Translating radiography research into practice

Mark McEntee, University College Cork, Ireland

Peter Hogg, University of Salford, UK

This editorial was written between April and June 2020, during the initial phase of the Covid-19 global pandemic. The pandemic wreaked havoc across the world, and radiographers have been on the frontline throughout this time. Countless radiographers have been exposed to the virus, tens of thousands of radiographers globally have probably been infected and tragically some have died. We would like to acknowledge those radiographers who gave their life in the service and care of others.

In this period, we witnessed a highly unusual occurrence which has relevance to this special issue. During the crisis, the speed with which research was conducted, published and translated into practice was accelerated compared with what occurs normally. It is worth noting that *Radiography* played its part, to help during the Covid-19 crisis. For instance, *Radiography* speeded up processing and publication of articles about Covid-19 and made them free to access. *Radiography* also published a Guest Editorial about free web-based resources about Covid-19 for radiographers[1].

Traditionally, from the point of conception, research can take many years to be used in practice[2 3]. This problem has been recognised for a long time and some countries have even put in place formal strategies to speed up the translation process. One example can be seen within the UK's Research Excellence Framework (REF), in which providing evidence of translation (known as research 'impact') is valued as important as the research activity itself [4]. Translating research is now acknowledged as an academic discipline and is referred to as 'implementation science'. It is defined as "the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services"[5]. Implementation studies typically employ mixed quantitative-qualitative designs and trans-disciplinary research teams. Thus, it is no surprise that this Special Issue exemplifies those qualities as we have drawn on experiences from professionals outside and within our field.

This Special Issue contains a range of article types in order to capture different perspectives about translation as well as to illustrate a wide range of translational activities. We have purposefully extended the style of writing beyond that traditionally associated with this journal to add a richness that would otherwise be lost. We therefore invited authors to contribute personal experiences and journeys, narrative review articles and research articles. Four aspects of translation are considered, the use of research in teaching, the use of research in clinical practice, translation of research into a start-up company[6] and the principles behind using evidence in practice. With the latter in mind we include valuable articles about REF and impact[7] and about evidence-based healthcare[8]. For the use of research in teaching, there is a Guest Editorial about OPTIMAX[9] and associated with this are five research articles[10 11 12 13 14], to illustrate how students can engage in research to learn about the research process and produce outcomes. There is an interesting article outlining how crowd sourcing can help inform curriculum design[15] and a pan-European article offers a perspective on radiographer

research into radiation protection and its implementation[16]. Several articles have a clinical focus, for example 'Always Events' are explained; this paper shows how research can be conducted locally and the results implemented at speed[17]. A personal reflection explores the challenges faced in trying to use evidence in practice in a very busy clinical department[18]. Further articles discuss change and evidence-based approaches[19], there is a discussion asking questions about evidence-based approaches in radiography[20], there is a comparison of radiography against other healthcare professionals in relation to impact / research translation[21] and finally there is an article about dose reduction in computed tomography[22].

In editing this Special Issue, it was clear that translational activities by radiographers are broad and delve into many other domains that might be considered the remit of other disciplinary fields such as education, physics, sociology and to a certain extent, business development. It was also clear that we are a global research community that is having an impact through translating our research into practice. We can all learn from each other and the future holds great promise, but it will require researchers and practitioners to become leaders, and leaders to become mentors.

We should like to end our editorial by returning to Covid-19. Unlike other issues, special issues are created against a tight timescale and authors are invited by the special issue editors to submit an article on a specific topic and by a set deadline. It is a highly pressurised way of working at the best of times as all the articles must have been processed to completion before the issue can be published and to achieve this, timely input is required from authors, editors and reviewers. As editors, due to Covid-19, we know that many of those who contributed or reviewed articles were under a range of clinical, academic and social pressures which undoubtably distracted them psychologically and in terms of the time they had available to complete the assignment. Against this backdrop, we should like to say a huge thank you to the authors and reviewers for undertaking their work, to a high standard and against the odds. We hope this special issue is of interest to clinical and academic staff, because translating research into practice should be of paramount importance for improving patient management and wellbeing.

---

[1] P. Hogg, K. Holmes, J. McNulty, D. Newman, D. Keane, C. Beardmore, Covid-19: Free resources to support radiographers. doi.org/10.1016/j.radi.2020.05.0021078-8174/

[2] Z. Morris, S. Wooding, J. Grant, (2011), The answer is 17 years, what is the question: understanding time lags in translational research, Journal of the Royal Society of Medicine, 104, 12, 510-520, 10.1258/jrsm.2011.110180

[3] https://www.universityaffairs.ca/opinion/in-my-opinion/closing-17-year-gap-scientific-evidence-patient-care/; accessed 17-6-2020

[4] https://www.ref.ac.uk/media/1092/ref-2019_01-guidance-on-submissions.pdf; accessed 17-6-2020

[5] M.S. Bauer, L. Damschroder, H. Hagedorn, J. Smith, A.M. Kilbourne (2015). An introduction to implementation science for the non-specialist. BMC psychology, 3(1), 32.

[6] M.E. Suleiman, B. Hallinan, M.F. McEntee, Perfecting Detection Through Education, RADIOGRAPHY-D-20-00105

[7] E. Sutton, The increasing significance of impact within the Research Excellence Framework (REF), https://doi.org/10.1016/j.radi.2020.02.004

[8] A. Brettle, Implementing evidence-based practice: a guide for radiographers, RADIOGRAPHY-D-20-00087R1

[9] P. Hogg, F. AlrehilyF, C. Sa dos Reis, C. Bussink, H. Erenstein, M. Voet. Inspiring radiographers to engage in research, https://doi.org/10.1016/j.radi.2020.04.006

[10] C. Sá dos Reis, F. Soares, G. Bartolia, K. Dastanc, Z.S. Dhlaminid, A. Hussaine, D. Kroodef, M.F. McEntee, N. Mekis, J.D. Thompson, Reduction of visual acuity decreases capacity to evaluate radiographic image quality, https://doi.org/10.1016/j.radi.2020.04.012

[11] F. Alrehily, A. Alanezi, G. Alsady, M. Benqlilou, ... J. Coward, The effect of added fat on the accuracy of Cobb angle measurements in CT SPR images: A phantom study

[12] H.G. Erenstein, D. Browne, S. Curtin, R.S. Dwyer, ... A. England, The validity and reliability of the exposure index as a metric for estimating the radiation dose to the patient

[13] C. Buissink, M. Alrowily, C. Dougoud, J. Linneman, M. Lirot, N. Mzobe, A.K. Tootell, A Heij van der-Meijer, Impact of gonad shielding for AP pelvis on dose and image quality on different female sizes: a phantom study. RADIOGRAPHY-D-20-00042R1

[14] J.R. Tugwell; N. Alresheedi. H. Al Hillawie. I. Kanu. I. Roekens; J. Xiao. M. Voet, For X-Ray shoulder imaging, to what extent does patient positioning, field of view, grid use and tube filtration affect breast dose? RADIOGRAPHY-D-20-00008

[15] J. St.John-Matthews, L. Robinson, F. Martin, P. Newton, A. Grant, Crowdsourcing: A Novel Tool to Elicit the Student Voice in the Curriculum Design Process for an Undergraduate Diagnostic Radiography Degree Programme. RADIOGRAPHY-D-20-00040R1

[16] G. Paulo, Radiographer research in Radiation Protection: National and European perspectives, RADIOGRAPHY-D-20-00063R1

[17] L. Harding, P. Park, T. Richardson, C. Reed, S. Taylor, J. Tolley, L. Singleton, M. Thorniley, Always Events®...just another quality improvement tool...or is it? RADIOGRAPHY-D-20-00068

[18] J.F. Kelly, Translating research evidence into clinical practice within a breast imaging unit - a personal reflection, RADIOGRAPHY-D-20-00028R1

[19] Z. Munn, A. McArthur, G.T Mander, C.J. Steffensen, Z. Jorda, The only constant in radiography is change: a discussion and primer on change in medical imaging to achieve evidence-based practice, RADIOGRAPHY-D-20-00103

[20] Z. Mun, Why isn't there an evidence-based radiography? Reflections and a call to action, RADIOGRAPHY-D-20-00104

[21] L.L.D. Michele, M McEntee, K Thomson, B Kenny, W Reed, Knowledge translation: radiographers compared to other healthcare professionals, RADIOGRAPHY-D-20-00059

[22] S. Joyce, O.J. O'Connor, M.M. Maher; M.F. McEntee, Strategies for dose reduction with specific clinical indications during Computed Tomography. Radiography McEntee, RADIOGRAPHY-D-20-00117