Australasian College of Sport and Exercise Physician's (ACSEP) Remote Supervision Program 2022-2024 Final Evaluation Report



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Funding Statement

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Executive Summary

Background

The Australasian College of Sport & Exercise Physicians (ACSEP) oversees specialist medical registrar education and supervision in Australia and New Zealand for Sport and Exercise Medicine (SEM). The ACSEP Training Program requires specific onsite supervision hours across the fouryear training program: 20 hours (year 1), 14 hours (year 2), and 8 hours (years 3+). Supervision is provided by ACSEP Fellows at ACSEP accredited clinics. Most clinics and supervisors are metropolitan or regional centres limiting rural training opportunities. Remote supervision allows the registrar to live and work at a rural or remote site whilst ensuring patient safety and quality training. The Flexible Approaches to Training in Expanded Settings (FATES) program is a Commonwealth of Australia Department of Health and Aged Care initiative that funds non-general practitioner specialist medical training approaches in Australia. ACSEP received grant support to develop, deliver and evaluate a model of remote clinical supervision in the SEM practice context in rural and remote areas in Australia.

Aim

The evaluation sought to explore the feasibility, scalability and effectiveness of remote supervision for ACSEP registrars with respect to rural recruitment and retention; impact on training and the community and understand participant experiences to identify successes and areas needing additional support.

Method

In realist evaluation, multiple data sources inform analysis. Qualitative data was collected from transcripts of one-on-one interviews Zoom interviews with trainees, supervisors, and ACSEP staff. Quantitative data was collected across four time points using the General Practice Supervisory Measure-Supervisors (GP-SRMS) and the General Practice Supervisory Measure-Registrars (GP-SRMR) surveys which are designed to measure the quality of the relationship between general practice supervisors and registrars from each perspective

Findings

Five themes were identified from the transcripts of the one-on-one interviews with two registrars, three supervisors and ACSEP staff: Quality Supervision Matters; Boosting Rural Care Access; Professional Growth and Development; All around Support (Enablers); and Tackling Hurdles (Barriers). Analysis of survey data demonstrated most supervisor-registrar relationships were safe, positive and professional that were highly rated and valued by both.

Key findings indicate that the ACSEP remote supervision model effectively fosters a positive and flexible training culture in rural Australia, leveraging technology to enhance supervision. Registrars and supervisors were motivated and the College managed engagement barriers. The model was feasible and valued by both registrars and supervisors, though additional financial support for supervisor travel is necessary. The ACSEP remote supervision model effectively reduces barriers to rural practice through effective use of technology, without compromising training supports or patient care. The model offers registrars additional support from both on-site and remote supervisors, enhancing training through access to varied expertise. The remote supervision program also provides rural communities access to non-GP specialists, offering new medical care options and easing the patient load on local general practitioners. The small participant sample size in the current work limits the ability to fully evaluate the model's longterm effectiveness on training experiences and community healthcare outcomes.

Discussion and Conclusions

The evaluation indicates that the ACSEP remote supervision model is feasible, scalable, and effective for SEM specialist training, and supports rural recruitment and retention without compromising patient care. Participant experiences were largely positive, highlighting effective use of technology and the benefits of flexible, remote supervision. However, additional financial support for face-to-face interactions and further studies on long-term impacts are recommended. The program also enhances community access to specialised care, adding significant value beyond training experience.

Recommendations

The findings of the evaluation of the remote supervision program support several recommendations for consideration by the ACSEP. The recommendations are:

- Continue the ACSEP Remote Supervision Program as a training opportunity for future registrars and to address areas of unmet healthcare needs. Creating these new opportunities in novel locations may lead to additional hubs and training opportunities.
- Provide clinical training supervisors who participate in the remote supervision program with additional funding to support travel that supports some face-to-face meetings (e.g. for bimonthly, quarterly or six monthly reviews depending on the registrars needs and preferences).
- 3. Active engagement and support from the community is essential in the provision of training and we recommend the next steps should include ACSEP liaise with local communities and providers to engage with them and market Sport and Exercise Medicine.
- Ensure the administrative resources are adequate to support the remote supervision cohort size, including the ability to gather timely feedback from CTS' and registrars about their experiences.
- Proactively explore alternatives to existing training requirements (e.g. elite team sport requirements or requirements to move location) to enable and support rural or remote registrars.
- 6. Ensure the remote supervision program is only available to registrars in year 3 and above to ensure the registrars have the requisite level of experience to set them up

for success in the remote supervision program.

- 7. Ensure supervisors participating in the remote supervision program are experienced clinical training supervisors, who receive additional training to support their role as a remote supervisor. They should have availability to travel to the training location at some time points in the supervisory period. Ideally, supervisors should also have rural or remote practice experience themselves.
- Support the development of a 'hub and spoke' model where a registrar is nominally situated in a regional/rural 'hub clinic' but is afforded the opportunity to travel to other locations as part of their training. For example, a regional hub in Ballarat where the registrar could service surrounding areas (e.g. Horsham, Maryborough, Ararat).
- 9. Develop a partner supervision relationship with other specialist medical colleges where they may already have the resources, such as supervisors and infrastructure to provide on-site supervision in addition to remote supervision from an ACSEP CTS.
- 10. Foster relationships with rural medical schools to directly engage with medical students, including development of observation placement opportunities.
- 11. Develop a peer group for remote supervisors to share ideas and strategies for remote supervision and to facilitate professional development opportunities for this supervisor cohort.

Introduction

ACSEP Specialist Training Program

The Australasian College of Sport & Exercise Physicians (ACSEP) is the specialist medical college responsible for trainee (registrar) education and supervision and representing specialist Sport and Exercise Physicians (SEP) across Australia and New Zealand. The current ACSEP Training Program has specific requirements with respect to minimum clinical supervision hours that need to be met to ensure SEP registrars are prepared for their future role as specialist SEP and Fellow of the College. The clinical supervision requirements mandate that a registrar must receive a minimum number of onsite supervised hours per week in an accredited ACSEP training practice. Junior SEP registrars require 20 hours (year 1 of the training program) or 14 hours (year 2) minimum per week of onsite supervision respectively. Senior registrars (year 3+) require at least 8 hours of onsite supervision per week. These onsite supervision hours must be supervised by an ACSEP Fellow, called a Clinical Training Supervisor (CTS).

Most ACSEP training practices are in capital cities across Australasia. Subsequently, there are limited opportunities for registrars to undertake training in rural and remote settings due to a shortage of practices and CTS' in these locations. Therefore, ACSEP is exploring alternatives to onsite clinical supervision to facilitate training opportunities for registrars, such as remote supervision. These alternative approaches to onsite supervision can simultaneously increase access to health care for communities in rural and remote areas.

Remote Clinical Supervision models in Australian Specialist Training

Clinical supervision models for General Practice training through the Royal Australian College of General Practitioners (RACGP) and the Australian College of Rural and Remote Medicine (ACCRM), have successfully utilised remote supervision approaches since the early 2000s. Wearne, Teunissen et al. (2015, p. 671) define remote supervision in the clinical training context as:

"Clinical supervision, supported by information and communication technology, of a doctor-intraining by an experienced doctor working in a different location. A key feature is that distance prevents the remote supervisor from routine, inperson contact with the doctor-in-training and their patients. Remote supervision is synonymous with distance supervision and telesupervision".

A variety of remote clinical supervision models have been trialled in the Australian context. Examples of these models include video conferencing and/or phone discussions of remotely placed registrars (Cameron, Ray et al. 2015; Wearne, Teunissen et al. 2015, Ingham and Fry 2016), and models with varying quantities of faceto-face contact (Gill, Stella et al. 2020).

Emergency medicine registrars have identified several advantages of remote supervision (Gill, Stella al. 2020) including et increased independence, confidence, and self-trust: development of leadership, advocacy and interprofessional relationship skill; enhanced relationships with supervisors; and prioritised access to supervisors. However, these authors also identified several disadvantages including a reduction in the quality and quantity of information sharing between supervisor and registrar; having to manage the technology as well as the consultation; technology failure; the supervisor not being able to offer physical assistance; and reduced informal opportunities for teaching, mentoring, debriefing and pastoral care (Gill, Stella et al. 2020).

Effective use of technology is key to the success of remote supervision. Although literature notes the challenges associated with the use of technology for remote supervision (Cameron et al., 2014; Ducat et al., 2016) there is also "immense value" in its use (Marrow et al., 2002). When designing remote supervision programs, governance should also include actions to enact with technology failure or limitations, for example, internet or phone outages (Martin et al., 2017).

Research in remote supervision and its user experiences have also enabled proposal of best practice models to maximise the advantages and minimise the pitfalls of utilising remote supervision. Wearne proffer several strategies to mitigate these issues including developing appropriate oversight and management structures; selection of appropriately experienced supervisors that volunteer to participate; and ensure supervisor skill set is appropriate for remote clinical supervision (Wearne et al., 2013).

Other work in the Australian context identified success where remotely supervised registrars were able to select their own supervisor (Martin et al., 2019). Registrars value supervisors (or potential supervisors) who have clinical experience in rural or remote settings, supervisors that have quarantined time for supervision (Martin et al., 2019), and supervisors who they are able to meet face-to-face at different stages of the supervisory process (Martin et al., 2017).

Beyond the supervisor, the literature also suggests that registrars should be adequately equipped to manage being supervised from a remote location. Literature notes that remote supervision "suits experienced registrars with resilience, insight into their strengths and weaknesses, capacity to selfmonitor and correct, and willingness to seek help" (Wearne et al., 2013, p. 891).

Although clinical competence is important when selecting registrars who are suitable for remote supervision, the commentary above suggests colleges also need to ensure that a registrar possess the requisite professional skills to manage being placed and supervised remotely. As such, the assessments undertaken by the registrar prior to a remote supervision placement should adequately assess the relevant professional skills for the specialist training context.

By being placed remotely as part of their training, registrars may be placed in a position where they need to develop their own professional networks (Wearne, 2016), and not be able to rely on the networks developed by others. It is also possible that by being placed remotely, the registrar is exposed to a wider patient group with diverse, and often complex, care needs, compared to being placed in a metropolitan setting (Wearne, 2016). Exposure to these patient groups has benefits for both the registrar and the community in which they are working (Wearne et al., 2015) whilst also developing capacity to autonomously provide patient care (Cameron et al., 2015).

The literature also supports the need for ongoing evaluation of remote supervision programs (Martin et al., 2017) to ensure that they are meeting the needs of both the registrar and supervisor as well as the community, and to ensure any issues can be readily addressed so as not to impact on the supervisory relationship.

The ACSEP Remote Supervision program

The Flexible Approaches to Training in Expanded Settings (FATES) program is a Department of Health and Aged Care initiative that funds nongeneral practitioner specialist medical training approaches in Australia. The FATES program aims to broaden the skills of the specialist workforce, bring more specialists to regional areas, and ensure all Australians can access high-quality care. In 2021 ACSEP applied for funding to develop, pilot and evaluate a program of remote supervision for the specialist sport and exercise medicine training program in 2022 & 2023.

ACSEP's program in remote supervision was developed blending the recommendations discussed above with the requirements of the ACSEP specialist training program, its requirements and the curriculum.

The ACSEP remote supervision program ensured roles and responsibilities were clearly defined, with clear governance structure and supports in place. The evaluation plan was developed in conjunction with ACSEP and provides a realist evaluation perspective of the project. A realist evaluation aims to understand the underlying causal mechanisms that generate behaviours or states of affairs and how people adapt to them. This is achieved by differentiating salient circumstances that are conducive to producing the types of behaviours or adaptations of interest (outcomes).

Method

Aims

- 1. Evaluate the feasibility of remote supervision for specialist sport and exercise physician training for:
 - a. ongoing suitability without FATES funding.
 - b. scalability of the Project in other locations and for other Colleges/specialties.
- 2. Assess the impact of the project to meet the FATES objectives and outcomes.
- 3. Evaluate the experiences of participants to determine what worked well and where additional support is required.

Data collection

In realist evaluation perspective, different sources of data are used to inform the analysis. In this evaluation of the ACSEP remote supervision pilot program, data were collected from these sources:

- Zoom interviews with rural or remote trainees (registrars), remote Clinical Training Supervisors (supervisors) and ACSEP staff generated detailed qualitative data.
- General Practice Supervisory Measure-Supervisors (GP-SRMS) and the General Practice Supervisory Measure-Registrars (GP-SRMR) surveys which are designed to measure the quality of the relationship between general practice supervisors and registrars from each perspective. Due to the predominant private practice setting of SEP practice, we have utilised this validated measure to capture additional data.

Semi-structured interviews with stakeholders

ACSEP rural or remote trainees (Registrars), remote Clinical Training Supervisors (Supervisors)

and staff from ACSEP National Office were invited via email to participate in an interview of up to one hour with one of the researchers (BV).

Questions were designed the test the propositions at two time points – six months into the program and at the end of the program (24 months). Interviews were conducted via Zoom and auto transcribed. Transcripts were thematically analysed.

Data analysis and synthesis

Initially, data collected in each phase were analysed by the researchers independently. The analysis off the transcripts from the zoom interviews involved collating and repeatedly reviewing the documents to identify recurring key messages (themes). Interview transcripts were read and re-read to identify key concepts that were further developed into themes.

GP-SMRS and GP-SRMR survey data were collected by ACSEP staff, collated and forwarded to the researchers. We applied the recommended descriptive analytical approach recommended to score the GP-SRMS and GP-SRMR surveys to analyse and summarise the data (GPSA, 2018).

Next, context-mechanism-outcome configurations were identified and used to explain outcome variations. This approach helped determine how variations in context can influence outcomes, the mechanisms by which they occurred, and how these variations could be managed to develop a useful and acceptable model of SEM education for ACSEP registrars.

Ethics Approval

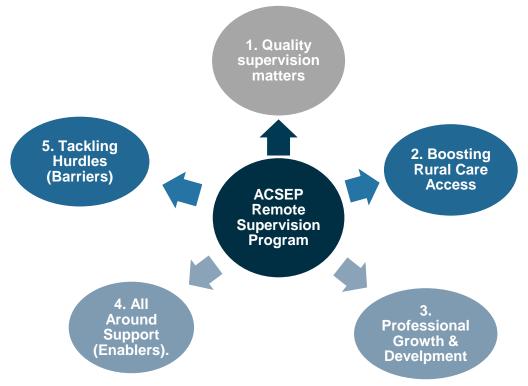
This project received approval from the University of Melbourne Human Research Ethics Committee on 10/10/22 Reference Number: 2022-24325-33199-3.

Interviews with stakeholders

Interviews were conducted with two registrars, three supervisors and a member of staff from the ACSEP office. Due to the small number of participants, we have not offered any details that could identify the participant (e.g. gender –

he/she) or locations discussed participants to protect their privacy. Five themes were identified from the data provided by the participants (Figure 1).





Theme 1: Quality Supervision Matters

The theme "Quality Supervision Matters" was identified from repeated references to the critical role of quality supervision in supporting the remote supervision program at ACSEP. Both registrars and supervisors emphasized the necessity of highquality supervision in their experience of the program. Registrars defined quality supervision as an experienced, accessible and empathetic supervisor who had practiced in the location or was willing to practice in or travel to the location, and from a rural or remote background themselves. Multiple references were made by both supervisors and registrars for the need for some in-person site visits to support a quality remote supervision experience. These recommendations varied from one per month to once for training period.

So possibly having more, you know, in person supervision, rather than just once every six months, which seems a long time. And then you can do, we found that there was a really good opportunity to do the workplace-based assessments there in person when you can, you know, watch an examination, watch procedural skills. And you know, doing a couple every month would be good. (Supervisor 1)

...moving forward, I'd probably try and do that [visit the registrar], and you know, once a quarter, you know, a couple of couple of times each track, each six months priming block. (Supervisor 2)

The data revealed discussions about the necessity of remote technologies to support their learning. Registrars expressed the importance of having a supervisor who can provide guidance not only through direct interaction but also using remote tools and being flexible about the platforms (e.g. FaceTime, Zoom, WhatsApp). Examples including video recording patient interactions (with permission) then sharing with the remote

supervisor for video-based case discussion or assessments (E.g. Work based assessments such as Case-Based Discussions). Overall, the emphasis on quality supervision highlights its fundamental role in ensuring the effectiveness and success of remote clinical training in Sport and Exercise Medicine.

(Comparing the kind of support from remote supervisor to their face-to-face supervisor) It was more of a planned thing...I guess gave me a bit of time to prepare for things...I will pick a case during the week knowing that I was speaking to [Remote Supervisor] on Friday, I could prepare it just like almost like an interview, and then document it from that point of view. (Registrar 1)

Time was also identified as a key element of quality supervision. Registrars and supervisors appeared to be more structured in their approach to allocating time to meet, rather than the more informal meetings that would happen in face-to-face supervision.

I think it's really good from a teaching point of view that you have some protected...time, that you speak through different topics and plan to do it via either via Zoom, or we'd often just do it via WhatsApp calls. Mainly because it's protected time and you don't have you know, patients that are backed up in the waiting room and you know, people waiting on you and calling you, so I think that was useful. (Supervisor 1)

...don't let the arrangement get too loose, and the contact too occasional and, you know, [registrar], and I were careful never to let that happen, you know, we kind of made a point of sort of locking in particular times, and it actually worked really well for [gender] to catch up with me before the weekly registrar tutorial, the national tutorial that's run online. (Supervisor 2)

Supervision quality may also be impacted by the training stage of the registrar. Participants suggested that only later stage registrars should be eligible to participate in the remote supervision program, which aligned with the original remote supervision program guidelines developed by ACSEP. Registrars with other clinical experiences and personal qualities were also seen as being well suited to participating in remote supervision program.

I do feel if it was a more junior registrar at a remote location, you may need more of that in person supervision for things like procedures, and maybe examination as well, because you can do it via Zoom or film, but I just don't find it quite the same. So yeah, that's probably one challenge is that more hands on or procedural type teaching. But I was in a way, I had a senior registrar who with a lot of prior experience, so it wasn't as challenging. (Supervisor 1)

...spending a few days out there was that [gender] was practicing so far beyond the level of a first year, you know, [gender] was practicing like, the third year really, because of [gender], you know, prior skills and experience. (Supervisor 2)

...that could be a third and fourth years, primarily, people that have been around long enough to at least know their shortcomings and when to seek help. That's kind of critical. (Supervisor 3)

...really needing to be a self-starter who's really motivated to make the time and organise this and do that kind of stuff. (ACSEP)

The participants were also asked whether the remote supervision should continue. All participants indicated that the program should continue, potentially with some minor modifications.

Yeah, absolutely. I do. I think Sport and Exercise medicine is a very safe field to supervise remotely. (Supervisor 3)

As a past [college committee position], knowing that it's hard to get registrars in posts, more regionally? I mean, this is fantastic...fantastic clinical load...and excellent backup for the registrar. (Supervisor 2)

Definitely, yeah. I don't think you're going to have expansion to rural and regional areas without it. (Registrar 2)

If someone's from a regional area, they want to train in that area. And then if they've had enough experience, then yeah, definitely, I think it's a great way and it's probably, you know, a bit more beneficial for the registrar to do that. And then they're more likely to stay in *the rural area, or the regional area.* (Supervisor 1)

Participants suggested that success of the remote supervision program was difficult to measure but could include evaluating fellowship examination or workplace-based assessment outcomes. More holistic views were also proposed.

I guess by speaking with the consultants speak with the registrar, getting that feedback as well, then maybe speaking with community, you know, the local community speaking with the local, you know, orthopaedic surgeons, local sporting clubs, the sort of stakeholders that, you know, maybe very supportive of the programme. (Supervisor 1)

I guess success would be any registrar that is being remotely supervised is feeling like they [registrar] are well supported by the college, well supported by the supervisors. They're [registrar] living in an area that they want to live. And they're [registrar] not being disadvantaged by the fact that they might be living in an area that's a bit more isolated. (ACSEP)

Theme 2: Boosting Community Access

The theme "Boosting Community Access" was identified through frequent discussions about the positive impact of the program on rural and remote healthcare. Both supervisors and registrars emphasised how the presence of registrars in these areas significantly enhanced access to specialised sport and exercise physician care.

...having [registrar] in that practice, when [fellow] otherwise is the only sports physician in town that suddenly doubles the availability of Sport and Exercise medicine. (Supervisor 2)

We have the highest proportion of patients that identifies Aboriginal and/or Torres Strait Islander as well...all our patients are from rural or remote communities. We don't have any major city patients so having access and delivering care to people that otherwise wouldn't have had access to it is something that's brand new, there's been no sports physician in this location. (Registrar 2)

Registrars noted that their ability to see patients without requiring a specialist referral streamlined

patient access to more affordable care, also potentially freeing up GPs from the referral process and expedited access to SEM services. This early intervention can reduce pressure on surgical services and other healthcare resources. This expedited access can have a profound impact on patient care:

The wait times to see a surgeon even privately can be months and months and get an operation by them as you know, six months plus and even in the private sector. So that's MSK [musculoskeletal]. You know, orthopaedic surgery, and a lot of the people that service from speaking with the surgeons, a lot of the people they're seeing would benefit from more seeing, you know, a good sports physician. So that would take a lot of a lot of burden off the other practitioners in the area. (Supervisor 1)

If patients needing a knee replacement see a SEM physician, they might be able to delay their need for surgery. (Registrar 1)

This theme underscores the program's success in making SEM care more accessible and effective in rural communities, ultimately enhancing overall healthcare outcomes.

So the idea is, is we're trying to reduce these patients that probably don't need an operation, which is most patients, but in that kind of 40 to 60 age bracket or younger, that, you know, don't need a knee replacement. They don't need a hip replacement. They need, you know, some reassurance, education, injections, tablets, you know, all of those things that the GPs don't necessarily have the time or the facilities to provide. So I guess that's kind of where we come into it...we can see them sort them out. They don't need surgery, they're reassured, and they're not waiting on a waitlist for three and a half years. (Registrar 1)

Every bit of correspondence, every patient that [registrar] says that kind of extends the knowledge of the role that [gender] does and the value add to the community...Because, you know, they're the areas we can make the biggest differences where that service hasn't previously existed. (Supervisor 3)

Comments about access also extended to using the remote supervision program to encourage registrars or applicants to the training program from a rural or regional background to undertake the latter stages of training in these locations with a view to them practicing in that location postfellowship.

Being able to be home, with family, even though it wasn't every day, and also serving my own community and working within my own professional network of doctors, is what motivated me to continue. (Registrar 1)

If someone's from a regional area, they want to train in that area. And then someone and then, you know, I've had enough experience, then yeah, definitely, I think it's, I think it's a great way to try and it's probably, you know, a bit more beneficial for the registrar to do that. And then they're more likely to stay in the rural area, or the regional area, which I think is the goal of, you know, obviously the college and the health system. (Supervisor 1)

Yeah, I think you know, the right person or the, you know, someone who is really tied to one part of the country, that could be a big factor. (Supervisor 3)

We know that there are registrar's that do want to practice in regional or rural areas, you know, they want to practice in a place that they want to live. (ACSEP)

Theme 3: Professional Learning and Development

Participants identified that taking part in the remote supervision program supported multiple learning opportunities and professional development benefits for both the registrars and their supervisors.

The registrars identified the protected time with their supervisor offered specific, scheduled times for learning.

I think it's been a fantastic thing, especially in the early days of training. So the way it was structured for me...it gave me that ability to without even thinking have stuff ticked off. And it kind of it was almost like a forced study and forced learning but not unwanted. (Registrar 1)

The rural or remote clinical environment may mean registrars in these locations may have broader patient groups or more limited access to facilities compared to their metropolitan counterparts. However, this was seen as beneficial for learning.

I actually think that the remoteness of [gender] training has probably increased a lot of [gender] skills, because there's not quite the access to scanning and access to other things. And so [gender] been exposed to a lot of challenging clinical situations and without necessarily having resources to rely on. (Supervisor 3)

Working in remote regional area...essentially, it's isolated from a sports medicine perspective, and it is isolated from the speciality. So, you get to see a lot of variety of presentations, you are looking after the old, the young, you have to probably be involved a little bit heavier than you would in an urban setting. But... I feel like that would that challenge you to improve your skills, which has been something I really enjoyed. (Registrar 2)

For the supervisors, there was a recognition that participating in supervision was beneficial for their professional development.

From my point of view, I've been...ongoing research for our topics of discussion each week, when [gender] has questions or patient questions, it makes me go and do some extra work to find the answers. So it continues my learning as well. (Supervisor 1)

Although there were positives to participating in remote supervision with respect to growth, from a development and learning perspective participants suggested several aspects of the training program may need to be reviewed to ensure that registrars are exposed to the breadth of practice and not disadvantaged by participating in the program.

...at a remote location, you may need more of that in person supervision for things like procedures, and maybe examination as well, because you can do it via Zoom or film, but I just don't find it quite the same. So yeah, that's probably one challenge is that more hands on or procedural type teaching. (Supervisor 1)

The reasons for participating in the remote supervision program were varied. Supervisors engaged with the remote supervision program because they wanted to 'give back' or change their own practice. I don't want to be in the clinic, you know, all day, every day, I need some sessions with some different things on. And then it's my Friday afternoon that I'm available for [registrar] and I sit down and it's kind of the launch into the weekend together. (Supervisor 3)

Theme 4: All Around Support – Facilitators of Remote Supervision

Peer support, protected time and access to college resources were highlighted as essential components in ensuring that supervision is comprehensive and supportive. Both groups flagged that having the protected time with the supervisor helped with structuring learning – tailored training (both supervisor who could prep ahead of the meeting) as well as the registrar (helped me study) prior to their weekly online meeting.

"protected time...it just allows good quality teaching. I think, over the last 12 months, we've done more hours of teaching on theory subjects, then I would have got in most of my training...because usually in a practice, it's, you know, five minutes here, five minutes there between patients... an hour every couple of weeks to do something if you've got a good supervisor. But with the protected time, it makes both parties who are busy put that aside and say, well, that's for teaching and then it's enjoyable, and I think it's useful. But if you don't have that time, put aside you won't do it. Life's too busy, work is too busy..." (Supervisor 1).

Participants described several instances where technology and the training program structure blended to facilitate their remote supervision experience. Registrars and supervisors included the importance of the college's existing online interactive tutorials and mentorship to build competency and confidence in Sport and Exercise Medicine. Additionally, previous changes to assessment for learning included registrars being allowed to video record a patient for completing Work based Assessment (WBAs) requirements. When used in remote supervision approaches, it was recognised as being supportive to remotely supervised registrars learning for assessment:

...we did a lot of case-based discussion towards the end [of the training term]. We piloted doing a mini clinical evaluation, where [gender] videoed the patient and sent me links. So, it wasn't done as a live thing...reviewed the consults, and then we find a tutorial around my feedback on the mini clinical evaluation. So, so much of that stuff that you're used to doing face-to-face with the registrar, you can do remotely. (Supervisor 2)

Another technology enabling was the recognition that video could be used (with patient consent) to record a challenging case or a training need such as reviewing a specific examination and shared with the remote supervisor for review and feedback.

So, if [registrar] had a problem with a specific examination, if [gender] couldn't explain it to me with a patient, then [gender] could get consent and then film it, and obviously something I could look at and then feedback. (Supervisor 1)

Support also extended to the remote supervision program affording registrars an opportunity to continue their training considering family and social considerations.

I think it's been really beneficial for [gender] from a time management and lifestyle point of view, you know, young family living up their [location] having to travel to either [location] or [location] to train was a huge burden to the point that you get to take some time off because it just almost wasn't feasible. (Supervisor 1)

And being conscious of some of the additional stresses that within maybe away from support networks and things like that might bring. So, we're trying to lay all that out and some guidelines at the moment and you know, work out what criteria they really need to fill to be eligible for this beyond the pilot and how we monitor that over time. (ACSEP)

Supports around the registrar were also identified as being a consideration in the suitability of a location for a remotely supervised registrar. These supports included recognising the importance of the requirement of having an onsite supervisor who was a fellow of another college (Clinical Training Instructor – CTI) but also included the other health professionals in the practice or community, and the physical resources that would be appropriate for a registrar providing a service to the community (i.e. access to suitable diagnostic imaging). ...they don't they don't necessarily need a [SEM] Fellow on the ground in person... there's fantastic emergency physicians, there's paediatricians that are that are in town, so that sort of level of support, I think, is important. (Supervisor 3)

College support focused on regular check-ins with the registrar to address any issues that arose with the remote supervision process. These check-ins were feasible particularly when the frequency of the meetings was reduced.

...we kind of had the discussion with them about the frequency of those [registrar meetings] and felt that they were almost too frequent, because only a few weeks was really passing before we would check in again, and not a whole lot was changing. (ACSEP)

Theme 5: Tackling Hurdles – Barriers to remote supervision

The interviews revealed several significant barriers that affect the efficacy and appeal of remote training programs. One of the primary barriers highlighted by registrars is the extensive travel required for training, which places a substantial strain on their schedules, finances and personal lives when located in rural or remote areas. Registrars also mentioned that training program requirements also created inadvertent barriers, such as the requirement to move practices after two years, meant they delayed their application to the program by several years. Requirements for managing certain types of Team sports was a training program requirement also flagged by registrars as a barrier to remote or rural training. For example, the elite team's requirement could not be completed outside a major urban city (as the registrar needs to work with the team for at least a season or more depending on the elite sport) and while the college did approve the request to modify the relevant team sport requirement to be completed rurally, the process of approval was flagged as challenging and an additional barrier to rural or remote training.

"...l asked if one of my team sports could be done locally, which was not part of the College programme, it was meant to be an elite team requirement and, and just by presenting the evidence for that, the college was able to support me through that, but those are the things where it just felt like everything was everything was a bit of a challenge, there was no smooth path. So, it felt like I had to justify my every decision, as opposed to there was a clear understanding of the reason that I'm asking for it." (Registrar 2)

Learning from and with others was also identified as a potential issue for registrars participating in the remote supervision program. Although the registrars were in practices with other health professionals, the participants gave a sense of the experience not being equivalent to that in a larger, more SEM-oriented practice.

Probably the biggest downside that we've talked about is that [gender] has limited exposure to you know, learning from multiple practitioners so [gender] doesn't really have the opportunity to learn from other consultants which you would do in a bigger centre. So obviously, I'm the only SEM [sport and exercise medicine] practitioner going up to the [location]. And then it's very hard for [gender] to sort of sit in or learn from anyone else being so far away. (Supervisor 1)

While leveraging technology is a solution, it also presents barriers. Effective use of conferencing tools requires robust connectivity and infrastructure, both on the supervisory and the registrar sides. Not all rural areas might have the necessary technological infrastructure, which could hamper the effectiveness of remote training. Both supervisors and registrars emphasized the need for reliable internet connectivity and access to appropriate technological tools. Managing logistics, such as coordinating meeting times within busy clinical and team care requirements, while maintaining work-life balance, was also flagged as another barrier.

Financial constraints were also a barrier, particularly concerning travel and accommodation costs for both registrars and supervisors. One supervisor highlighted the need for financial support, noting, "I just wouldn't have been able to *afford to do it [without financial support].*"

I guess it doesn't need to be a lot of funding but like most anyone working in a busy, in a busy place, and especially if they're in a major city or something that they're gonna struggle to put aside a whole day or half a day, just for teaching without getting any sort of renumeration for it. (Supervisor 1) ...it [funding] was pretty fair, really, what I was referring to was, was more of the idea that the college pays for your flights to go up there and, and some accommodation for, you know, however long you stay, that kind of thing. (Supervisor 2)

...if a Fellow goes there, it's a full day of travel. And the same coming back, if you're lucky, without flights getting delayed, so it was a real mission for me to spend half a day there [where the registrar is located]. Well, now I spent a whole day there but half a day supervising him. (Supervisor 3)

One of the difficulties for me...that actually kept me away from applying to the College earlier, was the fear that I would have to move. And I probably that probably delayed my application by five or six years, because I just thought that's just not an option for me. (Registrar 2)

...when the funding runs out, we're not in the same position to be able to do that, though, we'd be a bit more reliant on the volunteer time of the supervisors. (ACSEP)

Assessments were seen as challenging, particularly as it was typically only a single supervisor undertaking these when participating in

the remote supervision program. However, having some of the assessments undertaken by someone other than the supervisor was identified as a strategy to overcome this, and this was something the College had already addressed.

Yeah, I think the one of the shortcomings is procedural skills. So, it could be it's very hard for them to sign off on their DOPS, which is directly observed procedural skills. So that, you know, if they are going remotely in third year, they would probably need a higher level of DOPS completion before going there. (Supervisor 3)

I think it would be worthwhile to have sort of some sort of external assessment or, you know, process through the year as well. So, the registrars don't get, you know, taught by a single practitioner because I don't think that's always the best thing. (Supervisor 1)

...it's led us to now establish like a remote assessment pool of fellows that will help with registrar's completing workplace-based assessments remotely, because we realised that we could probably take advantage of that a little bit more than what we are currently doing. (ACSEP)

General Practice Supervisory Measures - Quantitative data

The General Practice Supervisory Relationship Measure is a validated tool designed to measure the quality of the relationship between general practice supervisors and registrars. We have selected this tool as a quantitative measure in this project as the supervisory relationship in Sport & Exercise Physician specialist training is situated and conducted in private practice settings like General Practice training.

The General Practice Supervisory Relationship Measure - Supervisor (GP-SRMS) evaluates the educational alliance from the perspective of the supervisor, supporting the clinical, educational, and personal development of the registrar. The GP-SRMS provides a measure of:

• Safe base – the extent to which the supervisory relationship is enthusiastic, supportive, authentic and collaborative.

• Supervisor investment – the efforts to support the registrar through resources, preparation, and being interested and invested in the registrar's development.

• Registrar professionalism – supervisor perceptions of registrars' competence, responsibility and organisation skills (GPSA, 2018).

The General Practice Supervisory Relationship Measure - Registrar (GP-SRMR) measures the supervisory relationship from the perspective of registrar. The measure aims to evaluate key dimensions of the supervisory relationship, which includes Safe base, Supervisor investment, professionalism and Emotional Registrar intelligence of the supervisor. The additional measure of emotional intelligence focuses on the supervisor's ability to identify, acknowledge, and understand registrar emotions, which is an important component for fostering a strong supervisory relationship (GPSA, 2018).

The ACSEP training year runs for 52 weeks per year (with four weeks for annual leave) from 1st of February, finishing on the 31st of January in the subsequent year. Each training year is divided into two training periods – training period 1 commences 1st of February until the 31st of July. The second training period commenced on 1st of August and finishes on 31st of January the following year.

Registrars complete an end of training period progress evaluation with their current supervisors, which always include at least one Clinical Training Supervisor, who is an ACSEP fellow with direct supervisory responsibility for the registrars training. Registrars may have more than one CTS and multiple training locations. They may also have Clinical Training Instructors (CTI's) who are fellows of another specialist college who have direct supervisory responsibility for a portion of the registrars training. Each registrar also has a Zone Training Coordinator (ZTC). ZTCs are members of the ACSEP Training Committee who also offer additional review and support to a group of registrars on the training program. Each registrar also meets with their ZTC by the end of the training period. Our remote registrars therefore met with their remote supervisor (CTS), their local supervisor (CTI) and their ZTC at the end of each training period.

Within the two-year project timeline, the remote registrars and remote supervisors were asked to complete the GP-SRMS or GP-SRMR by the ACSEP Training Manager at the end of each training period. This data is presented in Tables 1, 2 and 3 below alongside a brief analysis and discussion below each table interpreting the data.

These results provide an overview of the perceptions of the relationship from the perspective of each participant.

Table 1 – General Practice Supervisory Relationship Measure – Supervisor and General Practice
Supervisory Relationship Measure – Registrar scores End of Training Period 1, 2022

		•	•			•		
GP-SRMS	Safe Base	Supervisor Investment	Registrar Profession -alism	GP-SRMR	Safe Base	Supervisor Investment	Registrar Profession -alism	Emotional Intelligence
Supervisor A	93%	96%	76%	Registrar A	100%	99%	92%	96%
Supervisor B	94%	82%	89%	Registrar B	57%	18%	77%	42%
Supervisor C	97%	94%	97%	Registrar C	100%	99%	94%	88%

Summary of Table 1

- Pairing A: Generally positive, potentially flags a minor discussion on Registrar Professionalism discrepancy.
- Pairing B: Significant discrepancies need addressing to improve support and investment perceptions.
- Pairing C: Strong and positive, potentially some growth potential for supervisor in terms of emotional intelligence.
- These results were flagged with ACSEP in our interim report

Table 2 – General Practice Supervisory Relationship Measure - Supervisor and General Practice Supervisory Relationship Measure End of Training Period 2, 2022

GP-SRMS	Safe Base	Supervisor Investment	Registrar Profession -alism	GP-SRMR	Safe Base	Supervisor Investment	Registrar Profession -alism	Emotional Intelligence
Supervisor	89%	96%	76%	Registrar	100%	100%	92%	96%

Summary of Table 2

- The data was provided as matched to Training Period 1, 2022 and there is missing data.
- Analysis suggests the Supervisor and Registrar shared similar perceptions in terms of safe base and supervisor investment, with the Registrar rating these aspects even higher.
- There is a slight discrepancy in perceptions of Registrar professionalism, where the supervisors rating is lower than the Registrar's self-assessment. This misalignment could be an area for discussion and clarification.
- Overall, both parties perceive a strong supervisory relationship with high levels of support, investment, and emotional understanding.

Table 3 – General Practice Supervisory Relationship Measure - Supervisor and General Practice Supervisory Relationship Measure – Registrar End of Training Period 1, 2023

GP-SRMS	Safe Base	Supervisor Investment	Registrar Profession- alism	GP-SRMS	Safe Base	Supervisor Investment	Registrar Profession- alism	Emotional Intellig- ence
Supervisor D	91%	90%	91%	Registrar D	100%	99%	94%	88%
Supervisor E	94%	99%	99%	Registrar E	100%	100%	98%	88%
Supervisor F	88%	78%	96%	Registrar F	100%	95%	98%	67%

Summary of Table 3

- A new group of supervisors and registrars commenced in the second year of the program.
- Pairings D and E demonstrated strong supervisory relationships with minor improvement potential in emotional intelligence.
- Pairing F could focus on enhancing emotional support and aligning perceptions regarding supervisor investment for a more robust supervisory relationship.
- Data for training period 2, 2023 was not received.

Context-Mechanism-Outcome configurations

A realist evaluation aims to understand the underlying causal mechanisms that generate behaviours or states of affairs and how people adapt to them. This is achieved by differentiating salient circumstances that are conducive to producing the types of behaviours or adaptations of interest (outcomes). In this research, the focus of realist evaluation was on the description of the context, mechanisms and outcomes that inform our understanding of the remote supervision program.

The importance of positive and engaging education culture, effective supervision, structured learning opportunities, intrinsic motivation and stakeholder engagement are identified. These factors emerge as essential factors in the feasibility of the program and optimizing the remote supervision program's impact and ensuring positive educational outcomes for remote registrars and the communities they are servicing.

Table 4 – Context-Mechanism-Outcome configurations for ACSEP remote supervision program

Context	Mechanism	Outcome
What conditions (resources, opportunities, constraints) promote or inhibit the outcome	What actions or reasoning of the actors takes place in this context?	What changes in behaviour/state of affairs are generated?
Face-to-face visits and virtual supervision opportunities.	Use of technology was paramount to the success or otherwise of the supervision experience. Face-to-face visits alone would be insufficient for a suitable training experience.	Positive experiences with remote supervision described by both registrar and supervisor participants. These outcomes may encourage other registrars and supervisors to participate in the program in the future.
Technology was flexibly used to promote positive supervision experiences.	Participants used technology for virtual supervision sessions as well as for review of clinical cases and diagnostic imaging, and preparation for workplace-based assessments.	Flexibility of the program is attractive from the perspective of affording registrars an opportunity to practice away from a metropolitan centre. Flexibility of the program promoted registrars to think about remote supervision as a strategy to enhance work/life/training balance.
Registrar participants were motivated to participate in remote supervision in a rural or remote location.	Participants self-select into the remote supervision program and are then vetted by the College for the suitability based on stage of training and completion of previous training outcomes.	Registrar and supervisor participants readily engaged in remote supervision. Barriers identified to engagement were mitigated by the College or the participants as they arose

Proposition 1: The ACSEP remote supervision model promotes a positive, flexible and engaging culture of specialist medical education & training in rural & remote Australia

Proposition 2: The ACSEP remote supervision model is feasible, scalable and effective in the context of speciality training in Australia

gistrar participants structured pervision process and made the of technology to reduce the poact of limited face-to-face ining opportunities pervisor participants saw value remote supervision to improve ining opportunities. However, ther supports were needed, rticularly financial ectiveness was thought of as a ability participate in remote pervision e supervision model reduces the practice in rural locations Mechanism	The remote supervision program was feasible from the perspective of the registrar participants where the technology supported this approach. Supervisor participants were supportive of the remote supervision program however, funding would be required to ensure that the supervisor could travel to the registrar on a regular basis. Effectiveness of the program needs to be further evaluated to ascertain the long-term impacts of remote supervision on registrar experiences and outcomes, and outcomes for the communities in which they are providing care.
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e supervision model reduces b practice in rural locations	remote supervision on registrar experiences and outcomes, and outcomes for the communities in which they are providing care.
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practice in rural locations	outcomes for the communities in which they are providing care.
practice in rural locations	which they are providing care.
practice in rural locations	
practice in rural locations	parriers to registrars being able to
Mechanism	
	Outcome
chnology enabled supervision	The remote supervision program
take place remotely.	reduces the barriers to training in
	rural and remote locations.
	ditional support for the registrars
Mechanism	Outcome
gistrars have access to both	Registrars can access supervision
'on-the-ground' supervisor	from multiple individuals with
TI) in addition to a remote	differing domains of expertise
SEP supervisor (CTS)	supporting, and potentially
	enhancing, their training.
	rural communities with access to
	registrars
	Outcome
	Registrars can provide additional
, ,	patient care opportunities and
•	reduce the patient load for general
-	practitioners in the practice
mmunity.	location and surrounding areas.
	First Nations' registrars to train
	gistrars have access to both 'on-the-ground' supervisor II) in addition to a remote SEP supervisor (CTS) e supervision model provides ained medical specialists and Mechanism ditional medical services are ovided by the registrar with the cential to offer care options not rrently available in the mmunity.

The data obtained as part of this evaluation is not sufficient to provide a response to this proposition.

Discussion and concluding remarks

This evaluation sought to explore the impacts of a remote supervision program for ACSEP registrars using funding from the Commonwealth Government as part of the FATES funding.

The overarching finding from the evaluation was that the program afforded opportunities for registrars to undertake their training in a rural or remote location whilst also receiving quality supervision from an ACSEP Clinical Training Supervisor. The outcomes of the program are described in response to the FATES grant objectives.

Objective 1: Improve and promote a positive rural and remote medical education culture and support quality specialist medical training in rural and remote Australia

Data obtained from one-on-one interviews and the General Practice Supervisory Relationship Measure – Registrar (GP-SRMR) indicates most respondents experienced positive, supportive supervisory and educational experiences through the ACSEP remote supervision program.

Qualitative data from both registrars and supervisors indicated the mutually beneficial and positive learning environment enabled by the remote supervision experiences. The use of technology, especially video calls and video recordings, enabled registrars to continue to build their Sport and Exercise Medicine competencies while being remotely supervised.

All participants acknowledged that some amount of face-to-face, ideally at the site the registrar was practicing, was found to be beneficial to the learning, the supervisory relationship and therefore ultimately perceived to be beneficial to the patients and community. Modifications made by ACSEP to some training requirements, such as allowing some types of Workplace-based assessment's (WBA's) to be video recorded by the registrar for later assessment by a supervisor were flagged as being enablers for remote supervision success.

Specialist sport and exercise medicine training was discussed by supervisors as being "low risk" for senior registrars and supported by the requirement for the registrar to have an onsite Clinical Training Instructor (CTI). CTIs are medical specialists from other colleges (commonly Orthopaedic Surgeons and General Practitioners) who can assist with meeting training requirements onsite was identified as a crucial support for registrars to live and work rurally. CTIs provide face-to-face supervisory requirements for registrars in their senior training years and assist with completing Work Based Assessment (WBA) requirements. Acknowledgment of the key role that CTI's can provide in many of the face-to-face supervisory requirements, as well as support and mentoring in working in a rural or remote community, is paramount for the success of continuing the Remote Supervision program. Further work could explore the CTIs' perceptions of the remote supervision program to ensure their voice is captured as part of future quality improvement processes.

Objective 2: Reduce barriers and improve incentives for entering rural and remote medical practice.

Incentives and barriers to entry to rural and remote medical practice have received attention in the preprofessional and specialist medical training space in the Australian context. Barriers are typically identified aspects such as costs associated with living in a rural area, travel for training, and access to quality supervision and learning opportunities.

Travel associated with SEM training were linked to financial and personal burdens due to the extensive travel required to meet the training program requirements, such as care of Teams and Athletes. Participants identified this as a challenge but also perceived this as a necessity that had to be managed for success in the training program. As such, the registrars made accommodations to their practice and training to travel to metropolitan or large regional centres where they were able to satisfy this requirement. One supervisor from their experience working in rural settings opined *"there is plenty of sport and exercise in rural communities, maybe even more than in the city"*.

Another barrier to rural or remote practice was the requirement for a registrar to change practices after two years of training. There are few ACSEP accredited training practices outside of capital cities or major regional centres. Applicants to the ACSEP training program who are undertaking their internship or PGY2 or PGY3 years in their preferred rural or remote setting will potentially be required to move -sometimes interstate- to accept a training position with the college in their first two years of training. The option to move back to their home city is certainly possible in the senior years but requires an accredited ACSEP practice with an onsite ACSEP clinical training supervisor. A registrar could be offered a place in their preferred rural or remote setting in the first two years of training if available, but then would need to move away from this location for their senior years. The need to be exposed to teaching and supervision from multiple expert practitioners was clearly identified too. There remains a tension between ensuring adequate training via exposure to different patient demographics and supervisors, without adding to the burden of a registrar who wants to train and live in rural or remote locations.

The College is encouraged to explore flexible options for how registrars could meet the defined outcomes of the program within the one training environment to reduce these barriers to rural or remote training opportunities.

An incentive to participating in the remote supervision program was the opportunity to selfselect into the program (assuming the registrar met other pre-requisite training requirements). Participants in the current evaluation sought out rural training opportunities for a variety of reasons including family, work/life balance and a desire to 'give back' to the community by providing a service that would otherwise be difficult to access. Interestingly, these reasons are intrinsic motivators to participate in rural practice. None of the participants identified financial or other incentives as being needed to support entry to rural practice. That said, participants did identify a need to have access to some form of funding to support face-toface supervision opportunities as part of training where remote supervision is used.

It is possible that through reducing barriers to training in a rural or remote location, SEM registrars are more likely to stay in their training location or seek other rural clinical practice opportunities. However, testing this assertion would require additional longitudinal work.

Objective 3: Improve the imbalance of distribution of the non-GP specialist medical training arrangements and workforce, particularly in areas of unmet need.

The College is one of the smaller specialist medical colleges in Australia with both registrars and Fellows largely based in metropolitan settings. Subsequently, the current workforce is 'imbalanced' with respect to service provision outside metropolitan settings suggesting much of Australia qualifies as "unmet need" in the context of sport and exercise medicine. Data obtained through the current evaluation supports the use of remote supervision as a strategy to allow senior registrars an opportunity to undertake part of their training outside of a metropolitan setting.

A significant barrier to the success of the remote supervision program is the availability of a suitable physical location from which the registrar can practice. Primarily, can the registrar access onthe-ground supervision in addition to the remote supervision? Here, it is suggested that the College explore opportunities to engage with the colleges for general practice (RACGP) and rural and regional medicine (ACRRM) to identify physical locations where suitable supervision opportunities are available.

Another avenue includes considering interprofessional supervisory models that could harness the expertise and feedback of other professions who work closely with Sport and Exercise Physicians. Interprofessional supervision offers collaborative options for professions to work together as a team provide healthcare to the community. Participants supported this notion of the remote supervision program allowing registrars to work with medical and allied health professionals to improve access to care and potentially reduce the workload of medical professionals in rural and remote locations. It is important to be aware that the number of registrars participating in remote supervision will always be small and, as such, is not a panacea to workforce distribution issues in specialist medical care. However, allowing registrars to practice in a rural location as part of their training may increase the likelihood that they will establish themselves in that location postother training, seek out rural clinical or This assertion would require opportunities. additional longitudinal data to support it.

Objective 4: Attract and support Aboriginal and Torres Strait Islander registrars to grow the Indigenous workforce towards population parity.

Unfortunately, there were no data available to support any commentary on this objective. However, the structure of the remote supervision program has the potential to support Aboriginal and Torres Strait Islander registrars in their training. In particular, the remote supervision program affords Aboriginal and Torres Strait Islander registrars the opportunity to return to Country or provide care for Aboriginal and Torres Strait Islanders in other locations. The potential limiting factor will be the availability of health care services of a size and location commensurate with the ability to provide on the ground support for the registrar and suitable technology access to enable remote supervision. The College is encouraged to continue pursuing opportunities for Aboriginal and Torres Strait Islander registrars as part of the training program, one of which is the ability to leverage remote supervision in the latter years of training.

Concluding remarks

This report sets out a series of recommendations for consideration by the ACSEP should the remote supervision program continue. Much of the focus is on funding to underpin the future success of the remote supervision program. Here the college is encouraged to identify funding sources that could support the amounts required to facilitate several face-to-face supervision site visits to further enhance registrar learning and support in the remote supervision setting through the program.

However, it should be noted that the participant experience captured in the current evaluation supports the value of the remote supervision program as a training opportunity where both the registrar and supervisor are judiciously selected.

The value of the remote supervision program also extends to the service provision in communities who would otherwise have to travel significant distances to access sport and exercise medicine care, and support services provided by medical and allied health professionals in those communities. That is, the benefits go beyond just the training experience.

For the last word, we quote Wearne (Wearne, 2016, p. 333)):

"The clinical, personal and professional benefits of supervision are determined more by the quality of interaction between supervisors and registrars than by the degree of physical proximity."

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