

WHAT 'SPARKS' INNOVATION IN RURAL HEALTH SETTINGS: A CASE STUDY

Sheree Lloyd^{1*}, Gerard FitzGerald², Jean Collie³, Cynthia Cliff⁴

1. University of Tasmania, Australia
2. School of Public Health and Social Work, Queensland University of Technology (QUT), Australia
3. School of Medicine, Faculty of Science, Medicine & Health, University of Wollongong, Australia
4. Research and Innovation Division, University of Southern Queensland, Australia

Correspondence: sheree.lloyd@utas.edu.au

ABSTRACT

OBJECTIVE

To determine how innovation occurs and identify the factors that support innovation in a rural hospital in New South Wales, Australia.

DESIGN

Situated within a larger case study, this research collected qualitative data using semi-structured interviews.

SETTING

Inner regional hospital, located in a city, providing a broad range of acute and primary health services to a rural community.

PARTICIPANTS

Hospital executives, department managers, consultant and staff specialist surgeons, physicians, nursing, nursing managers and allied health staff were recruited after a phone, personal or email approach.

MAIN OUTCOME MEASURE

Qualitative interviews (n=25) conducted in a rural hospital.

RESULTS

Fourteen innovations were identified. Factors supporting innovation were when individuals who were valued by team members had the ability to make within team innovations with ease; clinicians with ideas for improvement led innovation; external agencies- the Clinical Excellence Commission and the Agency for Clinical Innovation provided expertise, ideas, and motivation for innovation. Limiting factors included time for innovation, creative thinking, planning, and implementation. Funding, the bureaucracy and multiple points of consultation to make changes were also identified.

CONCLUSIONS

Innovation occurred despite the absence of factors theory suggests are required. In rural settings, there are limited staff and resources leading to scarcity with no additional capacity in the system and innovation is a necessity. Further innovation could be unleashed if small amounts of resourcing and time were provided to staff with innovative ideas to improve services, change processes or introduce new ways of working.

KEYWORDS

rural health, innovation, organisational factors, interviews, qualitative, case study.

INTRODUCTION

Innovative models of care, policies, programs, and technological innovations have generated benefits for health service providers, patients, carers, and funders of Australian health services. In Australia, an innovative workforce and care delivery models, treatments and technologies are enabling faster recovery and lead to increased efficiency and supported health care organisations to manage large volumes of patients [1]. In Canada, the United Kingdom, Germany, Australia and globally, shifts in population demographics, costs and fragmentation in health care delivery models are driving innovation and health reform [2].

Rural hospitals manage challenges in providing health services and their communities are often socio-economically disadvantaged with poorer health outcomes [3–6]. There are recognised obstacles to accessing health services in the right place, at the right time [6, 7]. Innovation can make improvements in both metropolitan and rural settings, and the literature describes the determinants that are needed for innovation to flourish in health care organisations [8–10]. Common determinants include leadership, resourcing, infrastructure, and cultural and contextual factors. Models of care and technologies that work well in urban systems may not be applicable to the rural setting because of variations in health need and service delivery capability. The access to staff, resources, organisational structures, and other restraints are unique to each health setting. Organisations have their own 'uniquely patterned' culture linked to the context and nature of tasks being performed [11]. In rural health settings the governance, management, level of autonomy, models of care, workforce issues (given recruitment/retention difficulties), infrastructure and culture results in heterogeneous organisations that both enable and constrain health care, practice and change in different ways [5].

Innovation to improve health outcomes and that are suited to the rural context are needed. Nurturing organisational cultures that support the adoption of innovative practices,

enable creativity, and seek to achieve performance at a standard to meet the expectations of funders, the community and clinicians is as important in rural health settings as in metropolitan locations. Technological and other innovations have potential to improve health, attract and retain health workers and medical clinicians, and strengthen access in rural and remote locations [2].

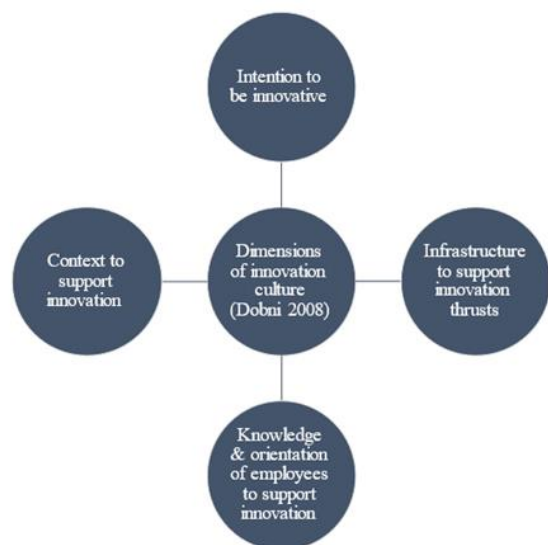
This study contributes to our understanding of how innovation occurs in a rural hospital and the factors that may impede or facilitate the adoption of innovation.

Ethical approvals were granted by the Local Health District Research Ethics Committee (LNR 176/17/NCC/127 & LNR SSA/17/NCC/129) and Queensland University of Technology (1800000117).

METHODS

A detailed inquiry of the rural hospital was conducted using a case study approach [12–14]. Data was obtained from semi-structured interviews conducted in 2018 (see additional file 3 for questions posed). Questions for the interviews were derived from the work of Dobni [15] who identified four dimensions associated with innovation culture and shown in Figure 1.

FIGURE 1 DOBNI'S 2008 DIMENSIONS OF INNOVATION CULTURE [15]



The 32 item COREQ checklist for transparency of qualitative research documented research elements such as study methods, context of the study, findings, analysis and interpretations [16].

SETTING

A base-hospital (Australian hospital serving a large rural area) providing care to over 12,500 in-patients, performing more than 3,000 surgical procedures and treating 24,000 Emergency Department attendances annually. The study site delivers surgery, medicine, paediatrics, anaesthetics, orthopaedic surgery, emergency medicine, intensive care, and obstetrics and gynaecology services.

At the time of the study there were no medical registrars or residents located on wards. Specialist emergency department clinicians supported career and junior medical officers in the Emergency Department. The largest group of clinicians were nurses, and the workforce is ageing. Gaps are filled by locum staff when leave or vacancies occur.

The study hospital was selected for convenience – other hospitals may have been willing to participate but were not approached. The case study organisation offered a comprehensive range of health services typical for a rural hospital of this size.

PARTICIPANTS AND SAMPLING

A purposive sampling technique recruited informants from all disciplines, including executives, administration,

medical, nursing, and allied health clinicians. Individuals were invited to participate in a 30–45-minute interview. The executive team, departmental managers, nurse unit managers were identified for inclusion, risks explained, and all agreed to participate in the study.

DATA ANALYSIS

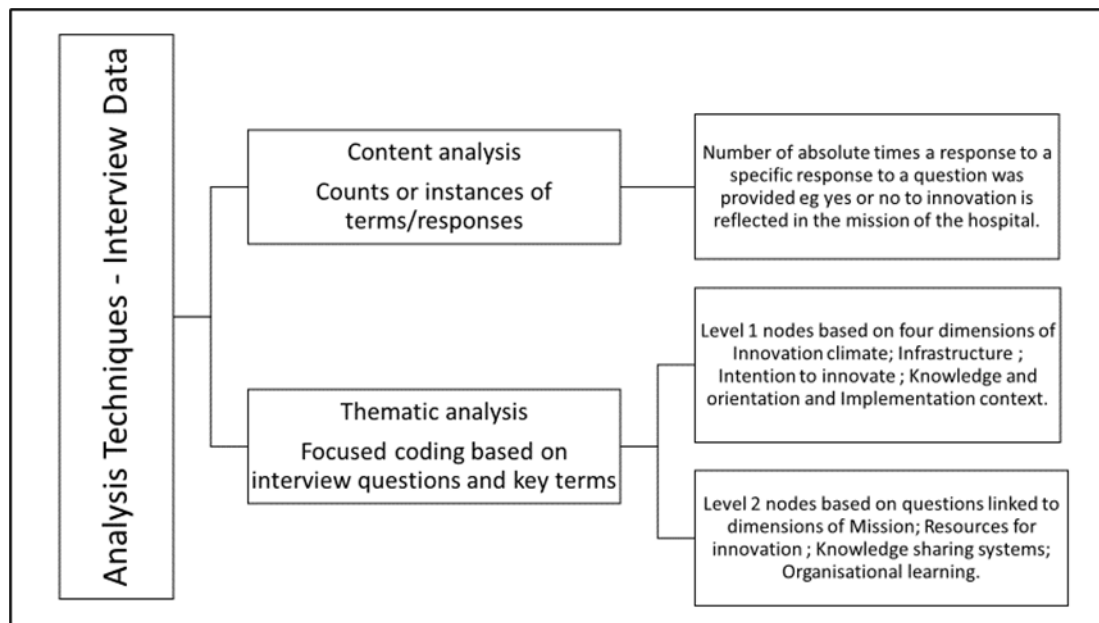
The Framework Method by Gale and colleagues guided the qualitative data management and analysis of the research [17]. Interviews were transcribed verbatim by a skilled transcription service. Transcripts were deidentified, printed, read, and checked by the researcher then uploaded to a computer-assisted qualitative data analysis software package, NVIVO v11. This allowed the researcher to gain a broad understanding of the narrative data collected.

Using NVIVO, each interview was coded at the top node to the constructs of innovation culture: the intention to be innovative (mission and culture), infrastructure to support innovation thrusts (knowledge systems, time and resources for innovation), knowledge and orientation of employees to support innovation (organisational learning, creativity and empowerment, patient value/orientation) and the implementation context to support innovation (ability to change systems/processes and metrics for innovation), as described by Dobni (2008). Further codes were applied and related to the specific questions asked of informants e.g., whether there was a mission for innovation. The approach for coding is shown in Figure 2.

FIGURE 2 NODES AND CODES USED FOR QUALITATIVE ANALYSIS

Level 1 nodes	Context to support innovation	Infrastructure to support innovation	Intention to be innovative	Knowledge and orientation to innovation
Level 2 codes	Ease of modification of systems Metrics to measure innovation effectiveness Quick turnaround of ideas into useable services Contextual factors enablers and barriers Contextual factors other	Time and resources for innovation Knowledge sharing systems in place	Underlying culture directed to innovation Innovative ideas valued Organisational mission reflects innovation Support for new ideas Individuals valued	Expectation to develop skills directed towards innovation Organisational learning linked to overall strategy for improvement and innovation Reward for learning Patient orientation

FIGURE 1 ANALYSIS TECHNIQUES QUALITATIVE DATA COLLECTED DURING INTERVIEWS



RESULTS

Results are divided into three sections: 1. Participant demographics; 2. Innovations identified; and 3. Enabling and limiting factors for innovation by informants in the case study site.

PARTICIPANT DEMOGRAPHICS

Twenty-five interviews were transcribed for analysis. Sample size relative to organisational size and demographic characteristics assured a range of disciplines and diverse perspectives were captured, and to achieve data saturation. Table 1 shows professional backgrounds and management responsibilities of informants.

INNOVATIONS IDENTIFIED

Fourteen innovations were described during interviews. These innovations had been implemented by, or the informant involved with. Eleven innovations (78%) had been sustained since implementation. Innovations were classified by the type of innovation (i.e. product or service, process, organisational, marketing, administrative; [21, 22] and shown in Figure 4 below.

Innovations to services, processes and the adoption of new technologies were documented. Some initiated by the Ministry of Health had been adapted for the case study organisation and implemented with high impact. The *Hospital In The Home* model developed by staff in this

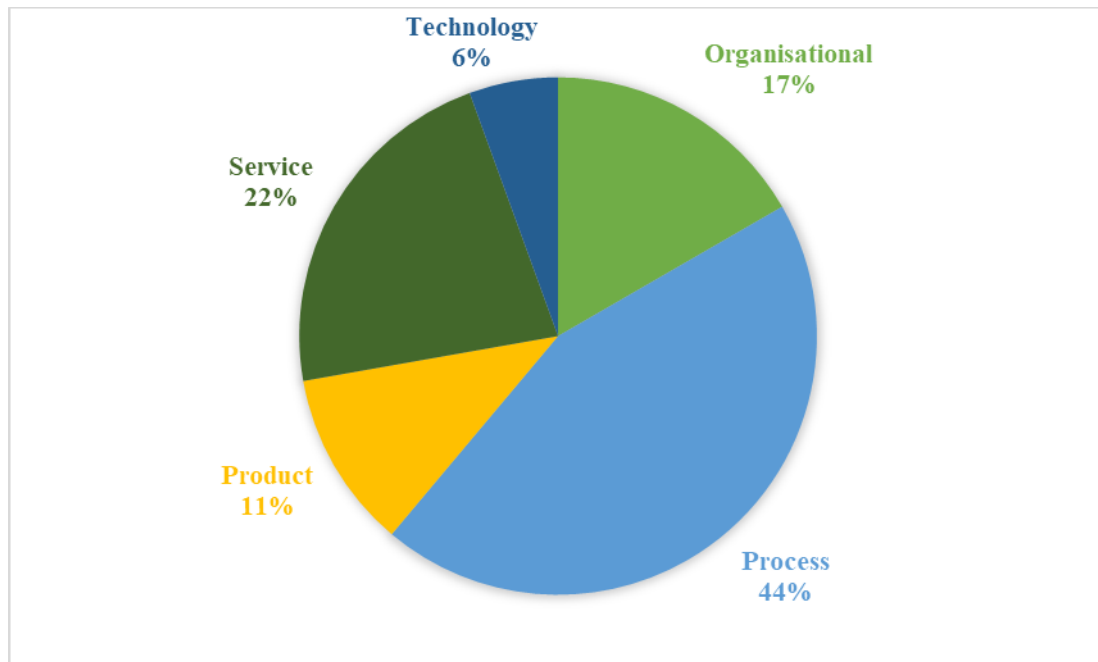
hospital was an example. *Hospital in the Home* was configured as an acute service operating seven days a week and adopted to reduce length of stay and increase bed capacity. Local enhancements were direct interactions and interfacing with nursing homes, surgeons, physicians, and general practices. The hospital-based service is nurse led with a broad scope of practice and requires acute nursing skills and ability to communicate across hospital and community-based teams. The model developed uses a 'pull' strategy to identify suitable patients in acute care wards. The nurse works closely with emergency department clinicians to divert admissions. A simple model of referral and assessment of suitability is used by general practice and for patients in residential aged care facilities. This contrasts with the model for *Hospital in the Home*, based in the community, used in other settings in the Local Health District, a 'push' model receiving referrals from the acute inpatient wards. This community-based service tends to treat less acute patients and does not operate a seven-day-a-week service.

Other innovations were same day knee replacements with 'prehabilitation', introduction of the safety cross system and patient empowerment program. Clinicians who initiated and implemented innovations provided examples of websites, graphic designers, research evaluations of their innovations and printing of materials that they had funded. Development was frequently performed in their own time.

TABLE 1 PROFESSIONAL BACKGROUNDS AND CHARACTERISTICS OF PARTICIPANTS INTERVIEWED

Professional background	No management responsibilities	Management responsibilities	Total (% of participants)
Administration	2 (8%)	1 (4%)	3 (12%)
Medical Officer	5 (20%)	2 (8%)	7 (28%)
Nursing or midwifery	5 (20%)	6 (24%)	11 (44%)
Allied Health professional		4 (16%)	4 (16%)
Total	12 (48%)	13 (52%)	(100%)

FIGURE 4 TYPES OF INNOVATIONS DESCRIBED BY INFORMANTS IN THE CASE STUDY SITE



FACTORS THAT ENABLED AND LIMITED INNOVATION IN THE CASE STUDY SITE

The findings that relate to the four dimensions of innovation culture are explored in turn. Enabling and limiting factors to innovation are presented. Longer example quotes from informants are presented in Table 3.

Intention to be innovative

Enabling Factor: Individuals felt valued within their clinical teams and departments supporting within team innovations

Twenty-two of the twenty-five (22/25) informants felt valued within their clinical teams and departments and by their direct managers. If innovative ideas were able to be implemented within the team, then implementation could proceed with relative ease.

Interviewees were asked whether they believed that innovation was an underlying culture and not a word. The response to this question was mixed. Eight interviewees

clearly stated that they thought it was just a word. Other responses ranged from those who believed that innovation occurred within the organisation but was not deeply entrenched in the culture to those who saw the organisation heading in a direction where innovation was deeply embedded.

Informants who that thought that innovation was just a word felt strongly that innovation could be further embedded in the organisation 'I don't think so, yet. No, hm. I know there's a lot of quality type competitions that are invested in encouraging people to do well and create new things..... I don't know that it's actually the everyday culture, now' (Nurse 5)

Limiting Factor: Organisational mission not linked to innovation nor embedded in culture

The hospital did not have a mission statement that mentioned innovation. When asked to explain how innovation was reflected in the mission of the hospital, most interviewed struggled to recall the hospital's mission

reflected by a medical clinician *'in a proper organisation, every single individual should be able to drop that off their tongue in an instant.'* (Medical 10). Despite this, most felt that there was a culture within the organisation where improvement was valued. Both clinicians and managers conveyed this opinion. Interview participants related that as a base hospital in a rural setting, the key focus was delivering services to the community.

Context to support innovation

Limiting factor: Absence of metrics to evaluate and measure effectiveness of innovation initiatives and difficulty modifying systems and processes quickly

Fourteen of the 25 people interviewed related they were not aware of explicit metrics to measure the effectiveness of innovation initiatives. It was noted that when innovation occurred, key performance indicators could be reviewed pre- and post-implementation. Informally, the Local Health District quality awards recognise quality improvements.

Systems, processes, and models of care could not be easily modified, and it was difficult to make changes quickly and with speed. Funding, staff, and physical space were identified as barriers. The 'system' and the bureaucracy were deterrents to innovation as approval processes could be long and complicated. *'The system itself is actually geared to working slowly. There're many layers within the system and it's sometimes hard to navigate and actually understand how to navigate through those various layers.'* (Allied Health 16) and *'It's quite unusual to be able to do it quickly.'* (Medical 9).

Enabling factor: Clinicians with ideas provided leadership for innovation

Within clinical teams and departments innovations could be made. Successful change was supported and promoted by clinical champions willing to drive the innovation and work around barriers identified and reflected by a medical officer (Participant 7), *'I'm very aware that I'm trying to improve patient care and improve the structures around that and the teamwork and things'* and *'we've built up a lot of trust over the years and they (nursing staff) can see where these ideas are coming from, that it is about improving patient care and they can see it working and feel proud that it's coming from their small department'* and *'there are occasions when something compelling comes along and it's carried across the line by champions. But most of the time when it's funding*

dependent it is an exceedingly slow process' (Medical 9). These individuals know the channels to gain support for their ideas and how to advance them at organisational, district and State Executive levels.

Limiting factor: Infrastructure to support innovation

Eight interviewees mentioned time for creativity was a limiting factor as clinical work takes priority. There was no allocated time or budget for innovation. *'I would say funding. I'd say that would be one of the challenges. Probably time. Timeframes. Maybe even actual space'* (Nurse 18). High clinical workloads in rural health settings impact time for non-clinical activities. *'Workload is the biggest hindrance to change. They (clinicians) just haven't got time to think about it and implement it and do it on a consistent basis'* (Medical 28). Without time for reflection and thinking the opportunities for generating new ideas, gaining support, and implementing innovation was constrained.

Limiting Factor: Knowledge and orientation of employees to support innovation

Knowledge sharing was a source of frustration and challenge. Clinicians expressed that information overload and the lack of a single source of accessible truth for policies, procedures, and evidence for best practice a barrier to knowledge acquisition *'Yeah, that's right. You sort of get – but you get policy overload and policy fatigue, because every week you're getting new ones coming out'* (Allied Health 20) and *'they're wordy and bureaucratic. No one reads protocols at the moment, they're absolutely ridiculous. The current method for disseminating new knowledge is just hopeless'* (Medical 7).

Fewer than half (9 of the 25 informants) conveyed that the organisation connected learning approaches with improvement. The remainder stated that the connection between learning and identified areas for improvement, innovation and learning was not clear. Continual learning was supported but focussed on mandatory training. Medical clinicians conveyed that ongoing education was included in their employment contract providing sufficient opportunities. Nursing, allied health and other disciplines attended mandatory training or training offered within NSW health. Informants were motivated to learn by personal satisfaction and requirements to assure ongoing professional development. *'I wouldn't say it's rewarded. I think for yourself internally you feel rewarded'*. (Nurse 25)

The ability to attend training that might be directed towards innovation or change management skills was not readily accessible. Within this hospital, there was no overall learning strategy towards change and improvement or an innovation agenda.

Informants conveyed that a focus on patients, families and carers was important. Some believed that this focus was front and centre of patient management and planning considerations, while others felt that this was an area where more emphasis could be placed.

DISCUSSION

Innovation was driven by clinicians' motivated to provide better care and adopted despite the absence of antecedents for innovation as described in the theory (e.g. leadership for innovation, mission and vision for innovation, infrastructure for innovation) [15, 23].

Organisations will adopt innovations more readily if they are large (in size), are functionally differentiated into small autonomous departments, reflect maturity and have high-quality data systems, strong leadership with a clear vision towards innovation, resources to channel into innovation and decentralised decision-making processes [9, 23]. Seminal work by Greenhalgh and colleagues [9, 23] produced a framework on the antecedents for innovation collated from the literature, drawing on an extensive body of research. Organisational and contextual factors that have a positive and significant impact upon innovation adoption and sustainability include administrative overheads, functional differentiation, managerial attitudes to change, professional knowledge of employees, 'slack resources' (resources beyond minimal requirements to maintain operations), specialisation and technical capacity (technical resources and potential) (Damanpour, 1991, as cited in [9, 23].

Innovation in the rural hospital studied occurred without many of these identified factors. The hospital studied was small (not large), suggesting that size was not a barrier to innovation in this rural site. There was little specialised differentiation or departmentalisation. Nursing and medical clinicians often have both clinical and managerial responsibilities and there is no 'slack' in resourcing of administrative or clinical staff.

Ideas originating from clinical needs and led by champions in rural health settings are crucial to drive change, innovation adoption. The vision of leaders, strong managerial relations, clear goals and priorities, high-quality knowledge systems, organisational culture and context for change are important determinants of innovation [9, 15, 23–25].

Innovative ideas were valued in the case study site innovation could be advanced by strengthening organisational signals that demonstrate an intention to be innovative. Examples include a mission and culture to support innovation and metrics to measure innovation success [15, 26]. Small injections of money and time to support clinicians with innovative ideas could be allocated [9]. Time for thinking and reflection is important, and relief from clinical roles could be rewarded by the outcomes achieved through new innovations.

Contextual factors impacted the ability of individuals with innovative ideas to progress them to implementation. Modification of systems or work practices beyond the team were identified as difficult and a barrier to innovation. Top-down bureaucratic structures can be an impediment to innovation that thrives in flatter organisational structures [27]. Leaders play an important role by assisting clinicians to navigate the bureaucratic processes that hinder or slow down innovation and assist with innovative ideas progressing to delivery.

The knowledge and orientation of employees to support innovation is a cultural and system antecedent for innovation [9, 15, 23]. The lack of a comprehensive strategy that equips staff with the skills, knowledge, and tools for innovation was noted. Knowledge management and communication systems were regarded poorly, and informants conveyed that identifying relevant policies and being able to access them when and where they needed them in a timely fashion was challenging. Effective knowledge management systems could enable further innovation and the more rapid adoption of evidence-based medicine practices.

Clinical champions were an enabling factor as innovation occurred in addition to busy clinical loads and routine work. Time out from clinical activities is rare and can require the recruitment of a locum. Time for innovative thinking and creative thinking is a requirement for innovation [27]. Heterogenous or changing environments are more likely to

promote the adoption of innovations [9, 28]. Diversity can be difficult to attain in rural health settings where the workforce is stable over time, increasing diversity could unlock additional innovation.

The enablers in the case study organisation and those identified in the literature as antecedents to innovation uptake and adoption are presented in Figure 5. This diagram demonstrates leverage points for further innovation in the rural health service studied. Strengthening knowledge management systems, introducing metrics for innovation, a mission and vision directed to innovation, rewarding innovation, and linking this to an overall strategy for improvement could advance further innovation. Providing small amounts of time for thinking and resources to enable clinicians to innovate could encourage further innovation in the hospital studied. This would enable innovators time for innovation-related activities, such as research, planning and generating ideas. Health service leaders can play a vital role in supporting clinicians to work through bureaucratic channels, freeing them to focus on what is important to them when innovating.

CONCLUSION

This case study allowed an in-depth analysis of a rural health setting and an understanding how innovation is enabled. This analysis has contributed to the body of knowledge in rural health service management research. The research determined that innovation occurred in this rural site under unique contextual and organisational factors. The antecedents and determinants of innovation identified in the literature will not usually be present in rural settings such as size, complexity, administrative intensity, and 'slack' resources' [9]. We know that innovation occurs in rural health services, often through necessity and the lack of human, financial and physical resources present in larger settings. Clinicians in this study were driven to find solutions to improve patient care or hospital processes. Innovators pursued their innovations without specific time or resource allocations and drove their ideas to achieve changes. What is promising is that by leveraging known factors that promote innovation, that innovation in rural settings could be further accelerated.

STRENGTHS

Situated in a rural health service and conducted by a rural researcher the case study technique has provided valuable insights into the enabling and limiting factors for innovation in a rural health setting.

LIMITATIONS

The views captured reflect the specific time and place when the study was conducted and the individuals who contributed to the study could have influenced the results and findings. Limitations identified were:

- Age and demographic factors of the informants interviewed may not be represented in other rural settings.
- The lead investigator was known to some of the participants from a past role working in the site and this might have introduced bias.
- Staff from all clinical and administrative departments were interviewed however the findings could be limited by personal opinions, experience, academic backgrounds, personality, and individual perceptions.

While this study found that a rural hospital can innovate, the enablers and limiting factors identified, may not be generalisable to all rural health settings.

OPPORTUNITIES FOR FUTURE RESEARCH

To validate the findings, the research methodologies could be refined, and the study repeated and determine whether the factors identified in this study are evident in other rural hospitals.

COMPETING INTERESTS

None declared.

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Hospital informants and Research Staff, Northern NSW Local Health District.

CONTRIBUTIONS

SL conceptualised and designed the study. SL analysed and interpreted the data.

SL, CC GF critically reviewed and contributed to the manuscript. All authors read and approved the final manuscript.

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TABLE 2 SUMMARY OF INNOVATION ENABLING AND LIMITING FACTORS BY DIMENSION

Participant	Discipline	Innovation dimension	Enabling or limiting	Factors identified in thematic analysis	Exemplar quotes
3	Nurse	Intention to be innovative	Enabling	Individuals felt valued within their clinical teams and within team innovations can be made	Okay, colleagues yes, definitely think (I am) valued by colleagues. Expertise, knowledge, professionalism, ability to get things moving, all those things, definitely by colleagues. Higher up in management, don't know, minimal feedback from that.
7	Medical			Improvements and ideas able to be implemented	I'm lucky in my small department. Because it's just me and a couple of nurses, we rely on each other and we've built up a lot of trust over the years and they can see where these ideas are coming from, that it is about improving patient care and they can see it working and feel proud that it's coming from their small department. Then they enjoy seeing it go further and the successes that it's had.
18	Nurse			But I think you can do it quickly. I do think it can be done but there's a lot of people that need to be involved in small change.	
2	Administration		Limiting	Organisational mission not linked to innovation nor embedded in culture	I wouldn't say it's an underlying culture. There's quite a few departments and individuals that do think innovatively, but it wouldn't be a big part of the culture, but definitely not just a word. I believe that most people that I work with anyway understand what it means to be innovative and can think innovatively but whether or not they can put it into practice within this organisation is probably the real question, yeah.

Participant	Discipline	Innovation dimension	Enabling or limiting	Factors identified in thematic analysis	Exemplar quotes
5	Nurse manager				Although, we recognise that (innovation) and we see that, I don't know that it's actually the everyday culture, now. It's trying to be, but I don't know that it actually is yet, in certain fields and certain teams, but not everywhere I don't think
17	Executive				Innovation per se has not been a focus for us, and we have mostly seen ourselves as a service delivery organisation. If you want to make innovation a bigger part of our portfolio, I think we need to articulate that in our mission statement. We need to articulate that and explicitly within our core values that we foster and encourage and look forward to innovation or we see ourselves as an innovative organisation. I think compared to some of the larger, say, teaching hospitals, where innovation is an embedded part of what they do – that's partly because they have a large number of teachers, trainees, academic staff, professors with university appointments, which is a very different workforce profile from the one that we have. We pursue innovation not as an end in itself, but as a consequence of seeking excellence in service delivery, but to take it one notch higher, we will need to explicitly articulate that.
11	Medical	Context to support innovation	Enabling	Clinicians with ideas provided leadership for innovation	Yes, we can, I suppose that's the key thing, is that it's a small hospital with a close-knit regular team of doctors, nurses, allied health. So, if we want to change something, it usually doesn't involve too many people. We can talk through what we might

Participant	Discipline	Innovation dimension	Enabling or limiting	Factors identified in thematic analysis	Exemplar quotes
					do differently and then basically do it, if we agree that that's sensible.
15	Allied health				I think we were very fortunate, the usual manager for our department is extremely motivated, energetic and sees the clinical value in a lot of these things and puts them in place. So, I think that's why our department, in particular, is quite progressive. I guess that energy and change invigorates a lot of the staff.
23	Nurse		Limiting	Difficulty in modifying systems and processes quickly Number of points of consultation and bureaucratic processes	I wanted to put together a package to be able to improve our cardiac services in the hospital, but the problem was it needed to be talked to on so many different levels that I couldn't get anyone to actually come along with me on the bandwagon to make the change. I got really, really frustrated.
20	Allied health				Something was sent to me by my manager to send to PM who is the LHD safety and quality manager, to get it put up online. Even at that level, and this is Executive A and Executive B, so Executive A who – I'm sure you're familiar with – they both had different ideas about who needed to do the approving to get something put up online. It was a very frustrating thing to realise – but then at the same time they don't seem to see a problem with the way it's set up.
22	Nurse		Limiting	Absence of metrics to evaluate and measure effectiveness of innovation initiatives	That's just monitored by the quality committee – quality risk management committee – but we don't go that next stage in measuring the effectiveness. We know that the project's there. It's been done and there's not a lot of focus on outcomes and

Participant	Discipline	Innovation dimension	Enabling or limiting	Factors identified in thematic analysis	Exemplar quotes
					transferability– that wow, this is really good, let's see if another ward can do it, or something like that.
18	Nurse		Limiting	Knowledge management systems Volumes of communication and information	The way I see it's filtered down is through we have like a newsletter that goes around the hospital staff. We have emails. There's often flyers printed around. If there's a new policy or procedure they'll be education offered. How else do we do it? Newsletter. Team meeting. Staff meetings. Things like that. I do feel like it could be improved upon. I don't know how. I think there's still massive gaps on information sharing. And actually, getting down to the staff on the ground. Like the nurses on the floor. On the night duty.
7	Medical				That's right. The protocols themselves are 20 pages long and the first 10 pages is the history of the development of the protocol and the revision date and who to contact and who signed this off and da-da-da. They're wordy and bureaucratic. No one reads protocols at the moment, they're absolutely ridiculous. The current method for disseminating new knowledge is just hopeless. It's designed by managers for managers to say yes, we sent this protocol out, you should be using this drug in this way because there's a new protocol, and it's, really?
24	Executive	Infrastructure to support innovation	Limiting	Resource constraints and budget to support innovation	That becomes, ooh, very difficult. There is no specific budget that is allocated for innovation. Budgets tend to be allocated on actual clinical needs at this point and requirements to make the system function. There isn't capacity at this stage, at a local level, to identify

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				Time available for innovative thinking and planning	specific amounts of money within our – but in saying that, if there's small things, we can usually find some scope, that some funds could be allocated, but it's only on a very small scale. Nothing on a larger scale.
15	Allied Health				We can, I guess, for minor innovation. It's very much department and personnel driven a lot of the time. I think our department has done that quite a lot and worked very well. There isn't, I guess, a lot of organisational support in terms of getting extra funding or staffing is the big issue. We feel for our clinical load we're already under-staffed and then we're trying to add extra services.
24	Executive				New services ... have to go through an approval process from the district with the Director of Clinical Operations. So, any new services would need to have briefs prepared, sent to the district for consideration with full costings. The likelihood of any new services commencing that will cost the district, is unlikely to get approval at this time.
17	Executive	Knowledge and orientation of employees to support innovation	Enabling	Agencies such as the CEC and ACI provided expertise in innovation and clinical standards	What we've tried to do over the last few years is engage not only internally but also with external organisations that can help drive change and improvement and bring about an environment conducive to creativity. As examples, I will cite the very involved engagement that we've had with the Agency for Clinical Innovation, and we've had a number of ACI-driven projects that are running here locally, and that's helped us improve, innovate, change, by using the agency as an external change

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					mediator, which was ACI in this case. Equally, we've also worked with the Clinical Excellence Commission where we've been able to leverage some of their exceptionally good products and innovations and implement them within the organisation.
28	Medical				But having said that, it's remarkable what changes have occurred in this hospital, and I think having the students here has been a positive for that. The input of places like the CEC and the ACI has helped run change and they've put up – they've developed pathways which can be sort of stamped universally. A good example of that is the orthogeriatric model that the ACI and CEC both put up and which we've attempted to implement here. It's still not implemented as well as it should be because we don't have the resources. We're still very much starved compared to larger places. There's no registrars, there's no residents [unclear] but the role has been ill defined. Management doesn't seem to have the resources and the capacity to do that
23	Nurse		Limiting	Outside of mandatory training learning for improvement is largely self-funded Connection between identified areas for improvement/innovation	No. No I don't. I think the learning and development – okay, so let me answer that one. So, with the learning in ED it's specifically for ED, so we do advance our skills in that area and A does target our education so that we are continuously at a high standard of practice, but it's in a high acuity area and you need to be. But I, yeah, I don't feel that – how can I put that? I don't really feel, with a lot of the

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				and learning opportunities provided was not clear	education, as I said, I just don't feel that nurses have anywhere to go with it.
7	Medical Clinician				No, I don't think the organisation is trying to get you to be innovative or develop new skills or anything, quite the opposite. The training is all based on established credentialled courses, the nurses do their FLECC, you go and do your EMST, which has been the same for 30 years. They're not innovative courses, they're quite the opposite. The organisation is lagging on that; the people themselves see the value and are queueing up for innovative courses and telling their friends and doing these things in their spare time.
18	Nurse				Sometimes I feel like the education department is just there to sort of tick a box. It's not necessarily innovative. I think it could be improved upon. Yeah. I think actually having educators – because I know that they're on the ward. But a lot of the time I think patient load or something? I don't think they're actually like going around to the bedside with the nurse and checking what they're doing. I do think that yeah – I do think the education department could be improved.
5	Nurse				I wouldn't say it's rewarded. I think for yourself internally you feel rewarded. I feel like especially from being in an acting role for a long time to then actually feel like you have a valid opinion or a response because of what you know. It's a bit of a confidence booster when you go into a meeting, and you actually have half an idea of what you're

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					<p>talking about. I don't think it's – I think it's not rewarding here either because there's no one else seems to be on the same page. I think if you worked in a culture or an environment that everybody had the same ideas.</p>

FIGURE 2 LEVERAGE POINTS FOR FURTHER INNOVATION

