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Choosing regional, rural, and remote practice: what attracts or deters early-career doctors?

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Abstract

Background Enhancing the retention of medical professionals in regional, rural and remote (RRR) areas requires a multi-faceted strategy that acknowledges and addresses the contextual barriers doctors face when deciding whether to continue practising in RRR hospitals. Gaining a deeper understanding of these factors can inform evidence-based workforce planning and policy development to mitigate the rural physician shortage across Australia. This study aimed to explore motivators and perceived barriers among junior medical doctors when choosing their training location- whether in RRR hospitals or metropolitan settings- during the early years of postgraduate training.

Methods A qualitative study was conducted using virtual one-on-one interviews. The setting included four Hospital and Health Services (HHSs) in Northern Queensland, Australia (Townsville, Cairns, Mackay and North West). Participants were doctors in training from intern level to postgraduate year 5 (including prevocational and early vocational doctors). Twenty-five interviews were transcribed verbatim. Data were thematically analysed, through an inductive approach.

Results Most participants were female ($n = 19$) and aged under 29 years ($n = 21$). The motivations for choosing RRR hospitals among most Australian-trained doctors included proximity to family, a desire for adventure, rural upbringing, peer recommendations, and the availability of benefits through incentivisation schemes. For many recently graduated doctors, regional hospitals were considered the “right size”, offering a broad range of specialties without feeling lost in the crowd often associated with larger metropolitan hospitals. Barriers included limited job opportunities in rural settings, challenges in securing preferred rotations, social isolation, lack of camaraderie in the workplace, and the cost of living.

Conclusion This study provides valuable insights into the key pull and push factors influencing doctors’ decisions to train/ work in RRR areas. At both the HHS and national levels, these findings can help guide decision-makers and employers on where to invest to positively influence doctors’ choices regarding training and practice locations. A multifaceted approach is needed, with interventions tailored to doctors’ specific needs, particularly those that support family life, increase rural exposure, and offer competitive remuneration.

Keywords Recruitment, Retention, Attrition, Early-career doctor, Regional, Rural and remote

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Background

Equitable access to healthcare services in regional, rural, and remote (RRR) areas is a global challenge, especially in geographically large countries with sparsely distributed populations such as Australia [1–4]. Approximately seven million Australians, equating to around 26% of the population, live outside of major cities [5], which has led to a significant discrepancy in the medical workforce per capita between urban and rural areas [6]. In 2020, only 20,000 medical practitioners were working in regional areas and approximately 1,500 in remote and very remote areas, compared to more than 80,000 doctors in major cities [7]. Concerns continue to grow over the declining number of junior doctors willing to pursue General Practitioner (GP) pathways and/or work rurally [4]—with the decline anticipated to continue until 2032, despite the growing demand for GP services in rural areas [8].

Small rural towns in Australia have the fewest healthcare workers per capita, a factor that likely contributes to poorer health outcomes in these areas. Cortie et al. (2024) reported that in major cities there were 1.2 full-time equivalent (FTE) general practitioners per 1,000 residents, compared to just 0.78 FTE in more remote areas. For other types of doctors, major cities had 4.0 FTE per 1,000 people, while more remote regions had only 0.6 FTE. Similarly, nurses and midwives were more prevalent in major cities with 14.3 FTE per 1,000, compared to 7.1 FTE in more remote regions. Allied health professionals followed the same trend, with 8.3 FTE per 1,000 in cities and just 3.0 FTE in more remote regions [6].

Access to health services in rural communities is often limited by physical distance from care, a shortage of stable healthcare staff and high workforce turnover, which affect both primary and specialised care [4, 9]. There is limited evidence specifically addressing turnover rates among medical doctors. However, studies have shown that allied health professionals working in rural and remote areas often have short length of stay, with retention rates declining after one year and dropping significantly after two years [10]. Similar trends have been observed among nurses, with retention rates reported to be 53% higher in health services located in small rural towns compared to those in remote locations [11]. In remote communities of the Northern Territory, Australia, turnover rates for remote area nurses have been reported at 148% per annum, with Aboriginal Health Practitioners also experiencing high turnover at 80% [12]. High turnover presents a significant challenge for the health system, as it is associated with poorer patient outcomes [13] and substantial economic costs related to the recruitment and training of new staff [14].

Numerous interventions and initiatives have been introduced to address the challenges of recruiting and retaining rural doctors; some examples include the

establishment of rural medical schools, increasing medical student numbers, implementing selective admissions policies (such as rural pipeline programs), applying coercive measures (e.g., compulsory rural service), and offering financial incentives [2]. These strategies vary in both practicality and effectiveness, which make it essential to further explore which approaches work best, in which contexts, and under what circumstances. In 2015, the Australian Government provided funding for the Integrated Rural Training Pipeline (IRTP). As part of this scheme in 2017, the Regional Training Hubs (RTHs) were established to support the training and practice of medical students, trainees and junior doctors in RRR areas [15]. Prior to the establishment of the RTHs, a large number of medical graduates had to move to metropolitan locations to pursue postgraduate training pathways. RTHs now work closely with Hospital and Health Services (HHS) to further develop and promote specialist training positions in RRR locations, as well as contributing to the sustainability of training and retention of skilled medical workforce [16].

While many doctors acknowledge the value of RRR training, including broader clinical exposure and increased autonomy, greater responsibility, professional isolation, and reduced access to career development opportunities may prompt many to return to metropolitan (MM1: Modified Monash category [17]) hospitals [18–20]. Some junior doctors feel compelled to choose metropolitan placements despite an interest in rural medicine, due to the belief that early training in MM1 hospitals enhances access to specialist training programs [20]. Others may relocate for personal reasons, such as better opportunities for partners or children, or to expand professional networks and mentorship access [21, 22].

Evidence from a recent study has revealed that after the introduction of RTH, there has been a moderate increase in the preference and acceptance of rural internships in Queensland. However, between 2019 and 2021, retention of doctors in rural hospitals was 82% and 72% in postgraduate years 2 and 3 respectively, indicating rural retention continues to remain a challenge [23]. The quantitative nature of the study did not allow for the identification of the key reasons why Queensland medical graduates decide on non-metro or metro locations, nor could it provide information on why medical graduates chose to leave or stay. The findings of this study as well as ongoing reports [5, 24] on the shortage of medical doctors in Australian rural and remote towns has prompted this qualitative project to deepen understanding of the key reasons attracting or preventing Queensland medical graduates to choose RRR locations in Northern Queensland (NQ).

Materials and methods

The target population in this study were medical doctors- defined as those who had completed medical school and were in their postgraduate years (PGY) 1 to 5 of medical training- working across four NQ Hospital and Health Services (HHS), including Townsville, Cairns, Mackay and North West. No exclusion criteria were applied based on age, gender and training origin (Australian or overseas trained medical doctors). According to Queensland (QLD) Health- the state government department responsible for healthcare in Queensland- priority groups for internship positions are categorised into four groups: (1) Group A (Medical graduates of Queensland universities who are Australian/New Zealand citizens or Australian permanent residents) (2) Group B (Medical graduates of Australian (interstate) or New Zealand universities who are Australian/New Zealand citizens or Australian permanent residents) (3) Group C (Medical graduates of Australian (Queensland or interstate) or New Zealand universities who are NOT Australian / New Zealand citizens or Australian permanent residents) (4) Group D (Medical graduates of Australian University campuses outside of Australia accredited by the Australian Medical Council; OR Medical graduates of international universities who have not completed an internship in Australia or another country. We aimed to recruit participants from all four groups to ensure a diverse range of experiences was represented.

Hospital Medical Education Unit officers and coordinators from the Northern Queensland Regional Training Hubs (NQRTH) assisted with distributing the study flyer. NQRTH is a medical education and training network in NQ. In some hospitals, news bulletins, social media groups and notice boards were also used as additional platforms for distribution. The flyer contained a QR code with an embedded link to an e-consent form, directing participants to a Qualtrics survey. Once they had consented to participate, doctors were asked to complete an online demographic form, and to provide their contact details so a member of the research team could reach out to arrange an interview session. All participants were provided with a participant information sheet which contained the goals and procedures of the study. Sampling was based on doctors' willingness to volunteer to participate. NQRTH coordinators also assisted the team with purposive sampling through approaching the doctors directly via emails.

Interviews were scheduled for approximately 30 min. A total of 25 online one-on-one semi-structured interviews were undertaken from August 2023 to May 2024. Each interview session involved only one interviewer and one interviewee. At the end of each interview, reflections, memos and feelings of the researcher were noted. To ensure consistency in data, the same researcher

conducted all interviews and asked the same set of questions, with the exception of a single interview. While the interview questions were not pilot-tested, they were discussed and refined within the research team prior to data collection, and prompts were provided during the interview (Please see the interview guide in Supplementary File 1). The main indications of data saturation in this study were the frequently discussed concepts for choosing and staying in regional, rural and remote hospitals, e.g., social network, peer recommendation, financial remunerations and supervision and support.

Twenty-four interviews were conducted by SM, and one interview by SW [One interview was conducted by a different team member due to the convenience of their presence in a very remote town, allowing for an in-person meeting with the doctor without the need for extensive scheduling]. The interviewers were James Cook University research officer and research advisor, and were external to the hospitals and thus not known to the participants. The interviewers were both female researchers, working in the College of Medicine and Dentistry and were affiliated with the NQRTH. They had conducted multiple interviews in previous qualitative studies. At the time of interviews, the interviewers were involved in other research focusing on regional and rural medical education and training and had background knowledge of doctors' career pathways and medical education in regional areas which enabled them to address the challenges related to the outsider role. Further, participants were primarily invited through invitation links sent by the Medical Education Unit and RTH, that helped overcome the challenges of being an outsider and building a relationship of trust with the doctors.

Interviews were transcribed verbatim using secure university-hosted software. To minimise personal biases, two researchers (SM, SW) thematically analysed each transcript independently using an inductive approach. Coding was done at phrase, sentence and paragraph levels. NVivo software was utilised to manage data. The research team had regular meetings to identify emerging themes. Interview transcripts were returned to the participants for feedback or correction before data analysis. Fifteen doctors responded to the emails, and three of them made minor corrections. Following the initial data analysis, a study summary was sent to the participants for any additional feedback. No specific feedback was provided on the findings. Given the number of categories, only a brief quote for each key theme was provided in the main text, with additional quotes available in Supplementary File 2 (attractors) and Supplementary File 3 (barriers).

Table 1 Demographic characteristics of the participants per sites

		Townsville HHS (n = 8)	Cairns HHS (n = 5)	Mackay HHS (n = 4)	North West HHS (n = 8)	Overall (n = 25) (%)
PGY level	PGY1	6	2	1	2	11 (44%)
	PGY2	1	-	1	-	2 (8%)
	PGY3	1	-	2	2	5 (20%)
	PGY4	-	3	-	1	4 (16%)
	PGY5 ≤	-	-	-	3	3 (12%)
University of medical degree	Within QLD	4	3	3	7	17 (68%)
	Within Australia	2	1	-	1	4 (16%)
	International	2	1	1	-	4 (16%)
University of medical degree	JCU	3	2	2	6	13 (52%)
	Non-JCU	5	3	2	2	12 (48%)
Place of Birth [†]	Metropolitan	3	2	1	2	8 (33%)
	Regional	1	1	3	1	6 (25%)
	Rural	3	1	-	4	8 (33%)
	Remote	-	1	-	1	2 (8%)
RRR living background	< 5 years	3	1	1	-	5 (20%)
	5–10 years	1	-	-	4	5 (20%)
	> 10 years	4	4	3	4	15 (60%)

HHS: Hospital and Health Service, PGY: Postgraduate Year, JCU: James Cook University, RRR: Regional, Rural and Remote, QLD: Queensland

[†]The values indicate the number of responses in the online form. If a participant did not respond to a question, the response was marked as unassigned, and therefore not counted in the total numbers

**Image 1** Attractors for choosing regional, rural or remote hospitals

Results

A total of 25 junior doctors were interviewed from Townsville, Cairns, Mackay, and North West HHS (participation rates: 32%, 20%, 16%, and 32%, respectively). Over half were PGY1-2 doctors (52%), and the remainder PGY3-5. Most were female (76%) and under 29 years of age (84%). Based on Queensland Health internship priority classification, 15 participants were Group A, 4 Group

B, and 6 were Group C or D. 68% of participants were graduates of Queensland medical schools, with 52% from James Cook University. While 33% were born in metropolitan areas, 67% were born in RRR settings. Regarding prior rural living experience, 60% had lived more than 10 years in a rural area, 20% for 5–10 years, and 20% for less than 5 years (Table 1).

Attractors

Analysis of the interview transcripts and reflective journals identified six categories referring to personal and professional reasons for choosing to train or work in RRR hospitals (Image 1). In this study, locals were defined as Queensland graduates, and non-locals as interstate or international graduate doctors. For non-local doctors, the decision to choose NQ was primarily restricted by the availability of options and regulatory rules. For Australian-trained doctors, the main motivators for rural training/ practice in NQ RRR hospitals were categorised as:

- Regional hospitals: The “right size” (Participant Number (P)12- Regional [area of practice at the time of the interview]).
- Family reasons (including friends and social network).
- Experiencing something different (e.g., having an adventure or learning about medicine unique to NQ).

- Recommendations from peers (and, also word of mouth).
- Rural experience and intention.
- Financial incentives.

Regional hospitals: the right size

Doctors referred to regional hospitals as the “right size” (P12- Regional), indicating that the hospitals were big enough to provide the clinical opportunities that the junior doctors needed while not being lost in the crowd of larger metropolitan hospitals. The hospitals also offered a mix of different specialities, but at the same time were small enough for junior doctors to become familiar with the system, and build and develop their professional network, especially for newly started interns looking to get the sense of a RRR context. [The *italics* indicate direct quotes from the participants].

I guess being familiar with the area and because It's a tertiary hospital, so it has all the specialties. Even if I didn't want to do surgery or radiology, I could still change my mind and still explore other options and then I think the other thing is that it's not a big hospital where you don't know your consultants' name or the consultant never sees you. It's big enough to have everything, but it's still small enough for people to know you and for you to make good relationships that will be beneficial for like your future career. (P3- Regional)

Family reasons (including friends and social network)

Proximity to family, friends and social networks and being originally from or raised in RRR areas were frequently described as factors influencing the decision to preference RRR hospitals, “I'm from a city which is two hours from Townsville and my family is not too far. So, Townsville is like a second home... my parents come and go frequently. So, I want to be close to home, close to them.” (P1- Regional).

In couple relationships, the partner's employment was repeatedly mentioned as a determining factor to stay, especially if the partner's profession was considered as “niche” and specific to rural/remote areas, “I think the other thing that I think is important is having a partner- a partner who can find a job and have a job in regional rural areas and so both partners can stay and work there.” (P21- Rural).

The co-location of partners and the support from the hospital were recognised by the doctors and viewed positively. As this doctor described:

Other main factor was that my partner is an international medical graduate, and I had heard from friends and people that were above me, that Towns-

ville really looked after those sort of couples and tried to give them both jobs and keep them together at the hospital, and so that was probably the main driving factor. (P22- Regional)

Experiencing something different

Doctors, especially those external to NQ, commonly said that one main reason for choosing a RRR facility was to challenge themselves, have an adventure or experience a lifestyle change. Exposure to populations from different demographic backgrounds was referred to as a special experience helping doctors get hands-on skills. Some doctors pointed to the potential for higher autonomy in RRR hospitals compared to busier and larger metropolitan hospitals. Learning rural clinical skills was an important factor; particularly, for those doctors who graduated from medical schools where undertaking rural placement was not a requirement.

New/different experiences meant different things to different doctors. For some doctors, moving across QLD HHSs provided an opportunity for exposure to different populations, “I wanted to challenge myself and move somewhere that would offer more experience in the early stages of my career. (P17- Rural)”, or similarly another doctor who mentioned, “So, we decided to come to [RRR hospital] because we had been in [RRR HHS] for three years, and I think [it] is a bit of a change... to see what the different health service was like.... I think... kind of experience-wise provides a very different population base.” (P7- Rural).

Recommendations from peers (word of mouth)

Participants spoke extensively about word of mouth being a key factor in their decision making when choosing RRR hospitals. Hearing firsthand about the facilities from a colleague who had already worked at a hospital was considered to be a reliable source of information. Further, the presence of friends/ colleagues in the destination hospital could potentially strengthen their decision to choose one of the NQ RRR facilities. Below are only a few example quotes:

I would say I was given lots of advice from doctors to stay in [RRR hospital]. It was doctors at the hospital here, but also at other places who said they'd recommend [RRR hospital] as a hospital. They told me to stay where I'm used to, or they worked there and they said it was really nice or even some people had moved away and said Oh I wish I'd stayed because it was really good. (P12- Regional)

Rural experience and intention

Some doctors who came from a rural background (e.g., born or lived in RRR areas) regarded rural work as a

rewarding job, and chose NQ to make a difference in a rural community, *"I'm brought up in this rural life background, I wanted to give back to my community. So, I thought to stay in [RRR town] and I was already familiar with the hospital."* (P1- Regional). Apart from the desire to serve rural communities, other factors were closely tied to doctors' decisions to preferencing RRR hospitals. These included rural training and having background knowledge of the hospital, e.g., through their previous rural placements, *"I've done a lot of placements out there as a medical student and then I was on the rural generalist pathway. So, [RRR hospital] quite fits in quite well with the rural generalist pathway because you get all your core rotations in the first two provisional years."* (P13- Remote). In addition to rural background or rural training, some doctors had the interest and intention of following a rural pathway, as this doctor described: *"So, I'm thinking rural generalism, and thinking of applying to ACRRM [Australian College of Rural and Remote Medicine]. I'm like super keen on the rural generalist sort of job, work in a GP clinic and work in a hospital you know, you're treating your neighbours and your friends and everything."* (P20- Remote).

Financial incentives

Rural allowance was appealing to doctors at different PG levels, and in particular to junior doctors who had planned to save money in the early years of their careers. Remuneration, rural allowance and free accommodation in rural and remote areas were referred to as *"icing on the cake"* (P13- Remote), indicating that they were probably not the main reason for rural-remote preference. The comments about rural allowance and accommodation were primarily made by doctors working in the Northwest Hospital and Health Service (NWHHS) sites that are classified as remote areas, with the MM rank of 6, *"Obviously free accommodation was another big selling point as well as the rural allowance that you get, for going to work in [RRR hospital] as a junior doctor...That wasn't the biggest selling point for me, but certainly a perk when I found out about it."* (P21- Rural).

Ten participants in our cohort were external to QLD, meaning that they were either interstate graduates, were on an international visa, or had received their medical degree from an international university, and therefore, were categorised as priority Groups B, C or D, respectively. Choice of the hospital for different priority groups could be restricted by certain legislative and regulatory factors that govern the recruitment process. For Australian-trained doctors, having rural service obligations, e.g. the Bonded Medical Program (BMP), and for groups C and D doctors being on an international visa were associated with some recruitment restrictions, which determined their choice of location of training/ practice. Some

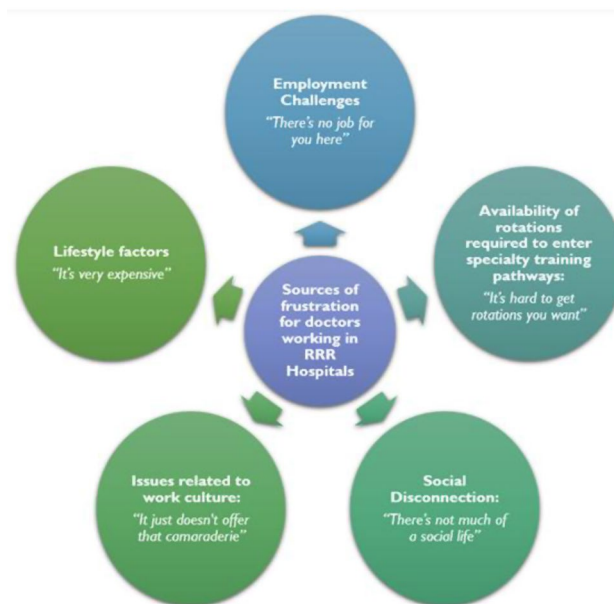


Image 2 Barriers to choosing or staying in regional, rural and remote settings; RRR: Regional Rural and Remote

doctors in categories C and D, said that they used a scattergun approach to apply for multiple hospitals across the country, *"I am [Nationality removed] and so with getting internship spots, I think we're the third group or whatever to be assigned a spot. So, my chances of getting the spot at the regional Hospital are better than if there was other metropolitan site."* (P7- Rural). Similarly, another doctor said:

As an IMG [International Medical Graduate], we are not left with much choices. I think it's just more of the situation we become in so we become in this situation... once we pass the AMC [Australian Medical Council] exam, so we just apply everywhere in Australia and whichever place gets back with the response, then we just focus more on to that place. (P24- Regional).

Barriers

This section summarises the major challenges the rural doctors reported in choosing or staying in RRR hospitals; some of these challenges were big enough for doctors to consider re-locating (Image 2). While many participants expressed a desire to serve rural communities, key barriers included:

- Limited employment opportunities for rural generalists in RRR hospitals.
- Inability to access desired rotations.
- Social isolation and lack of community integration.
- Poor workplace camaraderie.
- High cost of living.

“There’s no job for you here”; employment challenges

Future employment emerged as a significant concern, particularly for Rural Generalist trainees in the rural and remote regions of North West, Mackay, and Cairns HHS. Despite completing both their Rural Generalist (RG) and Advanced Skills Training (AST) within these regions, many doctors struggled to secure positions aligned with their advanced skill sets. The lack of ongoing employment opportunities often forced them to seek work outside the region- or even outside the state. Employment was a common challenge in the North West sites, where the local hospitals focus is predominantly on training new doctors, rather than retaining existing trainees upon completion of their pathways.

I think one of the biggest consequences is that it [RRR hospital anonymised] is a specialist-led hospital, so you know, staff specialist, consultants in specific fields run each department. Because of that, there’s not a lot of senior positions for rural generalists at that hospital. So, a lot of people in my position do have to leave because even if they do all their ACRRM training there, they don’t hire rural generalists. (P13- Remote)

Some rural generalists described situations where after completing certain AST, they were upskilled to a point where they could no longer be hired by the same hospital in which they trained because there was no senior role defined for that type of skillset. The concern was, in part, because of not receiving a job offer and also not getting the chance to use the AST skills that they were trained for. As this doctor described, there was a concern about becoming de-skilled and moving backwards if not offered a relevant position:

There’s not really a role within the hospital to accommodate an advanced diploma that, like someone that’s got the certificate and has finished that training year. So, although I could have done GP training at [RRR centre] which is the GP clinic, there wouldn’t have been the opportunity for me to use the diploma by doing any inpatient obstetrics, which felt like will be a step backwards after finishing a year of the intensive training. (P17- Rural)

“It’s hard to get rotations you want”: availability of rotations required to enter specialty training pathways

Experiences were diverse regarding availability of rotations. Offering rotations that aligned with the doctors’ intended career pathway has the potential to keep the doctors satisfied, and act as an incentive for remaining at that hospital. But some doctors were unhappy if they did not get the rotations they wanted; in particular, if the

doctors were on, or trying to get on, a specialty training pathway and had to complete certain mandatory rotations as part of this training. Accommodating doctors’ preferred rotations was frequently referred to as a key strategy for workforce sustainability, which could potentially benefit both local doctors and those considering a return to their non-metropolitan hometowns.

I would say it can be difficult to get the rotations that you want, especially if you’re in your PGY2 and 3.... you’re thinking of getting onto a special training program....

Rotations... That’s the reason that I’m not working at [RRR Hospital] this year, because I was on ACRRM and I needed paediatrics and anaesthetics and other things....

I did e-mail about it, I was like hey look like you know I’m on ACRRM program and I thought that I would get at least one of these... what’s going on?... I was like why would I do another hospital-based rotational year if I’m not going to get the only two hospital-based rotations that I actually need? (P14- Rural)

“There’s not much of a social life”; social disconnection

Social life in RRR areas is different from that of bigger cities. Feelings of isolation were a recurring sub-theme regardless of the doctors’ gender or PG level. However, certain groups of doctors appeared to have had greater difficulties, including non-local doctors and those living without their family or friends nearby.

I think what’s hard is not having family close by, that’s even though I’ve been away from home for seven years at university, I think the actual distance from home makes it hard because you can’t just go visit family quickly and you often don’t have enough time off and you know at weekends not long enough to be able to go see them or to justify the cost of flights and things. So, I would say that would probably be the hardest. (P6- Regional)

Building a social network could prove difficult for non-local doctors, especially young interns, who came to a new environment and started a professional life, with limited time to make friends outside of work.

For most people it would be coming into a new town, and building your social network again, and that’s happened probably slower than what I’m used to, given that at university it’s quite easy, and then as soon as you’re in a professional environment, it’s not as easy to build those social connections out-

side of work, given how busy everyone is, and also, I think we're all tired at the start of internship, which kind of makes it a bit harder and a bit more effort required. (P6- Regional)

The same doctor, who did her medical degree in a metropolitan area, referred to limited “outdoorsy” events and café culture in RRR areas which could potentially limit doctors’ ability to socialise outside the hospital and mentioned, *“I think a lot of the time when I’ve spoken to others, they reminisce about food in Brisbane or food in Melbourne and going down and doing stuff like that”* (P6- Regional). Another doctor, who also came from a metropolitan area, referred to the “transitory culture” (P5- Regional) of the medical workforce in RRR areas, and the fact that the non-locals often prioritise work over family, even if it is not what they wish to do, *“They get ticked off what they need and then they go. If you’re not from here, it’s rare that you’ll want to stay because for a lot of people, even for people who don’t necessarily want to have it this way, work is the priority, because there’s nothing else, in terms of like just activities and things to do.”* (P5- Regional).

“It just doesn’t offer that camaraderie”; issues related to work culture

This sub-theme discusses the challenges related to the hospital departments, or the relationship that doctors had with their seniors, supervisors or other hospital staff. A lack of trust between staff in some departments was a push factor for moving out. The majority of doctors spoke about the supportive environment in the hospitals in which they were working. They compared the RRR environment favourably with the metropolitan hospitals based on their own previous experiences or from second-hand information from their colleagues, and expressed satisfaction with the level of support they received during their internship and subsequent years as a junior doctor. The doctors positively spoke about being *“thrown in the deep end”* (P8-Regional) from the early stages of their internship and referred to it as an opportunity for autonomous practice, which in the majority of cases was associated with proper supervision. For newly started interns, the experience could have been daunting at the beginning; however, too much responsibility early in their career did not appear to negatively impact their training experience as long as the responsibilities were accompanied by support from senior staff. However, some doctors also shared some experiences where they felt they were left unsupported and their call for help was not responded to appropriately. Some doctors expressed concern not only because of the loss of training opportunities, but because of patient safety. One doctor called the hospital environment “adversarial” and shared: *“[RRR*

hospital department] was one of the ones that just made me like, do I even want to do Medicine, if this is what it’s like... we weren’t getting support from the registrars or the PHO’s, so you just felt very unsupported in your decision making.” (P18- Metropolitan).

“It’s very expensive”; lifestyle factors

Costs of living, accommodation and flights were identified as some of the major financial challenges for junior doctors in RRR locations. These additional costs acted as a deterrent for doctors when making the decision to come to on or stay on in rural areas. As these doctors described, *“Probably the biggest part was the cost of getting out of [RRR hospital]. The flights are very expensive even with the resident discount. It’s very expensive to get even just to [RRR town].”* (P17- Rural).

A few doctors commented on the challenges associated with meeting the family’s needs and expectations in rural and remote areas; e.g., traveling, children’s schooling and access to veterinary services, *“When their kids reach high school, if there’s not a lot of good schooling options in that area, they’ll often have to move to a city. Boarding school is very expensive. You know, it’s 50 grand a kid per year. So that’s even on a doctor’s wage, that’s not sustainable.”* (P13- Remote). Access to health and welfare services could even be a challenge for the doctors themselves. It was acknowledged that such limitations may justify the fact that some doctors choose to fly in fly out rather than stay in the town permanently.

Discussion

This study provides an overall picture of attractors and barriers among early career doctors in regard to continued training and practising in RRR hospitals in NQ. Recruitment and retention of rural health workforce is a global challenge and, regardless of the geographical characteristics, some of the underlying reasons in Australia are similar to those found in many other countries [1, 25]. The study participants included young doctors, of whom more than half were in their 20s. For many doctors, this stage of life is the time of major life events, such as starting a family, choosing the place of residence, undergoing postgraduate transitions, choosing their training pathway and establishing their career [26, 27]. The attracting factors to RRR areas are, as such, tied with these life events. Over the past few years, many barriers to stay in RRR NQ have been removed, in particular, with regards to speciality training, e.g., through RTH opportunities. This is reflected in the first theme in which the participants referred to regional hospitals as the “right size” (P12-Regional), offering a diverse range of speciality training. However, it is also acknowledged that still many specialities cannot be commenced or completed in the area,

leaving the doctors with no choice other than pursuing the training outside the region.

Having a circle of friends/ family and social connections stood out as a major factor for most doctors, which is also a widely reported finding in the literature [28–31]. Medical training is a demanding program [26]; many doctors chose regional-rural hospitals to receive support from family/ friends who were already residing in the area. Some doctors moved to NQ with their partners; the necessity of job opportunities for the partner was frequently spoken about. Partner's profession, whether medical or non-medical, was critical for the decision to move. At the hospital level, the co-location of partners who were in the medical profession appeared to work as a recruitment and, probably, a short-term retention strategy. However, given the limited job market in rural-remote areas, for doctors with non-medical partners, the decision to move is more complex; especially, in some RRR areas where the dominant job opportunities are based on the geography of the region, e.g., agriculture or mining. Altogether, the issues related to partner/ family highlight the significance of targeting the needs and expectations of both rural doctors and their families.

Approximately 60% of the participants said that they were either born or had lived in RRR areas for more than 10 years. Rural upbringing is tied with the concept of place attachment among the rural health workforce and is a strong predictor of rural retention [32]. Evidence suggests that extended rural exposure through regional-rural clinical training can also significantly increase the likelihood of rural work even in the absence of a rural background, though a rural background has an amplifying effect [33, 34].

For some doctors, welcoming adventures and flexibility in changing workplaces- known personality traits for choosing rural practice [35]- were the key factors to preference a RRR hospital. A testament to this were comments made by some non-local doctors who spoke about an appetite for adventurous experiences and a change of scenery. For most doctors, RRR geographical attractiveness, outdoor activities and short daily commute were appealing. Access to /and involvement in social groups and activities in or outside the hospital were described as enriching experiences.

While some doctors gravitated towards rural and remote areas from the beginning, others expressed that only after coming to the region did they find it different and appealing. Some non-local doctors in this study expressed that, due to limited/ or no prior rural exposure, what they initially thought of as “RRR” was different from what they actually experienced after spending some time in the area. Doctors start their PG training in RRR hospitals with a variety of pre-conceptions and expectations. Some choose rural hospitals to obtain their vocational

qualifications and then move to urban areas later in life [35], while others may delay rural practice until the later stages of vocational training. Regardless of doctors' intents, the importance of having strong rural motivators and regular positive experiences throughout their training pathway cannot be discounted for longer retention [36]. Rural clinical schools and regional training hubs have played a significant role in creating a positive rural experience and extending rural exposure across the continuum of medical training.

Branding of rural sites is a powerful tool in drawing doctors to rural areas. The study suggests that, for many doctors, recommendations received from their peers or mentors appeared to be impactful on their decision to go rural. Doctors talk about their work-related experiences with their colleagues, and word of mouth provides doctors with first-hand information about the area and the hospital. Similar to the previous report [35], some doctors in this study said they came to RRR hospital because the hospital/area was recommended by a senior colleague. Therefore, the efforts put in place to increase the job satisfaction of doctors who are currently working in RRR settings may positively influence the recruitment of the next generation of rural doctors.

While financial incentives may facilitate recruitment, evidence is limited on whether these are effective for long-term workforce sustainability [37]. Sourcing accommodation in rural and remote areas remains a challenge, which to some extent has been alleviated by the provision of the rural allowance scheme in some regions. Failure to consider the financial burden associated with rural living for doctors can lead to poorer uptake of RRR positions.

In this study, the main barriers included limited rural job opportunities, social disconnection, lifestyle factors, work-place culture problems and challenges in getting the desired rotations. Earlier research has identified some similar barriers [30, 31], which highlights the fact that many of these barriers are still ongoing problems.

Our findings offer novel nuances to understanding the challenges that rural generalists face in remote areas where the hospitals are primarily run by specialists. Many rural generalists who have trained in RRR hospitals- in particular those with specific types of ASTs- struggled to find ongoing employment in those same settings, despite there being vacancies for locums. The absence of permanent roles for locally trained RGs who understand the local context and were willing to work flexibly was a significant barrier. It is also important to acknowledge that some RRR hospitals do not offer access to full specialist training, prompting doctors to relocate. Those who had invested several years in rural service expressed disappointment at the limited career pathways available to them.

Our findings align with and expand upon the findings of previous Australian studies exploring the role of community connectedness in doctors' decision to stay or leave rural locations [35, 38]. In the absence of community integration, building a sustainable rural medical workforce would be challenging, if not impossible [28, 29]. In this study, we heard about a wide range of experiences, from very positive to extremely negative, which all should be contextualised based on the doctors' rural background, age, training origin (Australian or international) and having/ not having a family or social network in the region. It is also important to consider the stage of life and career of each of the doctors individually. As explicitly stated by some doctors, they could have had a different experience had they entered the region at another point in their lives. Some experiences and career decisions could be age-dependent, and for international doctors, the experiences and expectations could also be related to cultural background.

Supervision and mentorship were identified as a critical factor for workplace satisfaction. While doctors valued autonomy, they also relied on effective supervision to build clinical confidence. Some reported inconsistent or inadequate supervision, especially when working with locum doctors unfamiliar with local protocols. The transient nature of locum staffing made it difficult to establish collegial relationships and contributed to emotional fatigue. Participants noted that locums often lacked commitment to teaching, which negatively impacted the learning environment. Evidence is clear on the importance of medical collegiality in pursuing excellence in patient care [39], suggesting that locums' high turnover may have consequences on patients' safety and quality of care as well. Consistent with the literature, some comments in this study pointed to the fact that locum doctors may not be fully invested in the role, either in patient care or in the supervision of junior doctors [40].

Participants had mixed experiences regarding receiving their desired rotations. This could be, in part, because of different management policies in different HHSs. For doctors who had decided to pursue a particular speciality, a source of tension with the workforce unit was about receiving (or not) the required rotations for their training pathway when desired. Apart from the type of rotations and rostering, the workload itself could also be overwhelming. Some doctors may come to RRR facilities with a higher expectation of work-life balance. If the expectations are not met, and when they get treatment similar to that in bigger metropolitan hospitals, they may start re-considering if rural practice is the right decision. This reconsideration may be further influenced by additional challenges such as being non-local, lacking immediate family in the area, or struggling to adjust and connect with the rural community.

International medical graduates (IMGs) identified unique challenges, including the need to adapt to the Australian healthcare system. Some reported lacking targeted support during the transition period. Without oversight from senior, local doctors, the burden of this period could be placed on Australian-trained doctors to compensate their international colleagues' lack of contextual knowledge. Given that the Australian rural health system continues to rely upon international graduates, addressing their early career challenges would likely be a positive return on investment.

Limitations

This study primarily reflects the perspectives of a young cohort, with 84% of participants under 29 years of age. Many had not yet started families or committed to specific career paths, which may influence transferability of findings. The study outcomes need to be read in the context of predominantly early stage of life and medical career. We approached doctors through emails and flyers, which were distributed by the hospital medical education units to reach the target participants. However, we acknowledge that general practitioners working in the private sector were not included. Additionally, the study only involved doctors in years 1–5 of training, excluding those in later stages who may have offered different perspectives and experiences. The study findings represent the RRR context in Northern QLD, and thus the challenges mentioned in participating hospitals may not be transferable to other RRR hospitals in QLD. For example, challenges faced by RGs in specialist-led hospitals in the North West may not apply elsewhere. Further, this study captured the experiences of doctors who were currently training in the northern region of Queensland, Australia. While some challenges may be common across rural settings, we acknowledge that the experiences shared in this study are specific to the Australian context, and more precisely, to northern Queensland. This region has distinct geographic, climatic, demographic, and cultural characteristics that may not be representative of other rural or remote areas around the world. Also, the majority of participants were QLD medical graduates that needs to be taken into account when interpreting the findings. Being non-metropolitan is one thing that the four included HHS have in common; however, they are different regarding facility size, numbers of junior doctors, and connection to specialty training which might have impacted the experiences of participants regarding their training and practice in an RRR setting. Gender roles play a significant role in career decision-making at different life stages. For female doctors, family responsibilities and partner employment are often key considerations [26, 41]. In our study, many female participants noted that general practice appealed to them due to its

flexible work hours. While the majority of participants were female ($n=19$), the qualitative nature of the study limits our ability to explore associations between gender and other variables such as reasons for relocation, family obligations, or career planning. It is possible that similar themes may have emerged among male doctors had more been included in the sample. Therefore, the findings should be interpreted with consideration that the majority of participants were female. Study findings reflect the experiences and perceptions of only those doctors who volunteered to participate. Also, due to the small number of interstate and international participants, the experiences shared by this group of doctors may not be representative.

Implications and recommendations

Findings highlight several actionable recommendations for medical recruiters and health policy makers to consider in attracting and retaining junior doctors to RRR hospitals.

- Expand rural job availability to provide stability and career planning confidence for junior doctors.
- Foster a supportive workplace culture, recognising the role of mentorship and collegiality in wellbeing and professional development.
- Strengthen social integration strategies, particularly for non-local and early-career doctors, by monitoring wellbeing and encouraging community involvement. Experience of rural practice varied significantly between doctors and sites. Not all doctors may be the “right fit” for every rural community. However, proactive support, inclusive work environments, and strategic workforce planning can improve retention outcomes.
- Improve alignment between training needs and rotational access, ensuring early-career doctors can pursue chosen specialties without leaving the region.

Conclusion

As one participant noted, “little things matter.” This study extends that to “little and big things matter”. Structural issues such as job opportunities, understaffing, lifestyle factors and cost of living in rural areas are some of the ‘big things’ that matter, alongside the ‘little things’ such as the treatment doctors receive regarding their rosters/leave requests, the exhaustion as a result of constant workforce fluctuations, the feeling of not being valued, or the frustration from poor quality supervision. This study provides employers and workforce planners with insights on some major and minor factors that can accumulate and drive decisions to leave.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12913-025-13465-3>.

Supplementary Material 1

Supplementary Material 2

Supplementary Material 3

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Author contributions

SM: Conceptualisation; Data Curation; Formal Analysis; Investigation; Methodology; Project Administration; Visualisation; Writing- Original Draft Preparation; Writing- Review & Editing. SW: Conceptualisation; Formal Analysis; Methodology; Project Administration; Visualisation; Writing- Review & Editing. TW: Conceptualisation; Methodology; Supervision; Writing- Review & Editing.

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Data availability

In this qualitative study consent was obtained to use or publish de-identified data at an aggregated level rather than individual level and hence data set cannot be shared publicly. The de-identified data can be obtained from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. The ethics application was approved by the Human Research Ethics Committee of the Townsville Hospital and Health Services (QTHS/94137- 1st Jun 2023). Site-Specific Assessment (i.e., Research Governance) applications were approved by the relevant Hospital and Health Services across Northern Queensland, including Townsville, Cairns, Mackay, and the North West. Participation was voluntary and all participants gave informed consent. Participants accessed the e-consent form via a QR code on the flyer, which directed them to a Qualtrics survey. The form outlined key information including potential risks and benefits, what participation involved, and how data confidentiality would be maintained. After consenting, participants provided demographic details and contact information to arrange an interview.

Consent for publication

Not applicable.

Competing interests

Sonia Minooee is an Editorial Board Member for BMC Archives of Public Health and BMC Pregnancy and Childbirth.

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