

We can do it: Improving research culture and capacity in medical radiation sciences

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Research is paramount to medical radiation professionals (MRPs). It ensures we keep moving forwards with rapidly advancing technology, while providing a high-quality, safe and efficient service for our patients. The key to research being active in our departments is to ensure there is a healthy research culture and an achievable plan to build research capacity. Building the capacity of allied health professionals to undertake research has its challenges. Overcoming these has been considered an international priority for the past decade.¹

MRPs often attribute a lack of time, skills, leadership support, heavy workload and an unsupportive workplace culture to their inability to engage in research, which is not dissimilar to barriers faced by other allied health professionals.^{1,2} Conversely, the need to address gaps in clinical practice, build the evidence base to inform service delivery, provide the best possible care for patients, improve job satisfaction and enhance career opportunities are among the most frequently reported motivators for undertaking research.¹ Also, it is worth mentioning that the benefits of MRPs conducting research span beyond the individual's professional development. Health organisations with a strong research culture are associated with greater service efficiencies, increased staff retention and reduced patient mortality rates.²

Several strategies have been proposed to build allied health research culture and capacity, including mentoring, managerial support, research skills training, protected time, grant funding and creating dedicated research positions.^{1,3} In my opinion, access to an approachable and accessible research mentor is probably the most valuable resource to have available. Research mentors can assist novice researchers through all the research stages: from idea conception, through obtaining ethical approval, to preparing a manuscript for publication. I have seen the significant impact that a research mentor can have on a medical imaging department. For example, one medical

imaging department experienced an increase in MRP research outputs from nine to 21 activities over a four-year period following the employment of a senior radiographer who was undertaking a PhD (See Figure 1). Subsequently, managers of health organisations should be encouraged to incorporate such roles within their medical imaging and radiation therapy departments. This could be achieved by the managers of health organisations supporting and encouraging medical imaging staff to undertake higher-degree research programs. Clinical leaders could also seek opportunities to undertake research themselves, thus serving as a role model within the department for engaging in research. Clinicians who have successfully participated in research should be encouraged to support their peers to build research skills that would then be used to engage in further research and build internal capacity. That said, it is likely that appointing a research mentor within a local medical imaging or radiation therapy department could pose a challenge, as there may not be a suitable person to fill the role. One way of addressing this issue could be to utilise external mentors. These might exist within another allied health profession or be based at a university. In short, medical imaging and radiation therapy departments should commence identifying potential research mentors, both internal and external, as they provide a valuable means of building research capacity.

Another strategy to improve research capacity, capability and culture I find highly beneficial is protected research time. One mechanism to achieve it is through funding initiatives, such as research grants.⁴ Research grants have been shown to significantly increase clinicians' research capacity and outputs, often manifested as an increase in publications. Unfortunately, as highlighted in the paper by Dennett and colleagues³ published within this edition of the journal, MRPs have the least amount of interest in applying for research

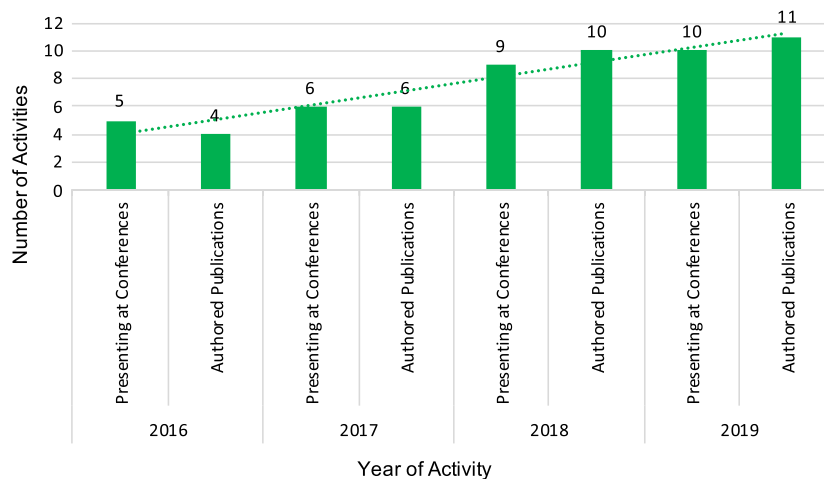


Figure 1. Histogram representing radiographer research output activities from Logan Hospital Medical Imaging Department between 2016 and 2019

funding. Some MRPs may even feel that the importance of their projects might not qualify for applying for large research grants. This then presents a dilemma, whereby without funding, especially within a fiscal environment, creating protected research time is challenging. Therefore, it is pertinent that MRPs are made aware that funding, however large or small (e.g. AUD \$5000-10000), can provide backfill to allow MRPs protected time to conduct research during their usual clinical time, alleviating their heavy workload. The protected research time could be undertaken in a number of formats to allow flexibility in the workplace. For example, the clinician could take four weeks leave in one block, in multiple shorter blocks or part-time (e.g. one day a week for 20 weeks). Research activities that could be undertaken within this protected time include writing an ethics application, collecting and/or analysing data, undertaking a systematic review and writing up research findings for publication. One challenge to be mindful of is the potential for research progress to stall when the backfill period is over. Strategies should be implemented prior to the backfill period finishing to maintain research momentum.

Protected research time hinges on managerial support and planning to ensure that MRPs can access leave. Finding suitable leave cover could be accomplished by utilising a casual staff member or a locum. An additional strategy to generate protected research time is to embed a dedicated research position into a medical imaging or radiation therapy department, as acknowledged by Dennett and colleagues³. Such a position is traditionally held by one clinician, such as a research fellow.^{5,6} A successful example of this initiative exists in Queensland, where in 2009, a state-wide radiation therapy research

fellow position was introduced. Ward and colleagues⁶ report that this research fellow position has contributed to an increase in research outputs, including journal publications. A novel suggestion, however, could be to develop a rotating role where clinicians alternate between clinical roles and protected research time, allowing them to undertake individual or team-based research projects. This strategy not only has the potential to build internal research capacity but also is sustainable and has the added benefit of influencing research culture. For the reasons mentioned above, health organisations should consider ways to provide time for clinicians to complete research projects as part of their core business.

In summary, health services want to improve outcomes for patients. A productive research culture within health organisations may help to achieve this. Evidence suggests that research mentors and protected research time are valuable strategies to build research capacity, increase research outputs and create a positive influence on a team's research culture. The article by Dennett and colleagues³ is a timely reminder that while progress is being made, some radiographers are still not confident in undertaking research despite the body of evidence suggesting that they are capable. Leveraging off the existing allied health research resources and support may benefit the advancement of medical radiation research. To those MRPs with an interest in research, it is very important to get involved. A worthwhile first step is to consider everyday practices and question whether they are based on current best evidence, tradition or subjective experience. A simple framework that can be used to commence investigating a clinically relevant question is the 5As⁷: **Ask** a clinical question, **Acquire** appropriate

evidence, **Appraise** selected evidence, **Apply** the information to your clinical context and **Assess** the effectiveness and efficiency with which the process was carried out and think of ways to improve your performance in the future.

Competing Interests

The author declares that they have no competing interests.

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