nurse specialist role in rural areas. In their paper, the nurse generalist was attributed to be responsible for a multipurpose service which involved coordinating care for patients with an extensive range of medical conditions (Croxon et al. 2018). Hendrickx (2017) advocates for an increased understanding of the generalist role as well as an effective tool detailing the role for recruitment processes.

In 2023, The Australian Department of Health and Ageing released the 2023–2027 National Rural and Remote Nursing Generalist Framework (herein referred to as The Framework), that defines rural and remote RNs as a generalist/specialist role (Australian Government Department of Health and Aged Care 2023). The generalist term has evolved over time but is now a recognised classification. Prior to the introduction of The Framework, authors continuously referred to this generalist specialist role however, based on the literature reviewed, none were concise in outlining this role, instead broadly implying that RNs take on a generalist role (Croxon et al. 2018; Smith and Vandall-Walker 2017; Fedele 2017). The research herein, expands on the work of Muirhead and Birks, goes some way in detailing precisely what a generalist RN is and does.

The Framework states these generalists RNs participate in or lead the clinical assessments, provide care in preventative and emergency management, acute care, aged care, chronic disease, child health, maternity and antenatal, mental health, palliative and health promotion across the lifespan to provide the needed healthcare for their community (Australian Government Department of Health and Aged Care 2023). Prior to the development of The Framework, clarity around the rural and remote role and the experience was lacking (Hendrickx 2017; MacLeod et al. 2021; Byrne et al. 2024). The Framework commences the dialogue of rural and remote communities healthcare needs by providing a contextualised role framework (Australian Government Department of Health and Aged Care 2023). The findings of the review herein aligns with The Framework and extends on previous research completed on the role of the rural generalist.

5.2 | Poorly Prepared or Unprepared

Muirhead and Birks (2020), identified that RNs felt unprepared for the role or lacked the expertise required to address the health priorities in rural and remote communities. After reviewing the literature, we came to a consensus that RNs still have these feelings of unpreparedness however, there is a noted gap in understanding why this occurs. Rural and remote RNs must have autonomy and readiness for whatever comes in the door (Hoppe and Clukey 2021), must have accountability to self and the profession, ensure they are prepared for the context of practice by identifying any gap in their knowledge and skills, and must acquire the extended knowledge and skills needed to deliver safe holistic care to these communities (Australian Government Department of Health and Aged Care 2023). While some researchers suggested more support and education could improve preparedness, it was also identified that resources and education opportunities were limited (MacLeod et al. 2022; Lea and Cruickshank 2017; Smith et al. 2020; Shepherd et al. 2021). This highlights the gap in context-specific education where the majority of formal education is offered in, and focussed on, metropolitan contexts. The education focus can sometimes be unrealistic for RNs working in rural and remote areas, for example, in metropolitan-based advanced life support (ALS), RNs are advised to push the emergency call button which summons an external team. Rural and remote RNs do not have access to these resources, and seeking help adds an additional complexity and a number of processes, to providing care in stressful situations (Stewart 2023). A lot of the metropolitan training that is offered to RNs is idealised within a context that is higher resourced and not applicable to rural and remote areas (Wright et al. 2024). In some parts of the world, there are no established specific education to ensure the professional expertise of RNs working in rural and remote facilities (Mamalelala et al. 2023). This is a noted gap in the literature and an area that needs further research to increase the preparedness of RNs commencing work in these facilities.

5.3 | Extended Scope of Practice

Multiple studies commented on RNs using an extended SOP or working beyond their SOP. It was obvious from the literature that RNs working in rural and remote areas needed to have a generalist SOP and this was different from specialist RN roles undertaken in metropolitan areas. It has been argued that this is a 'double standard' allowing RNs in rural and remote areas to work at an extended or advanced scope whereas RNs working in metropolitan areas are not permitted to do so (Banner et al. 2010). The Framework emphasises the importance that rural and remote RNs work to their full SOP, practice to their full extent of their knowledge and skills and partner with multidisciplinary teams to support their full SOP (Australian Government Department of Health and Aged Care 2023).

After reviewing the literature, we identified that RNs in rural and remote areas at times work outside of their SOP to meet organisational needs, without having education or competency to perform those tasks (Adams et al. 2019). Working outside their SOP and the legal requirements of RNs, particularly in relation to medication practices was particularly identified (McCullough et al. 2022). If RNs are frequently working outside their SOP to meet the health needs of the community, greater attention and clarity is needed in understanding the role, resources, organisations' needs and the tensions that arise from this.

5.4 | Role Uncertainty

Role uncertainty (also referred to as role conflict or role blurring) was discussed throughout the literature. Registered nurses who were not from a small community not only experienced clinical challenges, but community challenges as well. Rural and remote nursing has a community embeddedness, where the RNs belong to the community (Smith and Vandall-Walker 2017; MacKay et al. 2021). There is a lack of anonymity, identity is very much 'they are the nurse', and nurses who wish to keep their lives private are generally not well accepted (Smith and Vandall-Walker 2017; Prengaman et al. 2017; MacKay et al. 2021). While it is not clear why this is the case, it is presumed that trust and frequent staff turnover may contribute to the uncertainty. Uncertainty about the role thus extends outside of the clinical realm, and is connected to the context and environment within which the role takes place.

5.5 | Variation in Rurality

The level of resources available in different countries can significantly impact the roles and responsibilities within those settings. Not all countries are equally resourced, which leads to

variability in the roles that people can be prepared for (Salmond and Echevarria 2017). The level of resourcing directly influences the extent to which preparation can be achieved, and this variability is often tied to a country's economic resources, such as gross domestic product (GDP) (Salmond and Echevarria 2017). As a result, preparing individuals for these roles becomes more challenging, as the context and needs vary greatly. For example, countries with more resources may have fewer rural or remote roles due to the availability of more personnel and infrastructure. In contrast, in countries with fewer resources, like those in parts of Africa, a rural nurse may be required to perform a wider range of duties compared to a rural nurse in more developed countries like the USA. This disparity highlights the need for systemic improvements to address these challenges and create more equitable outcomes across different settings.

This review highlights significant variation, not only between countries but also within a single country. For instance, within Australia, the level of resourcing and the unique characteristics of a specific rural or remote town influences the demographics and needs of the population. This variation presents challenges, as preparation alone cannot account for the diverse needs across different regions. Whether it's a country, state or county, the geographical and environmental differences in rural areas mean that there will always be some degree of variation that cannot be fully addressed through preparation alone.

This review is significant, as it provides a thorough compilation of roles and skills essential for delivering competent care to individuals residing in isolated areas from an international perspective. The review findings could be used to establish a more detailed recruitment criteria and job description for staff starting work in these facilities, and to advocate for greater autonomy and SOP. Secondly, the review findings can assist education providers with planning and delivering programmes to meet the needs of RNs working outside of the metropolitan context. Lastly this review offers valuable insight on the current role and skills requirements of rural and remote RNs that could be used to enhance education and training programmes. By addressing the specific skill sets required for various roles, the results can inform the developement of more targeted and effecting training programs, ensuring they better prepare RNs for the context specific environment. Additionally, these finding could promote alignments between educational curriculum and the evolving need of the rural and remote workforce. Consistent commentary in the literature shows that a large proportion of RNs commencing work in rural and remote areas are not prepared for the complexity and diversity of the rural and remote work environment and further research into their experiences and preparedness is needed, with this renewed understanding of the unique roles and skills requirements of these RNs.

6 | Conclusion

The role of the rural and remote RN is broad and unique and requires different breadth and depth of skills and knowledge than those found in metropolitan areas. Registered nurses in rural and remote areas take on diverse and multifaceted roles and responsibilities. The role includes all levels of care for all patients across the lifespan. This scoping review, expanding on the work of Muirhead and Birks, provides valuable insights into the skills required to care for diverse rural and remote communities and can inform the development of targeted education and training programs, shaping both policy and practice to better address the evolving needs of RN. The level of resources available in a country directly impacts the roles RNs are prepared for, highlighting the need for systemic improvements to ensure equitable outcomes, particularly in rural and remote locations. This scoping review will inform future research that builds on recommendations for practice endorsed by rural and remote experts. Understanding these requirements is essential, as it can inform the future focus on rural and remote nurse education and training and its subsequent impact on the quality of care for people living in rural and remote communities.

Acknowledgements

Open access publishing facilitated by Central Queensland University, as part of the Wiley - Central Queensland University agreement via the Council of Australian University Librarians.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The authors have nothing to report.

References

Adams, M. E., A. Lazarsfeld-Jensen, and K. Francis. 2019. "The Implications of Isolation for Remote Industrial Health Workers." *Rural and Remote Health* 19, no. 2: 5001.

American Nurses Association. 2024. "Recognition of a Nursing Specialty, Approval of a Specialty Nursing Scope of Practice Statement, Acknowledgement of Specialty Nursing Standards of Practice and Affirmation of Focused Practice Competencies."

Aquino, J., J. Crilly, and K. Ranse. 2022. "End-Of-Life Care in Emergency Departments: A National Cross-Sectional Survey of Emergency Care Nurses." *Australasian Emergency Care* 25, no. 2: 161–166.

Armstrong, L., C. Moir, and P. Taylor. 2023. "How, and Under What Contexts, Do Academic-Practice Partnerships Collaborate to Implement Healthcare Improvement Education Into Preregistration Nursing Curriculums: A Realist Review Protocol." *BMJ Open* 13, no. 10: e077784.

Australia College of Nursing. 2020. "Nurse Education in Australia: Part 8." https://www.acn.edu.au/nurseclick/nurse-education-in-australia-part-8.

Australian College of Nursing. 1980. "Move Towards Tertiary Education for Australian Nurses-Mid." https://www.acn.edu.au/nurseclick/nurse-education-in-australia-part-8.

Australian College of Nursing. 2018. "Improving Health Outcomes in Rural and Remote Australia: Optimising the Contribution of Nurses." https://www.acn.edu.au/wp-content/uploads/position-statement-discussion-paper-improving-health-outcomes-rural-remote-australia.pdf.

Australian Government Department of Health and Aged Care. 2023. "The National Rural and Remote Nursing Generalist Framework." https://www.health.gov.au/sites/default/files/2023-03/the-national-rural-and-remote-nursing-generalist-framework-2023-2027.pdf.

Australian Institute of Health and Welfare. 2024. "Rural and Remote Health."

Australian Nursing and Midwifery Accrediation Council. 2019. "Registered Nurse Accreditation Standards."

Baernholdt, M., I. D. Hinton, G. Y, W. X, E. Cramer, and N. Dunton. 2017. "A National Comparison of Rural/Urban Pressure Ulcer and Fall Rates." *Online Journal of Issues in Nursing* 22, no. 2: 1.

Baernholdt, M., I. D. Hinton, G. Yan, W. Xin, E. Cramer, and N. Dunton. 2018. "Fall Rates in Urban and Rural Nursing Units Does Location Matter?" *Journal of Nursing Care Quality* 33, no. 4: 326–333.

Baker, T., K. Moore, J. Lim, et al. 2022. "Rural Emergency Care Facilities May Be Adapting to Their Context: A Population-Level Study of Resources and Workforce." *Australian Journal of Rural Health* 30, no. 3: 393–401.

Banner, D., M. L. MacLeod, and S. Johnston. 2010. "Role Transition in Rural and Remote Primary Health Care Nursing: A Scoping Literature Review." *Canadian Journal of Nursing Research = Revue Canadienne de Recherche en Sciences Infirmieres* 42, no. 4: 40–57.

Beattie, J., D. Griffiths, K. Innes, and J. Morphet. 2019. "Workplace Violence Perpetrated by Clients of Health Care: A Need for Safety and Trauma-Informed Care." *Journal of Clinical Nursing* 28, no. 1–2: 116–124.

Beck, K., A. Mukantaganda, S. Bayitondere, et al. 2018. "Experience: Developing an Inpatient Malnutrition Checklist for Children 6 to 59 Months to Improve WHO Protocol Adherence and Facilitate Quality Improvement in a Low-Resource Setting." *Global Health Action* 11, no. 1: 1503785.

Bell, J., R. Crawford, and K. Holloway. 2018. "Core Components of the Rural Nurse Specialist Role in New Zealand." *Rural and Remote Health* 18, no. 2: 69–76.

Berman, A., G. Frandsen, S. J. Snyder, et al. 2021. *Kozier and Erb's Fundamentals of Nursing.* 5th ed. Melbourne, Australia: Pearson.

Bidner, A., E. Bezak, and N. Parange. 2022. "Evaluation of Antenatal Point-Of-Care Ultrasound Training Workshops for Rural/Remote Healthcare Clinicians: A Prospective Single Cohort Study." *BMC Medical Education* 22, no. 1: 906.

Brewer, C. A., A. Hutton, K. S. Hammad, and S. K. Geale. 2020. "A Feasibility Study on Disaster Preparedness in Regional and Rural Emergency Departments in NEW SOUTH WALES: Nurses Self-Assessment of Knowledge, Skills and Preparation for Disaster Management." *Australasian Emergency Care* 23, no. 1: 29–36.

Broom, J., A. Broom, and E. Kirby. 2019. "The Drivers of Antimicrobial Use Across Institutions, Stakeholders and Economic Settings: A Paradigm Shift Is Required for Effective Optimization." *Journal of Antimicrobial Chemotherapy* 74, no. 9: 2803–2809.

Brown, R. A., and P. A. Crookes. 2016. "What Are the 'Necessary' Skills for a Newly Graduating RN? Results of an Australian Survey." *BMC Nursing* 15: 23.

Bryce, J., E. Foley, and J. Reeves. 2017. "Safety and Security Is Everyone's Business." *Australian Nursing & Midwifery Journal* 24, no. 7: 16.

Byrne, A. L., J. Brown, E. Willis, A. Baldwin, and C. Harvey. 2024. "Nurse Navigators—Champions of the National Rural and Remote Nursing Generalist Framework: A Solution." *Australian Journal of Rural Health* 32, no. 3: 475–487.

Calleja, P., B. Adonteng-Kissi, and B. Romero. 2019. "Transition Support for New Graduate Nurses to Rural and Remote Practice: A Scoping Review." *Nurse Education Today* 76: 8–20.

Campbell, N., A. Farthing, S. Lenthall, et al. 2021. "Workplace Locations of Allied Health and Nursing Graduates Who Undertook a Placement in the Northern Territory of Australia From 2016 to 2019: An Observational Cohort Study." *Australian Journal of Rural Health* 29, no. 6: 947–957.

Carson, D. B., M. McGrail, and A. Sahay. 2022. "Regionalisation and General Practitioner and Nurse Workforce Development in Regional Northern Australia: Insights From 30 Years of Census Migration Data." *Journal of Rural Studies* 91: 98–107.

Central Australian Rural Practitioners Association. 2022. "CARPA Standard Treatment Manual for Remote and Rural Practie. Alice Springs."

Chen, F. C. Y., C. K. C. Ng, and Z. Sun. 2020. "X-Ray Operators' Self-Perceived Competence, Barriers and Facilitators in General Radiography Practice in Western Australia." *Radiography (London, England: 1995)* 26, no. 4: e207-e13.

Clarivate. 2013. "EndNote X9 (Version X9) [Software]."

Connolly, M. 2023. "The National Rural and Remote Nursing Generalist Framework 2023–2027." *Australian Journal of Rural Health* 31, no. 3: 598–599.

CRANAplus. 2018. "CRANAplus Framework for Rural and Isolated Practice."

Cranley, L. A., D. M. Doran, A. E. Tourangeau, A. Kushniruk, and L. Nagle. 2012. "Recognizing and Responding to Uncertainty: A Grounded Theory of Nurses' Uncertainty." *Worldviews on Evidence-Based Nursing* 9, no. 3: 149–158.

Cross, A. J., C. D. Etherton-Beer, R. M. Clifford, K. Potter, and A. T. Page. 2021. "Exploring Stakeholder Roles in Medication Management for People Living With Dementia." *Research in Social & Administrative Pharmacy* 17, no. 4: 707–714.

Croxon, L., L. Deravin, and J. Anderson. 2018. "Dealing With End of Life-New Graduated Nurse Experiences." *Journal of Clinical Nursing* 27, no. 1–2: 337–344.

Deng, F.-F. 2015. "Comparison of Nursing Education Among Different Countries." *Chinese Nursing Research* 2, no. 4: 96–98.

Department of Health and Aged Care. 2023. "Modified Monash Model 2023." https://www.health.gov.au/topics/rural-health-workforce/classifications/mmm?language=en.

East, L., D. Targett, H. Yeates, E. Ryan, L. Quiddington, and C. Woods. 2020. "Nurse and Patient Satisfaction With Intentional Rounding in a Rural Australian Setting." *Journal of Clinical Nursing* 29, no. 7/8: 1365–1371.

Edwards, K. H., R. C. Franklin, M. T. Edwards, and R. A. Stewart. 2022. "Requesting Air Ambulance Transport of Patients With Suspected Appendicitis: The Decision-Making Process Through the Eyes of the Rural Clinician." *Australian Journal of Rural Health* 31, no. 3: 426–435. https://doi.org/10.1111/ajr.12956.

Edwards, S., M. Birks, Y. Chapman, and K. Yates. 2018. "Bringing Together the 'Threads of Care' in Possible Miscarriage for Women, Their Partners and Nurses in Non-Metropolitan EDs." *Collegian* 25, no. 3: 293–301.

Endacott, R., M. O'Connor, A. Williams, et al. 2018. "Roles and Functions of Enrolled Nurses in Australia: Perspectives of Enrolled Nurses and Registered Nurses." *Journal of Clinical Nursing* 27, no. 5–6: e913–e920.

Fedele, R. 2017. "Off the Beaten Track. The Rise of Remote Area Nursing." *Australian Nursing & Midwifery Journal* 24, no. 7: 18–23.

Feo, R., T. Conroy, E. Jangland, et al. 2018. "Towards a Standardised Definition for Fundamental Care: A Modified Delphi Study." *Journal of Clinical Nursing* 27, no. 11–12: 2285–2299.

Fournier, C., G. Blanchet, and J. Pepin. 2021. "Understanding the Expanded Nursing Role in Indigenous Communities: A Qualitative Study." *Journal of Nursing Management* 29, no. 8: 2489–2498.

Garren-Grubbs, T., and L. Hendrickx. 2023. "Rural Emergency Department Nurses' Experiences With Workplace Violence." *Online Journal of Rural Nursing and Health Care* 23, no. 2: 91–107.

Gerace, A., and E. Muir-Cochrane. 2019. "Perceptions of Nurses Working With Psychiatric Consumers Regarding the Elimination of Seclusion and Restraint in Psychiatric Inpatient Settings and Emergency Departments: An Australian Survey." *International Journal of Mental Health Nursing* 28, no. 1: 209–225.

Gerber, K., L. Willmott, B. White, et al. 2022. "Barriers to Adequate Pain and Symptom Relief at the End of Life: A Qualitative Study Capturing Nurses' Perspectives." *Collegian* 29, no. 1: 1–8.

Grant, A. W., and D. J. Buckley. 2019. "Nurse Experiences and Confidence in Treating Critically Ill and Injured Patients Following the Completion of the First Line Emergency Care Course." *Australasian Emergency Care* 22, no. 4: 236–242.

Gunn, K. M., I. Olver, X. Skrabal Ross, N. Harrison, P. M. Livingston, and C. Wilson. 2021. "Improving Survivors' Quality of Life Post-Treatment: The Perspectives of Rural Australian Cancer Survivors and Their Carers." *Cancers* 13, no. 7: 1600. https://doi.org/10.3390/cancers13071600.

Hallaran, A. J., D. S. Edge, J. Almost, and D. Tregunno. 2023. "New Nurses' Perceptions on Transition to Practice: A Thematic Analysis." *Canadian Journal of Nursing Research* 55, no. 1: 126–136.

Hendrickx, L. 2017. "Access to Continuing Education for Critical Care Nurses in Rural or Remote Settings." *Critical Care Nurse* 37, no. 2: 66–71.

Hoppe, L., and L. Clukey. 2021. "Lived Experiences of New Nurse Graduates in Critical Access Hospitals." *Nursing Forum* 56, no. 2: 255–263.

Internation Council of Nurses. 2020. "Guidelines on Advanced Practice Nursing." https://www.icn.ch/system/files/documents/2020-04/ICN_APN%20Report_EN_WEB.pdf.

Isaacson, M. J., M. E. Minton, P. DaRosa, and S. Harming. 2019. "Nurse Comfort With Palliative and End-Of-Life Communication: A Rural and Urban Comparison." *Journal of Hospice & Palliative Nursing* 21, no. 1: 38–45.

Jackson, J., J. Maben, and J. E. Anderson. 2022. "What Are Nurses' Roles in Modern Healthcare? A Qualitative Interview Study Using Interpretive Description." *Journal of Research in Nursing* 27, no. 6: 504–516.

Jacob, A., J. Van Vuuren, L. Kinsman, and E. Spelten. 2022. "Daily Reality of Violence in a Rural Emergency Department: Is Violence Becoming the New Normal?" *Emergency Medicine Australasia: EMA* 34, no. 4: 555–558.

Joanna Briggs Institute. 2023. "Jbi Manual For Evidence Synthesis: Scoping Reviews Chapter." https://jbi-global-wiki.refined.site/space/MANUAL/3283910770/Chapter+11%3A+Scoping+reviews.

Johansen, L. J., T. A. Evanson, J. L. Ralph, C. Hunter, and G. Hart. 2018. "Experiences of Rural Nurses Who Commute to Larger Communities." *Online Journal of Rural Nursing and Health Care* 18, no. 2: 224–264.

Jokiniemi, K., and M. Miettinen. 2020. "Specialist Nurses' Role Domains and Competencies in Specialised Medical Healthcare: A Qualitative Descriptive Study." *International Journal of Caring Sciences* 13, no. 1: 171–179.

Jones, A., R. J. Rahman, and O. J. 2019. "A Crisis in the Countryside—Barriers to Nurse Recruitment and Retention in Rural Areas of High-Income Countries: A Qualitative Meta-Analysis." *Journal of Rural Studies* 72: 153–163.

Katuta, M. N., and V. Nuuyoma. 2023. "Newly Qualified Registered Nurses' and Midwives' Experiences From Rural Health District Placement in Namibia." *BMC Nursing* 22, no. 1: 1–11.

Kitson, A. L. 2018. "The Fundamentals of Care Framework as a Point-Of-Care Nursing Theory." *Nursing Research* 67, no. 2: 99–107.

Lafferty, L., K. Smith, L. Causer, et al. 2021. "Scaling Up Sexually Transmissible Infections Point-of-Care Testing in Remote Aboriginal and Torres Strait Islander Communities: Healthcare Workers' Perceptions of the Barriers and Facilitators." *Implementation Science Communications* 2, no. 1: 127.

Lea, J., and M. Cruickshank. 2017. "The Role of Rural Nurse Managers in Supporting New Graduate Nurses in Rural Practice." *Journal of Nursing Management* 25, no. 3: 176–183.

Lillebuen, L., K. Schick-Makaroff, S. Thompson, and A. Molzahn. 2020. "Facilitators and Barriers to Care in Rural Emergency Departments in Alberta for Patients on Peritoneal Dialysis (PD): An Interpretive Descriptive Study." *Canadian Journal of Kidney Health and Disease* 7: 1–9.

MacKay, S. C., A. Smith, R. G. Kyle, and M. Beattie. 2021. "What Influences Nurses' Decisions to Work in Rural and Remote Settings?: A Systematic Review and Meta-Synthesis of Qualitative Research." *Rural and Remote Health* 21, no. 1: 1–26.

MacLeod, M. L. P., K. L. Penz, D. Banner, et al. 2022. "Mental Health Nursing Practice in Rural and Remote Canada: Insights From a National Survey." *International Journal of Mental Health Nursing* 31, no. 1: 128–141.

MacLeod, M. L. P., L. V. Zimmer, J. G. Kosteniuk, K. L. Penz, and N. J. Stewart. 2021. "The Meaning of Nursing Practice for Nurses Who Are Retired Yet Continue to Work in a Rural or Remote Community." *BMC Nursing* 20, no. 1: 1–13.

Mamalelala, T. T., W. Holzemer, E. S. Seloilwe, E. Iwu, and M. Kamienski. 2023. "Experiences of Rural Nurses With Emergency Patient Transport in a Resource Limited Setting." *International Emergency Nursing* 71: 101379.

Marshall, C., P. Forgeron, D. Harrison, and N. L. Young. 2018. "Exploration of Nurses' Pediatric Pain Management Experiences in Rural Hospitals: A Qualitative Descriptive Study." *Applied Nursing Research* 42: 89–97.

Martin, K., S. Sweeney, K. Wynter, and S. Holton. 2020. "Maternity Connect: Evaluation of an Education Program for Rural Midwives and Nurses." *Sexual & Reproductive Healthcare: Official Journal of the Swedish Association of Midwives* 26: 100558.

Martin, L. K., V. J. Lewis, D. Clark, et al. 2020. "Frontline Barriers to Effective Paramedic and Emergency Nursing STEMI Management: Clinician Perspectives." *Australasian Emergency Care* 23, no. 2: 126–136.

Martin-Misener, R., M. L. P. Macleod, E. C. Wilson, et al. 2020. "The Mosaic of Primary Care Nurses in Rural and Remote Canada: Results From a National Survey." *Health Policy* 15, no. 3: 63–75.

McCallum, A. M., H. E. R. Vandenberg, and K. L. Penz. 2024. "Help Wanted, Experience Preferred, Stamina a Must: A Narrative Review of the Contextual Factors Influencing Nursing Recruitment and Retention in Rural and Remote Western Canada From the Early Twentieth Century to 2023." *Canadian Journal of Nursing Research* 56, no. 2: 134–150.

McCullough, K., S. Bayes, L. Whitehead, A. Williams, and V. Cope. 2022. "Nursing in a Different World: Remote Area Nursing as a Specialist-Generalist Practice Area." *Australian Journal of Rural Health* 30, no. 5: 570–581.

MOFFITT Cancer Center. 2023. "Covidence Systematic Review Software." www.covidence.org.

Moore, M., C. Roberts, J. Newbury, and J. Crossley. 2017. "Am I Getting an Accurate Picture: A Tool to Assess Clinical Handover in Remote Settings?" *BMC Medical Education* 17, no. 1: 213.

Mubangizi, B. 2023. "What Is 'Rural' in South Africa, and Why Does It Matter?" *African Journal of Governance and Development (AJGD)* 12: 1–6.

Muirhead, S., and M. Birks. 2020. "Roles of Rural and Remote Registered Nurses in Australia: An Integrative Review." *Australian Journal of Advanced Nursing* 37, no. 1: 21–33.

Munn, Z., D. Pollock, H. Khalil, et al. 2022. "What Are Scoping Reviews? Providing a Formal Definition of Scoping Reviews as a Type of Evidence Synthesis." *JBI Evidence Synthesis* 20, no. 4: 950–952.

Munroe, B., K. Curtis, M. Fry, et al. 2022. "Increasing Accuracy in Documentation Through the Application of a Structured Emergency Nursing Framework: A Multisite Quasi-Experimental Study." *Journal of Clinical Nursing* 31, no. 19–20: 2874–2885.

Muntlin, Å., E. Jangland, B. Laugesen, et al. 2023. "Bedside Nurses' Perspective on the Fundamentals of Care Framework and Its Application in Clinical Practice: A Multi-Site Focus Group Interview Study." *International Journal of Nursing Studies* 145: 104526.

Najafi, B., and A. Nasiri. 2023. "Explaining Novice Nurses' Experience of Weak Professional Confidence: A Qualitative Study." *SAGE Open Nursing* 9: 23779608231153457.

National Rural Health Alliance. 2019. "Nurses in Rural, Regional and Remote Australia." https://www.ruralhealth.org.au/sites/default/files/publications/fact-sheet-nurses.pdf.

Newhouse, R., H. D. Byon, E. Storkman Wolf, and M. Johantgen. 2018. "Multisite Studies Demonstrate Positive Relationship Between Practice Environments and Smoking Cessation Counseling Evidence-Based Practices." *Worldviews on Evidence-Based Nursing* 15, no. 3: 217–224.

Ngune, I., P. Hasking, S. McGough, D. Wynaden, C. Janerka, and C. Rees. 2021. "Perceptions of Knowledge, Attitude and Skills About Non-Suicidal Self-Injury: A Survey of Emergency and Mental Health Nurses." *International Journal of Mental Health Nursing* 30, no. 3: 635–642.

O'Hara, C., and M. Reid. 2024. "Characterizing the Telehealth Nursing Workforce." *Journal of Nursing Regulation* 15, no. 1: 80–87.

Paliadelis, P. S., G. Parmenter, V. Parker, M. Giles, and I. Higgins. 2012. "The Challenges Confronting Clinicians in Rural Acute Care Settings: A Participatory Research Project." *Rural and Remote Health* 12: 2017.

Peltan, I. D., J. B. Poll, D. Guidry, S. M. Brown, and W. Beninati. 2020. "Acceptability and Perceived Utility of Telemedical Consultation During Cardiac Arrest Resuscitation. A Multicenter Survey." *Annals of the American Thoracic Society* 17, no. 3: 321–328.

Pennington, K. R., K. D. Clark, and S. Knight. 2020. "A Bitter Pill to Swallow: Registered Nurses and Medicines Regulation in Remote Australia." *Rural and Remote Health* 20, no. 4: 6020.

Penz, K. L., N. J. Stewart, C. P. Karunanayake, J. G. Kosteniuk, and M. L. P. MacLeod. 2019. "Competence and Confidence in Rural and Remote Nursing Practice: A Structural Equation Modelling Analysis of National Data." *Journal of Clinical Nursing* 28, no. 9/10: 1664–1679.

Phukubye, T. A., M. O. Mbombi, and T. M. Mothiba. 2019. "Knowledge and Practices of Triage Amongst Nurses Working in the Emergency Departments of Rural Hospitals in Limpopo Province." *Open Public Health Journal* 12, no. 1: 439–448.

Pich, J., and M. Roche. 2020. "Violence on the Job: The Experiences of Nurses and Midwives With Violence From Patients and Their Friends and Relatives." *Healthcare (Basel)* 8, no. 4: 522. https://doi.org/10.3390/healthcare8040522.

Pollock, D., M. D. J. Peters, H. Khalil, et al. 2023. "Recommendations for the Extraction, Analysis, and Presentation of Results in Scoping Reviews." *JBI Evidence Synthesis* 21, no. 3: 520–532.

Porter, D. J. E. 2019. "Family Presence During Resuscitation (FPDR): A Qualitative Descriptive Study Exploring the Experiences of Emergency Personnel Post Resuscitation Heart & Lung." *Journal of Critical Care* 48, no. 4: 268–272.

Porter, J. E., N. Miller, A. Giannis, and N. Coombs. 2017. "Family Presence During Resuscitation (FPDR): Observational Case Studies of Emergency Personnel in Victoria, Australia." *International Emergency Nursing* 33: 37–42.

Prengaman, M., D. R. Terry, D. Schmitz, and E. Baker. 2017. "The Nursing Community Apgar Questionnaire in Rural Australia: An Evidence Based Approach to Recruiting and Retaining Nurses." *Online Journal of Rural Nursing and Health Care* 17, no. 2: 148–171.

Richardson, C., M. Ree, R. S. Bucks, and M. Gradisar. 2021. "Paediatric Sleep Literacy in Australian Health Professionals." *Sleep Medicine* 81: 327–335.

Rocha, G. D. S., M. F. Souza Rodrigues, Y. V. Rocha, et al. 2023. "Perceptions of Nurses Regarding the Management of Snakebite Envenomations: Limits and Possibilities." *Toxicon* 223.

Rohatinsky, N., J. Cave, and C. Krauter. 2020. "Establishing a Mentorship Program in Rural Workplaces: Connection, Communication, and Support Required." *Rural and Remote Health* 20, no. 1: 1–9.

Rurangirwa, A. A., I. Mogren, J. Ntaganira, K. Govender, and G. Krantz. 2018. "Quality of Antenatal Care Services in Rwanda: Assessing Practices of Health Care Providers." *BMC Health Services Research* 18, no. 1: 865.

Salmond, S., and M. Echevarria. 2017. "Healthcare Transformation and Changing Roles for Nursing." *Orthopaedic Nursing* 36: 12–25.

Scrymgeour, G. C., L. Smith, H. Maxwell, and D. Paton. 2020. "Nurses Working in Healthcare Facilities During Natural Disasters: A Qualitative Enquiry." *International Nursing Review* 67, no. 3: 427–435.

Shepherd, J., A. Waller, R. Sanson-Fisher, K. Clark, and J. Ball. 2021. "Barriers to the Provision of Optimal Care to Dying Patients in Hospital: A Cross-Sectional Study of Nurses' Perceptions." *Australian Journal of Advanced Nursing* 38, no. 3: 14–24.

Sims, S., M. Leamy, R. Levenson, S. Brearley, F. Ross, and R. Harris. 2020. "The Delivery of Compassionate Nursing Care in a Tick-Box Culture: Qualitative Perspectives From a Realist Evaluation of Intentional Rounding." *International Journal of Nursing Studies* 107: 103580.

Smith, J. C., and V. Vandall-Walker. 2017. "A Double Whammy! New Baccalaureate Registered Nurses' Transitions Into Rural Acute Care." *Rural and Remote Health* 17, no. 4: 1–14.

Smith, J. G., C. M. Plover, M. C. McChesney, and E. T. Lake. 2019a. "Isolated, Small, and Large Hospitals Have Fewer Nursing Resources Than Urban Hospitals: Implications for Rural Health Policy." *Public Health Nursing* 36, no. 4: 469–477.

Smith, J. G., C. M. Plover, M. C. McChesney, and E. T. Lake. 2019b. "Rural Hospital Nursing Skill Mix and Work Environment Associated With Frequency of Adverse Events." *SAGE Open Nursing* 5: 469–477.

Smith, S., S. Lapkin, J. Sim, and E. Halcomb. 2020. "Nursing Care Left Undone, Practice Environment and Perceived Quality of Care in Small Rural Hospitals." *Journal of Nursing Management* 28, no. 8: 2166–2173.

South African Nursing Council. 2021. "South African Nursing Council Professional Practice for Nurses and Midwives 2021." https://www.sanc.co.za/professional-practice/.

Spangaro, J., J. Vajda, E. Klineberg, et al. 2022. "Emergency Department Staff Experiences of Screening and Response for Intimate Partner Violence in a Multi-Site Feasibility Study: Acceptability, Enablers and Barriers." *Australas Emerg Care* 25, no. 3: 179–184.

Statistics Canada. 2021. "Geographical Definitions: Definition of Census Subdivisions (CSDs)."

Stevens, L., M. Fry, M. Jacques, and A. Barnes. 2020. "Perceptions and Experience of Emergency Discharge as Reported by Nurses and Medical Officers." *Australasian Emergency Care* 23, no. 1: 55–61.

Stewart, R. A. 2023. "Building a Rural and Remote Health Workforce: An Overview of Effective Interventions." *Medical Journal of Australia* 219, no. 3: 1–2.

Styes, A. A., and M. J. Isaacson. 2021. "Improving Rural Emergency Nurses Comfort During Palliative and End-of-Life Communication." *Journal of Rural Nursing & Health Care* 21, no. 1: 100–117.

Trankle, S. A., S. Shanmugam, E. Lewis, M. Nicholson, K. Hillman, and M. Cardona. 2020. "Are we Making Progress on Communication With People Who Are Near the End of Life in the Australian Health System? A Thematic Analysis." *Health Communication* 35, no. 2: 158–167.

U.S. Department of Agriculture ERS. 2025. "Rural Classifications in: Department of Agriculture ERS, Editor."

Varndell, W., M. Fry, and D. Elliott. 2020. "Pain Assessment and Interventions by Nurses in the Emergency Department: A National Survey." *Journal of Clinical Nursing* 29, no. 13–14: 2352–2362.

Varndell, W., A. Hodge, and M. Fry. 2019. "Triage in Australian Emergency Departments: Results of a New South Wales Survey." *Australasian Emergency Care* 22, no. 2: 81–86.

Whiteing, N., J. Barr, and D. M. Rossi. 2021. "The Practice of Rural and Remote Nurses in Australia: A Case Study." *Journal of Clinical Nursing* 31, no. 11-12: 1502–1518. https://doi.org/10.1111/jocn.16002.

Wilcox, K. A., V. Cope, and M. Murray. 2022. "Practice Readiness in Very Remote Hospitals: Perceptions of Early Career and Later Career Registered Nurses." *Collegian*: 53–59.

Williams, S. A., M. Martin, L. C. Hussey, M. Ojeda, B. Carlson, and M. Keckler. 2024. "Are we Missing the Mark? Understanding Health Literacy in A Rural-Border Hospital." *Clinical Nursing Research* 33, no. 5: 326–333.

World Health Organization. 2020. "Retention of the Health Workforce in Rural and Remote Areas: A Systematic Review." https://iris.who.int/bitstream/handle/10665/337300/9789240013865-eng.pdf?sequence=1.

World Health Organization. 2021. "WHO Guideline on Health Workforce Development, Attraction, Recruitment and Retention in Rural and Remote Areas. Geneva." https://www.who.int/publications/i/item/9789240024229.

Wright, L. K., S. Jatrana, and D. Lindsay. 2024. "Remote Area Nurses' Experiences of Workplace Safety in Very Remote Primary Health Clinics: A Qualitative Study." *Journal of Advanced Nursing* 80: 3298–3308.