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# Empowering registrars: Practical strategies for completing and publishing research

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In November 2010, the Subcommittee for Postgraduate Education and Training (Medical) under the Health Professions Council of South Africa (HPCSA) implemented new regulations requiring the completion of a research component as a condition for specialist registration. The registrar–consultant relationship is central to the success of this research training (research assignment). To achieve sustainable, high-quality outputs, this dynamic must evolve from a traditional gatekeeping role, focused on oversight and control, to an innovation-driven mentorship model. Despite regulatory stipulations of ~600 notional hours for Master of Medicine (MMed) research, evidence suggests registrars face significant barriers, including inadequate supervision, time constraints and limited research experience. In this perspective, we reflect on the second part of a clinical research supervision workshop aimed at enhancing supervision capacity for registrar research, with a focus on Memoranda of Understanding (MoUs) in supervisory agreements and mentorship strategies to strengthen research oversight (the first part of this workshop was previously published in the Journal of the College of Medicine South Africa). By addressing these areas, we seek to improve research quality across South African institutions and help develop a new generation of skilled clinician-researchers. Clinicians as supervisors, play a pivotal role in guiding registrars through their academic and professional journeys. Best practices include fostering open communication, setting clear expectations, and providing consistent feedback, supported by institutional resources and training to enhance supervisory skills.

**Keywords.** Master of Medicine (MMed); registrar; Memoranda of Understanding (MoUs); research mentorship; capacity development

Afr J Health Prof Educ 2026;18(2)e3325. https://doi.org/10.7196/AJHPE.2026.v18i2.3325

Healthcare and medical research complexities, driven by technological advancements, evolving healthcare demands, and shifting global health priorities, present significant challenges. Master of Medicine (MMed) programmes play a pivotal role in addressing these issues by equipping specialists with advanced clinical skills, research expertise, ethical reasoning, and leadership qualities, thereby enabling them to navigate and contribute effectively to the evolving healthcare landscape.[1]

One of the primary enablers of high-throughput of MMed research is primarily dependent on good mentorship and supervisor-and-student relationships.[1] In this context, the supervisor-student relationship also refers to the registrar-consultant and/or registrar-clinician relationship. As both clinicians and registrars must balance research activities with demanding clinical duties, a memorandum of understanding (MoU) can serves as a valuable foundational document to formalise this registrar-consultant relationship.[2] This document helps promote collaborative engagement between the registrar and their consultant supervisor(s). Although non-binding, MOUs provide a structured framework that delineates roles, responsibilities and expectations.[3] In this regard, MOUs can play a pivotal role by establishing preliminary, adaptable rules of engagement without the constraints of formal, legally binding contracts.

The evaluation of specialist trainees' research projects is based on several key criteria, including the demonstration of comprehensive theoretical knowledge, the application of robust research methodologies, and the use of critical reasoning skills that reflect competence in data analysis.[4] The research findings must be presented in the form of a dissertation that complies with accepted scientific standards.[5]

Beyond the conventional thesis submission, the successful completion of the MMed not only enhances specialisation within a medical field but also contributes significantly to medical knowledge through peer-reviewed publications. The process of transitioning MMed research from the conceptual stage to a publishable, peer-reviewed standard presents notable challenges. For many registrars, the MMed research assignment represents their first foray into the world of research - a venture into uncharted waters.

Regulatory bodies, including the Health Professions Council of South Africa (HPCSA) and the South African Committee for Higher Education, mandate a minimum of 600 notional hours (~75 working days) for the MMed research component.[6] However, some researchers argue that this may extend to 10 000 hours.[7] Unpublished data suggest 900 notional hours (24 working weeks), while another study estimates an average completion time of 31.6 months.[8] Producing high-quality research requires sufficient

time to refine research questions and generate robust data,; however, time remains a major constraint owing to the dual demands of clinical training and research.

Despite the importance of high-quality research in clinical practice, many studies are considered limited in scope and fail to extend beyond the institutional degree requirements. Approximately half of all medical research is published, while only 18 - 23% of medical theses are published in peer-reviewed journals.[9]

In South Africa (SA), the conversion rates for MMed dissertations to journal publications range between 30% and 60%. An analysis of 116 MMed dissertations revealed an overall conversion rate of 37.5%, while dissertations deemed publication-ready achieved a significantly higher conversion rate of 60.3%.[9] Of the 135 publications across 80 equally local and international journals, the SAMJ led with 17 papers, while 10 other local journals each published multiple works. Accreditation was near-universal at 92.5%, with only six single-publication journals lacking DHET approve.[8] Even among dissertations that achieve publication, concerns over scientific rigour and the burden of false evidence persist, underscoring the need for mentorship and meticulous methodology.[9] The low conversion rates of MMed dissertations to journal publications highlight critical challenges, including limited research training, the need for mentorship and competing clinical responsibilities.

The first part of our workshop series, 'Optimising registrar research supervision: Quality, conflict management and best practices', focused on enhancing supervision quality, managing conflicts, and guiding students in scientific rigour and methodology.[10] It was published as a separate article to address those themes in depth.[10] This second paper builds on that foundation by exploring complementary aspects of research supervision not addressed in the first part, namely the use of MoUs in supervision, strategies for completion and publishing MMed research, and the evolution of the supervisor's role into mentorship. We present this follow-up paper to provide insights from the second half of the workshop while avoiding duplication of content covered in the first article.

## Workshop design and delivery

The content in this paper is derived from the second part of a clinical research supervision workshop series. The workshop was conducted over two consecutive half-days and hosted by the Faculty of Medicine and Health Sciences (FMHS) Research and Internationalisation Division's Registrar Research Support Office at Stellenbosch University, Cape Town. It was designed as an interactive training session aimed at strengthening registrar research capacity by improving supervisory practices. Workshop activities included short lectures, facilitated group discussions and case-based exercises. The sessions covered four main topics: (*i*) establishing clear supervisory agreements through MoUs; (*ii*) obtaining research ethics approval; (*iii*) practical strategies to support registrars in completing their research projects and publishing their findings; and (*iv*) re-envisioning the supervisor's role as that of a mentor and coach within the research process. These topics were selected to address well-known challenges in the MMed research process, including poor communication of expectations, project delays, and limited guidance on writing for publication.

The workshop was developed and facilitated by the lead author. The speakers comprised a team of experienced clinician-researchers and research support staff, all actively involved in postgraduate training. The facilitator and speakers were also the authors of this paper and contributed their perspectives as research supervisors and support professionals. We acknowledge that this dual role may introduce bias; accordingly, our analysis focused on our own reflections on workshop outcomes rather than on participants' contributions**.** Approximately 20 attendees participated, including consultant specialists (MMed supervisors) and senior registrars from various clinical departments. The inclusion of supervisors and registrars allowed for rich dialogue from multiple perspectives. Participants were invited through the FMHS Registrar Research Support Office and represented disciplines such as Surgery, Family Medicine, Pediatrics, and others, thereby contributing diverse experiences. Although, no formal demographic data were collected, anecdotal observations suggested that the group ranged from early-career consultants to registrars nearing project completion.

### Ethical considerations

This workshop reflection was considered a quality improvement and educational activity; therefore, ethics review and approval were not required. The content of this paper reflects the perspectives of the authors (who were the facilitator and speakers), and no participant perspectives were included.

## Establishing partnerships through memoranda of understanding (MoUs)

In academic research, MoUs are valuable tools for building partnerships and providing a clear, adaptable framework tailored to specific needs. In the SA MMed context, where resource constraints, institutional variability, and competing clinical duties are prevalent, MoUs can outline study aims, objectives, feasible milestones, terms of collaboration and intellectual property (IP) provisions.[2,11]

For example, partnerships aimed at enhancing MMed research and training can draw inspiration from the MoU signed in July 2007 between the Royal College of Surgeons in Ireland (RCSI) and the College of Surgeons of East, Central, and Southern Africa (COSECSA).[12] This international MoU facilitated improvements in surgical care, education, training and examinations across the region, with the collaboration program commencing in April 2008.[12] Although the agreement operated at an institutional level, it illustrates how clear, written commitments can drive successful outcomes. By analogy, an MoU between a registrar and supervisor can help ensure alignment on the project's goals and process.

At the outset, the registrar and supervisor should finalise and sign an MoU that clearly defines the research question and scope, along with roles, timelines, resources, and any plans for publications and authorship. Once the MoU is in place, the registrar should promptly secure ethics approval to avoid delays associated with this common bottleneck. Throughout the research process, both parties should maintain regular meetings to track progress against the MoU's milestones, discuss challenges or delays openly, and adjust the plan if needed. The registrar should keep the literature review up to date and document all data collection with proper backups, while the supervisor should provide timely feedback on drafts and analyses. As the project progresses towards completion, the MoU should guide the final stages: the registrar drafts the dissertation, submits it for internal review by the supervisor(s) within an agreed timeframe, prepares any manuscripts if publication is intended, and meets the target thesis submission date to ensure timely completion. By following these steps, the registrar and supervisor establish a shared roadmap for the MMed research journey.

Studies have shown that formalising the supervisor-student partnership in an MoU or similar 'learning contract' can address inadequate supervision

and set a more professional tone in the student–supervisor relationship.[11-15] Our workshop experience similarly highlighted the importance of MoUs, as several colleagues indicated plans to draft or refine such agreements for their projects, reflecting the perceived value of this structured approach.

## Practical tips for getting MMed research completed and published

Registrars undertaking the MMed research assignment bring diverse experiences, ambitions and challenges. Although those with prior research training, such as a Bachelor of Science Honours or Master of Science degree, may find the process more manageable, others without such backgrounds may perceive it as daunting. Supervisors play a vital role in bridging this gap and equipping registrars across this spectrum with essential research skills and fostering a mindset of clinical reasoning and innovation.

For novice clinician-researchers, starting with 'low-hanging fruit' is often advisable. Retrospective chart reviews, existing dataset analyses, or other low-cost observational studies are typically well-suited to a first project. In 2020, Grossman *et al*.,[16] analysed (*n*=307) MMed mini-dissertations and found that the majority were observational studies (retrospective reviews, cohort studies and case reports), which are more feasible within residency timeframes. Focusing on descriptive or simpler analytic methods can make the project less daunting while still yielding publishable data. Registrars should also take advantage of structured research training and available tools. Many SA universities including the FMHS at Stellenbosch University offer clinical research protocol-writing and manuscript development short courses aimed at supporting guide health professionals. Self-directed learning is also valuable: using databases like PubMed for literature searches, accessing YouTube tutorials for statistical software guidance, and utilising templates or examples for protocols and theses. Institutional support services such as writing centres or biostatistical consulting units, should be engaged early as they can greatly improve the quality of the work.

Being aware of international research reporting standards is essential. For example, when conducting an observational study, the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)[17] should be consulted; for a clinical trial, CONSORT would apply. Aligning research with such guidelines from the outset ensures rigour and standardisation and facilitates the preparation of a publication-ready manuscript. Emphasising these standards in the workshop underscored to participants that compliance with EQUATOR Network guideline[18] is not merely an academic exercise but a key step enhances the credibility and clarity of their research.

Selecting reputable, indexed journals (and avoiding predatory publishers) is also important; tools such as the Journal/Author Name Estimator (JANE) can assist in identifying suitable journals based on manuscript content.[19] Over time, perseverance – combined with adherence to quality and ethical standards – significantly increases the likelihood of publication. If a manuscript is rejected, resubmission to alternative journals can enhance the chances of successful dissemination. At the stage of dissemination, awareness of institutional resources is critical. Leveraging institutional support, such as writing laboratories to develop a writing culture, and responding promptly to reviewer feedback can enhance publication chances.

## The evolving role of the supervisor: from oversight to mentorship and coaching

The traditional role of research supervisors as gatekeepers - tasked primarily with ensuring academic compliance and methodological rigour - is no longer sufficient in the context of contemporary MMed research. Today's mentorship paradigm requires supervisors to act as catalysts for creativity, stewards of persistence, and architects of their students' scholarly identity and success.[20] To redefine mentorship, supervisors need to move beyond outdated practices and foster an environment in which research is experienced as a journey fuelled by curiosity, collaboration, and growth.[21] For example, a practical approach involves teaching registrars to develop well-designed research protocols that function as roadmaps for their projects. Supervisors can guide them to "start with the end in mind" by working backwards from key milestones such as exams or manuscript deadlines, and by developing realistic timelines that allow for iterative refinement. The art of research lies not in the first draft but in the evolution of thought. Research should therefore not be seen as an insurmountable task, but as a process of iterative learning and intellectual discovery.

Research is not merely a task to complete but a lifelong way of thinking - an exploration of ideas, evidence and innovation. Supervisors are uniquely positioned to help registrars embrace this mindset, transforming challenges into opportunities for growth. By mentoring with intention and creativity, supervisors can shape registrars not only as researchers but as leaders equipped to tackle the pressing issues of the future.

The MMed project, though initially intimidating, can become a journey of discovery. Supervisors play a pivotal role in bridging the gap between intimidation to aspiration and achievement, ensuring that the process is both enriching and transformative. At its core, research mentorship is a partnership in which registrars are collaborators and future colleagues, rather than merely students.[21] Together, supervisors and registrars can redefine research mentorship, leaving a legacy that extends far beyond a single project or publication. A renewed approach to research mentorship is therefore needed - one that integrates the methodological rigour of science with the reflective craft of scholarly writing, allowing data-driven inquiry to be communicated with clarity, coherence and purpose.[22-23]

As registrars navigate the labyrinth of writing, they should be reminded that manuscripts are living documents, born from the heart of their findings. Starting with tables and results can provide a compass for structuring the narrative. Every rejection letter, editorial comment and reformatting request should be viewed as a step closer to excellence. The process of publication is therefore as much a test of perseverance as it is of precision.

## Towards a common goal

The future of research lies in redefining mentorship as a collaborative and empowering relationship. Supervisors must view registrars as partners in innovation, encouraging them to push boundaries with courage and creativity.[21] By embracing this paradigm shift, the consultant-registrar relationship can become a cornerstone of clinical research and scientific progress, ensuring that both mentor and mentee leave a lasting legacy of excellence.

## Recommendations

Drawing on the workshop discussions and subsequent reflection, we propose several recommendations to strengthen the MMed research process. These recommendations align with the challenges and solutions identified:

### 1. Clinicians should openly share their research experiences (successes and struggles).

Supervisory practices can be strengthened through deliberate disclosure of

supervisors' own experiential research journeys, including both challenges faced and how they were overcome. This approach demystifies the research process by situating abstract methodological principles within real-world contexts, thereby enhancing relatability for registrars. Discussing obstacles such as failed experiments or manuscripts that underwent multiple rejections before publication - and the strategies used to overcome them provides valuable lessons and encourages registrars to persist in their efforts. When registrars hear their senior clinicians candidly talk about their mistakes, it can reduce intimidation towards research. We recommend that departments create forums such as 'research roundtable' meetings where seniors share these experiences, thereby normalising the ups and downs of research.

### 2. Encourage collaboration and co-authorship among registrars and consultants.

Promoting collaborative research projects and co-authorship opportunities can enhance registrars' motivation to publish.[24] Working in teams enables registrars to share ideas, distribute workload and learn from each other. Interdisciplinary collaboration, in particular, fosters epistemic synergy through iterative knowledge exchange, equitable task allocation, and integration of diverse expertise, thereby strengthening methodological rigour and analytical robustness. This approach can improve the quality of outputs and increase the likelihood of publication. In addition, early co-authorship experiences provide recognition for registrars and build their confidence. We recommend that training programmes actively facilitate matchmaking for collaborative groups (for example, pairing a novice researcher with peers working on related topics, or encouraging registrars to join existing projects as junior collaborators). The workshop's group exercises illustrated this point: when registrars from different specialities brainstormed together, they generated creative solutions and even identified opportunities for cross-departmental studies.

### 3. Formalise expectations and training for supervisors

We recommend institutions develop guidelines or training modules for consultant supervisors on best practices in research supervision. This could include guidance on establishing MOUs, mentoring and coaching techniques, conflict resolution strategies, and providing constructive feedback. By professionalising the role of the supervisor (akin to faculty development programs), institutions acknowledge that good mentorship is a skill that can be learned and improved. Departments should recognise and reward effective supervisors, thereby incentivising a culture that values mentorship in parallel with clinical and research excellence.

### Study limitations

This work has several limitations. First, it is a reflection on a single workshop conducted at one institution, which may limit generalisability. The challenges and solutions identified, while likely common to many SA training contexts, may not capture all nuances present in other settings. Second, we did not collect systematic data from participants (e.g., pre- and post-workshop surveys or long-term outcomes); therefore, evaluation of the workshop's effectiveness is based on subjective facilitator observation and informal feedback. This introduces potential bias, as the authors, as facilitators of the event, may be inclined to view the outcomes more positively. We have attempted to mitigate this by clearly distinguishing our own interpretations throughout the paper and by acknowledging our positionality. Third, given the nature of this 'opinion paper' style paper, the outputs are narrative rather than quantitative. There is a risk of confirmation bias, in that we, as champions of certain strategies (like MoUs or mentorship), may have focused on evidence and anecdotes supporting these approaches while under-representing counterpoints. Finally, the recommendations proposed while grounded in literature and experience, have not yet been empirically tested within this context – they should be considered suggestions for practice improvement rather than proven interventions. Future work is needed to formally assess the impact of implementing these strategies on registrar research outcomes.

### Future Directions

Building on this reflective analysis, future research could examine the impact of structured supervisory interventions on MMed outcomes. For example, formal studies should evaluate whether training programs for supervisors (incorporating MoUs, mentorship skills, etc.) lead to improvements in registrar research quality, higher completion rates, or increased publication success. It would also be valuable to explore barriers and enablers in converting MMed dissertations into high-quality publications – potentially through multi-institutional surveys or qualitative studies with recent graduates. Another important research direction is assessing the effectiveness of collaborative, multidisciplinary supervision models (such as co-supervision across departments) in strengthening scientific rigour and reducing the burden on individual supervisors. Investigating these questions can provide evidence to inform policy and programme development, ultimately contributing to long-term research capacity building. We also recommend that future workshops incorporate follow-up tracking of participants' progress to enable more objective assessment of training initiatives.

## Conclusion

In conclusion, this paper contributes to the field by demonstrating how a targeted educational intervention – a clinical research supervision workshop – can address key challenges in the MMed research process and inform practice changes. Through reflection on the second part of the workshop, we highlight practical strategies such as implementing MoUs to formalise the supervisor–registrar partnership and adopting a mentorship-oriented approach to supervision. We also present a set of recommendations for fostering a more supportive research environment, from individual mentorship techniques to institutional policies. By shifting the registrar–consultant relationship to one rooted in clarity, collaboration, and mutual growth, MMed programs can better support registrars in completing their research projects successfully and disseminating their findings. Ultimately, embracing these strategies may help cultivate a sustainable culture of clinician-researchers and promote scientific excellence within postgraduate medical training in SA.

**Data availability statement**. None.

**Declarations.** None.

**Author contributions.** AE conceptualised and facilitated the workshop, as well as the reflective piece. AE wrote the first draft and circulated it to RD, AC, and LLVdH. RD, AC, and LLVdH were speakers at the workshop and contributed to the writing and formal editing of the draft.

**Acknowledgements**. None

**Funding**. Dr Obasa is a recipient of the National Research Foundation incentive for rated researchers funding.

**Conflict of interest**. None

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*Received 27 March 2025. Accepted 19 August 2026.*