

# Impact of the COVID-19 pandemic on medical student placements in rural Queensland: A survey study

Priya Martin PhD  | Matthew McGrail PhD  | Jordan Fox PhD |  
Riitta Partanen FRACGP | Srinivas Kondalsamy-Chennakesavan MPH

Rural Clinical School, Faculty of Medicine, The University of Queensland, Toowoomba, Queensland, Australia

## Correspondence

Priya Martin, Rural Clinical School, Faculty of Medicine, The University of Queensland, Locked Bag 9009, Toowoomba, QLD 4350, Australia.  
Email: [priya.martin@uq.edu.au](mailto:priya.martin@uq.edu.au)

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## Abstract

**Objective:** The COVID-19 pandemic has adversely impacted medical students' learning experiences. Students in one Australian Rural Clinical School were surveyed to investigate the impact of disruptions to clinical placements and satisfaction with educational changes implemented as a result of the pandemic.

**Design:** Cross-sectional survey.

**Setting:** The University of Queensland Rural Clinical School.

**Methods:** Students undertaking one or two years of study at the participating Rural Clinical School in November 2020.

**Main outcome measure:** A 20-item anonymised survey with questions on personal health and safety, quality of clinical training experience, response to changes in learning and student environment, and progression to completion of the medical degree.

**Results:** The survey was completed by 124 students (76% response rate). Students were satisfied with the changes made to their learning to accommodate the disruptions to health service delivery and placements. Final year students were more satisfied with their learning experiences compared to their third-year counterparts.

**Conclusions:** The Rural Clinical School implemented a range of academic and psychological support strategies which appear to have helped with mitigating mental health concerns experienced by students completing rural placements, who are already prone to experiencing social isolation. Strengthening communication between the academic and health service sectors can improve the quality of learning for medical students on placements.

## KEYWORDS

clinical placements, COVID-19, medical education, rural health

[Correction added on 10 May 2022, after first online publication: CAUL funding statement has been added.]

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## 1 | INTRODUCTION

Maldistribution of the medical workforce is a well-acknowledged global challenge, which puts rural areas at a disadvantage. In addressing this, the Australian Government funds the Rural Health Multidisciplinary Training (RHMT) programme which supports 19 Universities to offer medical training in rural areas through Rural Clinical Schools (RCSs). The underlying assumption is that those trained rurally will remain and serve those areas.<sup>1</sup> A collaborative study of outcomes from 12 universities found that the RCS initiative under the RHMT programme was having a significant positive effect on Australia's rural medical workforce at 5 years after graduation.<sup>2</sup> After accounting for rural background, students participating in RCS training of at least 12 months are 1.5 times more likely to be working in rural practice.<sup>2</sup> Similar effect sizes are observed in other studies.<sup>3,4</sup> Thus, it is vital to sustain the RCS placements through the current COVID-19 pandemic, to continue supplying medical practitioners to rural Australia.

Globally, medical schools and universities have not been immune to the impact of the COVID-19 pandemic from February to March 2020. Reports are emerging of the nature and extent of disruption caused by the pandemic on medical student clinical placements, impacting learning and inducing mental health concerns. A United Kingdom survey of 440 students from 33 medical schools showed a significant impact of the pandemic on medical student education, particularly affecting the transition from student to doctor. This study showed that the disruptions to clinical placements adversely impacted students' confidence and preparedness.<sup>5</sup> A similar level of disruption to medical education was found in a United States survey of 741 medical students.<sup>6</sup> This study showed that almost 94% of students were removed from clinical placements with in-person patient contact at the time of the study. A high proportion of students (84.1%) in this study reported that the pandemic had moderate effects on their stress and anxiety.<sup>6</sup> This is similar to an Australian study of almost 300 students which identified a pandemic-induced deterioration of mental health in 68% of medical students surveyed using the Kessler-10 questionnaire.<sup>7</sup>

Many universities have ramped up online teaching and supervision to cater to the physical distancing and quarantine requirements induced by the COVID-19 pandemic, as evidenced through a recent systematic review.<sup>8</sup> This transition was not unique to medicine but was widely experienced because of the normally high volume of training occurring in clinical settings. While this transition has been a blessing in many ways, such as enabling continuation of training, it also has some

### What is already known on the subject:

- The COVID-19 pandemic has caused widespread disruption to medical students' learning and mental health and well-being
- Disruptions to clinical placements have caused perceived reduction in self-confidence and work preparedness
- Rural clinical schools in Australia are pivotal in facilitating student placements outside bigger metropolitan centres, thereby enhancing medical workforce recruitment and retention in rural areas

### What this study adds:

- Students have indicated a high level of satisfaction with changes made to clinical placements including transition to online learning and supervision
- Health services and universities need to match expectations about student placements to enhance students' learning and experiences
- Students in their penultimate or earlier years of study may benefit from additional support during times of change

pitfalls including reduced collaborative learning, feelings of distress for tutors associated with diminished feedback when students' cameras are switched off, and challenges in building rapport with patients during clinical encounters.<sup>8,9</sup> A Libyan study that investigated over 3000 medical students' experiences of the pandemic found that students paid less attention during online lectures.<sup>10</sup> Issues of Zoom burnout and Zoom fatigue have also been recently raised, caused by the need for attentiveness to nonverbal cues and the constant awareness of what a person is doing while the Zoom camera is on.<sup>11</sup> The systematic review of 10 studies on medical student support systems during the COVID-19 pandemic emphasised the importance of a safe learning environment online, as well as the need for educational institutions to conduct precise evaluation of the changes made in response to the pandemic, as opposed to merely describing the positive effects of the changed programmes.<sup>8</sup>

Literature on the impact of the COVID-19 pandemic on rural medical student placements appears to be scarce. An Australian study of this nature among 1505 allied health, nursing and midwifery students, conducted by most University Departments of Rural Health (UDRHs), found that 60% of placements (between February and October 2020) were impacted by the pandemic.<sup>12</sup> Eighty-four percent of students

reported satisfaction with a UDRH placement, despite the changes made or perceived impact. Students on rural and remote placements were affected by restrictions that prevented them from moving around the rural/remote area, feeling alone in student accommodation, and experiencing restricted duties and activities on placements.<sup>12</sup> There remains a need to investigate the impact of the pandemic on medical student placements in rural areas and how students responded to resulting changes made to learning structures and processes. This study was undertaken in one RCS to meet this objective so that transition support strategies can be planned for penultimate and final year students as well as recommendations developed for dealing with similar events in the future.

## 2 | METHODS

### 2.1 | Participants

Study participants were students in the third (penultimate) or fourth (final) year of their medical degree in one university in Queensland, Australia. This cohort of students were spending either their first or second year of medical training in that community, which was one of four regional sites of the participating RCS. The RCS year/s provide students with experience in living and studying in a rural area (i.e. outside a big metropolitan centre). They undertake clinical placements at nearby health services as well as attend lectures and tutorials in these sites, with their placement year beginning mid-January and ending in November. There were some differences in the way that clinical placements changed over the study period in this RCS programme and between student cohorts, which are summarised in [Box 1](#).

### 2.2 | Materials and procedure

An anonymous, paper-based survey was completed by consenting students in November 2020. A 20-item questionnaire was designed, consisting of multiple choice and Likert response scale questions (ranging from three to nine points), with the option for participants to include further free-text comments throughout the survey. The categories of questions related to personal health and safety, quality of clinical training experience, response to changes in learning and student environment, and progression to completion of the medical degree. The survey was developed during the initial peak of the COVID-19 pandemic (April 2020) and was piloted with internal team members with expertise in medical education and survey design. Students completing this survey were asked to reflect on their experience since the pandemic began. Study participation was voluntary.

#### **BOX 1 Summary of changes to clinical placements in the participating RCS between March and November 2020**

##### **Year 3 students**

March–June 2020: All clinical placements stopped with learning transitioned to online methods; many students did not remain at their RCS site.

July–November 2020: Clinical placements resumed; students who left the rural site now returned; some remaining uncertainty between the university and health service expectations around which placements were allowed.

##### **Year 4 students**

March–June 2020: Students remained at their RCS site; most clinical placements were allowed to continue by the university, although there were restrictions on student attendance imposed by placement sites and some variations to standard practices. This included some clinical placements not accepting students due to concerns regarding the risk of COVID-19 infections for both students and patients.

July–November 2020: Clinical placements were predominantly ‘as usual’.

### 2.3 | Data analysis

Quantitative data were entered in SPSS V27, cleaned and coded. These data were summarised using descriptive statistics of counts and proportions. Inferential analyses consisted of Wilcoxon Signed-Rank and chi-square tests, to examine differences between the third- and fourth-year student responses. Free-text comments were analysed by two members of the authorship team (PM and SKC) through a summative content analysis approach involving counting and comparisons of keywords and content, interpretation of the underlying context and development of categories for reporting. Agreement on categories was reached through mutual discussions between the two authors involved<sup>13</sup>

## 3 | RESULTS

The survey was completed by 124 out of 164 students, achieving a response rate of 76%. Of this, 46% ( $n = 57$ ) were in their third year and 54% ( $n = 67$ ) in their fourth

TABLE 1 Responses to survey questions

Theme	Survey question	No (N [%])	Yes (N [%])		
SH	Felt safe during the COVID-19 peak <sup>a</sup>	11 (8.9)	109 (88.6)		
	Increased mental health challenges	58 (46.8)	66 (53.2)		
	Isolation from family or other existing social support	35 (28.7)	87 (71.3)		
	Unexpected financial impacts <sup>a</sup>	96 (78.7)	24 (19.7)		
	Unexpected parenting or carer responsibilities	115 (94.3)	7 (5.7)		
S	Negative affect on social cohesion <sup>a</sup>	21 (18.6)	92 (76.7)		
	Negative affect on academic support between students <sup>a</sup>	50 (40.7)	60 (48.8)		
TQ	COVID affected the quality of clinical supervision	31 (25.0)	93 (75.0)		
	Clinical training moved to a remote supervision model	33 (26.6)	91 (73.3)		
P	Less well prepared for internship because of COVID-19 <sup>a</sup>	56 (45.9)	37 (30.3)		
	Less prepared for future placements because of COVID-19 (Y3) <sup>a</sup>	22 (39.3)	20 (35.7)		
		<b>Disagree</b>	<b>Agree</b>		
TQ	Concerned about missed clinical procedures/experiences <sup>a</sup>	49 (39.5)	70 (56.4)		
P	Concerned training gaps will misrepresent abilities <sup>a</sup>	62 (50)	55 (44.4)		
	Difficult to catch-up from missed clinical experiences <sup>a</sup>	67 (54.1)	33 (26.6)		
	Detrimental impact of COVID-19 on exam performance <sup>a</sup>	57 (47.1)	46 (38.0)		
		<b>Response</b>	<b>Frequency</b>		
TQ	Effect of travel restrictions on clinical placements/electives	No effect	35 (28.9)		
		Minor effect	25 (20.7)		
		Moderate effect	22 (18.2)		
		Large effect	19 (15.7)		
		Very large effect	20 (16.5)		
P	Concerned about the impact of COVID-19 on career prospects <sup>a</sup>	Not at all	37 (31.6)		
		Not really	49 (41.9)		
		A little	24 (20.5)		
		Very much	5 (4.3)		
	Has COVID-19 made you question continuing your medical studies? (Y3)	Not at all	23 (41.1)		
		Not really	19 (33.9)		
		A little	13 (23.2)		
		Very much	1 (1.8)		
				<b>Neither well nor poorly</b>	<b>Well supported</b>
		S	University support during the peak of the pandemic:		
Regular communication	Poorly supported 24 (19.5)		34 (27.6)	65 (52.9)	
Alternative placements <sup>a</sup>	17 (13.8)		28 (22.8)	66 (53.6)	
Online learning/teaching <sup>a</sup>	12 (9.9)		26 (21.5)	82 (67.7)	
Financial support <sup>a</sup>	14 (11.5)		41 (33.6)	57 (46.7)	
Support from local RCS professional staff <sup>a</sup>	4 (3.2)		5 (4.1)	111 (90.2)	
Support from local RCS academic staff <sup>a</sup>	2(1.6)	8 (6.6)	109 (89.3)		

(Continues)

TABLE 1 (Continued)

		Negative	Neither positive nor negative	Positive
TQ	COVID-19 effect on the quality of learning	96 (78.0)	19 (15.4)	8 (6.5)
		Decreased	Did not change	Increased
P	Changes to confidence in future placement performance (Y3)	25 (45.5)	27 (49.1)	3 (5.5)

Abbreviations: P, Progression; RCS, Rural Clinical Schools; S, Support; SH, Safety and Health; TQ, Training quality; Y3, Third-year students only.

<sup>a</sup>'Can't answer', 'Don't know' or 'Not Applicable' responses have been omitted from the Table and response rates therefore do not equal 100%

year. One participant reported to have been COVID-19 positive in 2020. Sixteen percent of fourth-year students had volunteered to play a role in active screening and testing of COVID-19 patients, although not all were utilised. A majority of students (89%) reported feeling always safe in their clinical training during the peak pandemic period in Queensland (predominantly March to June 2020). Seventy-one percent of the participants experienced isolation from family and supports, and 53% reported increased mental health challenges. Many participants (77%) believed that the COVID-19 pandemic disrupted their cohort's social cohesion, with 49% reporting that the pandemic negatively affected their ability to support each other academically (Table 1).

A vast majority (78%) of students felt that the pandemic negatively affected the quality of their learning, with 75% reporting that it affected their clinical supervision quality. Seventy-three percent of students surveyed reported transition of their clinical training to a remote supervision model. Fifty-six percent expressed concerns about missing out on specific clinical procedures and experiences. Thirty-eight percent of respondents believed that the pandemic was detrimental on their performance at exams. Only 10% of participants reported being exposed to an increased breadth of cases, whereas 57% experienced a new model of care while on placement.

Participants were asked about the changes made to their placements and learning structures in 2020 in response to the pandemic. Forty-nine percent were satisfied with the shortened placements and catch-up approaches used (third-year students only) and similarly almost half (49%) felt well supported with alternative arrangements to cancelled placements (fourth-year students only). Regular communications from the university pertaining to the pandemic were satisfactory to over half (53%) of the survey respondents. Students reported some changes to their specialty interest owing to the pandemic. Interests had a net increase of 18% in emergency medicine and 3% in general practice. A majority of participants (73%) remained unconcerned about their career prospects given the impact of the pandemic on their studies.

Tests comparing the experience of third-year and fourth-year students' survey responses revealed many differences (Table 2). Third-year students were more concerned than their fourth-year counterparts about the negative impact of the pandemic on the quality of their learning ( $p = 0.023$ ), with more of them reporting impact on their clinical supervision quality ( $p = 0.001$ ). Transition of clinical training to remote supervision formats was reported more often by third-year students ( $p < 0.001$ ) as well as third-year students being more concerned about having missed specific clinical procedures/experiences ( $p = 0.021$ ). More third-year students reported that the pandemic negatively affected their cohort's ability to support each other academically than their fourth-year counterparts ( $p = 0.022$ ). Fourth-year students felt better supported with their online learning/teaching than their third-year counterparts ( $p = 0.009$ ) and were more satisfied with changes to case-based learning requirements ( $p = 0.010$ ). Fourth-year students reported that travel restrictions due to COVID more strongly impacted their clinical placements/electives than third-year students ( $p = 0.001$ ).

Content analysis of the free-text comments resulted in the development of four categories: mental health concerns, impact on learning, communication and changes, and mismatch between the university and health service staff expectations.

### 3.1 | Mental health concerns

Students reported several mental health concerns such as anxiety, stress, loneliness and uncertainty induced by the pandemic. One student simply said that the pandemic was 'bad for mental health'. One student highlighted that moving to a rural location for a year or two, away from family and social supports, is already stressful even without considering the pandemic. They said:

Being rural affected family and social support already so COVID wasn't too much of an issue

TABLE 2 Comparisons between third-year and fourth-year students' responses

Theme	Survey question	Y3 who answered yes (N [%])	Y4 who answered yes (N [%])	Statistical significance		
SH	Felt safe during the COVID-19 peak	53 (93)	56 (84.8)	$p = 0.063$		
	Increased mental health challenges	32 (56.1)	34 (50.7)	$p = 0.591$		
	Isolation from family or other existing social support	40 (72.7)	47 (70.1)	$p = 0.842$		
	Unexpected financial impacts	8 (14.5)	16 (23.9)	$p = 0.254$		
	Unexpected parenting or carer responsibilities	3 (5.5)	4 (6.0)	$p = 1.00$		
S	Negative effect on social cohesion	42 (75.0)	50 (78.1)	$p = 1.00$		
	Negative effect on academic support between students	33 (58.9)	27 (40.3)	$p = 0.022$		
TQ	COVID affected the quality of clinical supervision	48 (84.2)	45 (67.2)	$p = 0.001$		
	Clinical training moved to a remote supervision model	49 (86.0)	42 (62.7)	$p < 0.001$		
P	Less well prepared for internship because of COVID-19	18 (32.1)	19 (28.8)	$p = 0.166$		
		Y3 who agreed	Y4 who agreed	Significance		
TQ	Concerned about missed clinical procedures/experiences	36 (63.2)	34 (50.8)	$p = 0.021$		
P	Concerned training gaps will misrepresent abilities	29 (50.9)	26 (38.8)	$p = 0.241$		
	Difficult to catch-up from missed clinical experiences	20 (35.1)	13 (19.4)	$p = 0.206$		
	Detrimental impact of COVID-19 on exam performance	25 (44.6)	21 (32.3)	$p = 0.333$		
		Response	Year 3	Year 4	Significance	
TQ	Effect of travel restrictions on clinical placements/electives	No effect	23 (41.8)	12 (18.2)	$p = 0.001$	
		Minor	10 (18.2)	15 (22.7)		
		Moderate	13 (23.6)	9 (13.6)		
		Large	6 (10.9)	13 (19.7)		
		Very large	3 (5.5)	17 (25.8)		
P	Concerned about the impact of COVID-19 on career prospects	Not at all	20 (35.7)	17 (27.9)	$p = 0.384$	
		Not really	21 (37.5)	28 (45.9)		
		A little	12 (21.4)	12 (19.7)		
		Very much	3 (5.4)	2 (3.3)		
		Response	Year 3	Year 4	Significance	
S	Regular communication	Poorly supported	13 (23.2)	11 (16.0)	$p = 0.871$	
		Neither	15 (26.8)	19 (28.4)		
		Well supported	28 (50)	37 (55.2)		
	Alternative placements	Poorly supported	11 (19.7)	6 (9.0)		$p = 0.159$
		Neither	17 (30.4)	11 (16.4)		
		Well supported	26 (46.4)	40 (59.7)		

TABLE 2 (Continued)

University support during the pandemic:	Response	Year 3	Year 4	Significance
Online learning/teaching	Poorly supported	10 (17.9)	2 (3.0)	<b><i>p</i> = 0.009</b>
	Neither	15 (26.8)	11 (16.9)	
	Well supported	31 (55.4)	51 (78.4)	
Financial support	Poorly supported	7 (12.7)	7 (10.5)	<i>p</i> = 0.887
	Neither	15 (27.3)	26 (38.8)	
	Well supported	30 (54.6)	27 (40.3)	
Support from local RCS professional staff	Poorly supported	3 (5.4)	1 (1.5)	<i>p</i> = 0.133
	Neither	3 (5.4)	2 (3.0)	
	Well supported	48 (86.3)	63 (94)	
Support from local RCS academic staff	Poorly supported	1 (1.8)	1 (1.5)	<i>p</i> = 0.108
	Neither	5 (9.1)	3 (4.5)	
	Well supported	47 (85.5)	62 (92.6)	
TQ COVID-19 effect on the quality of learning	Negatively	49 (86)	47 (71.2)	<b><i>p</i> = 0.023</b>
	Neither	4 (7.0)	15 (22.7)	
	Positively	4 (7.1)	4 (6.0)	

Bold values indicates significant of *p* values.

Abbreviations: P, progression; RCS, Rural Clinical Schools; S, support; SH, safety and health; TQ, training quality; Y3, Third-year students; Y4, = Fourth-year students.

### 3.2 | Impact on learning

Although some students described satisfaction with the changes made to accommodate the disruptions caused by the pandemic:

Thankful for compensatory tutorials—originally more diverse cases than what would be on the average ward

My elective plan did change, but I still got the speciality I wanted, just in a different location

Some others illuminated the adverse impact of the pandemic on the quality of their learning and clinical supervision. Students said:

With patient avoidance of hospitals as well as distancing restrictions, the opportunities to see/interact with a variety of patients was more limited during peak COVID times

My anaesthetics contact time was also reduced due to theatre rules (1 student/entire theatre area per day) & reduced cases

### 3.3 | Communication and changes

Several students empathised about the unprecedented nature of the pandemic and were generally satisfied with the changes made and communication received:

I believe pulling us out of the peak of COVID was the correct choice...

Staff made regular contact and kept me informed of the developments.

However, some students felt that the communication could have been clearer and timelier. Students said, '(There) was a lot of regular communication but sometimes with confusing messages'; 'Lots of big sudden announcements e.g. move out quickly.'

### 3.4 | Mismatch between the university and health service staff expectations

Some students discussed the mismatch in expectations between the university and health service staff. Although they felt that the university had been supportive of the

students undertaking their placements in 2020, especially early on during the pandemic, they reported that this message was not reflected among some health service staff. Students said:

We got barred from many clinical activities due to number maximums for a room, even once COVID was largely not present in the area, which was disappointing and sometimes set us in a more adversarial position with the staff when they were kicking us out of things

...moreover, staff at the hospital often questioned why our placements were continuing, undermining the continuity of learning...

...we were required to continue attending, though some doctors/staff indicated this was unwise/unwanted...

#### 4 | DISCUSSION

This study presents rural-based medical students' perceptions of disruptions experienced in 2020 due to the COVID-19 pandemic on their clinical placements, learning and well-being. Overall, RCS students in their penultimate and final years reported good satisfaction with changes made to their placements including shortened placements, change of placement location and transition to online teaching methods. Most students saw the necessity for the changes and were appreciative of the learning opportunities provided despite the interruptions faced in health services. Still, 78% of students reported that the pandemic has adversely impacted the quality of their learning, similar to the 75% reported in a US study.<sup>6</sup> It is noteworthy that 89% of students in this study felt 'always safe' in their clinical training, which is noteworthy given the importance of safe learning environments in facilitating learning. Although a majority of students considered the changes adequate enough to propel them to completing their medical degree, it will be necessary to monitor the longer term impacts of the learning disruptions on medical students' careers and their work preparedness.

Increased mental health challenges and experiences of isolation were commonly reported, consistent with a recent systematic review on medical education impacts from the COVID-19 pandemic by Ardekani and colleagues,<sup>8</sup> which highlighted the increased prevalence of psychological concerns in medical students. In the US medical student survey, over 84% of respondents reported moderate effects of the pandemic on their stress and anxiety levels.<sup>6</sup> This has resulted in calls for extensive

and direct measures to mitigate the pandemic's effects on individuals and communities.<sup>7,8</sup> This is even more important in rural areas, where students are already prone to experiencing isolation from their family and support networks.<sup>12</sup> It is reassuring that in the current study, the majority of students felt supported by the university (via regular communication, provision of alternative placements, online teaching, assistance from the university's student support teams and financial support) which may have helped with mitigating some mental health concerns. The COVID-19 literature recommends well-being strategies for medical students such as resilience training, developing social support and emotional resilience, self-care activities such as exercise, and engaging in fulfilling interpersonal relationships.<sup>7</sup>

The third-year students reported lower satisfaction than fourth-year students with the transition to remote supervision. Years 1 and 2 of the medical school training is predominantly classroom based; thus, this group had only 10 weeks of clinical placement experience when the pandemic began. Understandably, transition to online format would have been difficult for this group, coupled with a desire for face-to-face learning. This is in line with findings from the systematic review about a prevailing desire for face-to-face consults.<sup>8</sup> Given different learning styles and approaches that cater to different learners, medical schools need to work towards having a range of teaching approaches including face-to-face and online methods. Rainbow and Dorji<sup>14</sup> have encouraged medical schools to implement an academic/welfare support framework to ensure that students are coping with the online content. Unfortunately, remote clinical supervision undertaken using technology (telesupervision) continues to remain under researched.<sup>15</sup> Practising health professionals that are expected to provide teaching, as well as clinical care via telesupervision are likely to benefit from targeted professional development activities to ensure students are receiving high-quality clinical supervision even when face-to-face contact is limited.<sup>16</sup>

Some differences were noted in third- and fourth-year responses in this study. A vast majority of fourth-year student placements remained undisrupted in an effort to facilitate timely graduation of this cohort, whereas third-year placements in semester one were ceased. It is perhaps unsurprising that third years were less satisfied with the changes and expressed a desire for more support compared to their counterparts. This pattern of differing responses is similar to the US study of medical students, where the graduating class of students described lesser impact of the pandemic on medical education and anxiety, compared to students in their earlier years.<sup>6</sup> This difference may suggest the need for more support to students that are newer to clinical workplace environments. In the



current study, although the RCS implemented some social support measures such as online trivia and virtual pizza nights to enhance pastoral support, students indicated a desire for further online peer support opportunities to enhance social cohesion. Opportunities can be enhanced that go beyond the skills and knowledge focus, to address social cohesion and interpersonal relationships. Some of these psychological support opportunities can also be driven by students such as peer mentoring of junior students by more senior students.<sup>17</sup>

Many students additionally indicated a difference in expectations about student placements between the medical school and health services. While medical students are enrolled through universities, much of their clinical training occurs in health settings and heavily relies upon support from clinicians and health services whose primary focus remains the delivery of safe and effective health care. It is likely that health service staff had concerns about their own safety and well-being, as well as the safety and well-being of students on placement through the thick of the first wave of the pandemic.<sup>18</sup> At times, it is also likely for students to be caught in the middle of differing views of the 'corporate' health sector and that of individual departments or clinicians, as well as differing views between similar health services. The pandemic has challenged different health services and education organisations to find common ground in how to support the ongoing training of students, while also managing major clinical care stresses (which the health services default to prioritising). This highlights the need for continued ongoing and clear communication between and within sectors to maximise positive learning experiences for students, as well as additional support strategies for health service staff, especially those servicing high-risk areas impacted by the pandemic.

Given the cross-sectional nature of the study, the full range of impacts and concerns relating to the pandemic may not have been captured. The survey is planned to be repeated after 2021 placements, to gain a longer term perspective. Given the anonymous nature of the survey, no demographic comparisons (e.g. gender) were able to be explored. Future research can address this, as well as focus on the use of qualitative methods to explore in-depth experiences of medical students undertaking rural placements during the pandemic. Future research could also consider triangulation of student evaluation data with other data sources such as staff feedback or performance on assessments. Anecdotal evidence suggests increased preferencing of RCS training in 2021 and 2022, but further research is needed to clarify whether this relates to perceptions of these locations being 'safer' or less disrupted training locations while the pandemic continues, or other reasons.

Whether these findings can be transferrable to other medical schools is uncertain. The RCS in this study has a strong clinical skills and simulation programme and team, who were able adjust their face-to-face procedural skills and scenario-based learning to novel online formats, which may have contributed to the students feeling well supported. Not all metropolitan or rural-based medical programmes may have the resource capacity for this kind of pivot.

## 5 | CONCLUSION

The impact of the COVID-19 pandemic on medical education, including clinical placements, has been significant. This survey study, conducted in one Australian RCS, investigated the impact of the pandemic on medical student placements in rural areas and students' response to changes made to learning structures and processes owing to the pandemic. The range of academic and psychological support strategies implemented by the RCS were well received by students and may have played a vital role in mitigating mental health concerns experienced by students completing clinical placements in rural areas. This study has highlighted a need to further enhance support provided to students in the earlier stages of their training and to strengthen communication between the academic and health sectors. Recommendations developed from this study can assist with enhancing the quality of rural medical education not only in the post-pandemic period, but also into the future should similar challenging situations be encountered.

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### CONFLICT OF INTEREST

The authors declare no conflict of interests.

### AUTHOR CONTRIBUTIONS

PM: conceptualization; formal analysis; methodology; writing – original draft; writing – review & editing. MRM: conceptualization; formal analysis; investigation; methodology; validation; writing – original draft; writing – review & editing. JF: conceptualization; formal analysis; methodology; writing – original draft; writing – review & editing. RP: conceptualization; methodology; writing – original draft; writing – review & editing. SK: conceptualization; investigation; methodology; writing – review & editing.

## ETHICS APPROVAL

This study had ethical approval from the University of Queensland Human Research Ethics Committee, under its broader RCS evaluation project (Ref: 2005/HE000348).

## ORCID

Priya Martin  <https://orcid.org/0000-0002-2092-6551>

Matthew McGrail  <https://orcid.org/0000-0002-6901-8845>

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