BIR Publication - Innovations in Imaging and Radiotherapy | A more connected world

Overview

Modern technology has enabled advances in radiology services that many of us didn't imagine even ten years ago. Mobile diagnosis and treatment, and innovations such as teleradiology, offer remote locations access to radiology services previously not available. Are these services a way forward in the 2020s to offer a more connected service in your country? What are the challenges to implementing these services? Or do you have other innovative ideas for a more connected world in 2021 and beyond?

Question 1
How do you make sure that hard-to-reach communities have access to imaging and/or radiotherapy?

Equitable access for patients has always been a significant issue for the profession. Limited funding is available to attract suitably qualified health professionals, to remote locations. The largest obstacle is the provision of suitably qualified professional to operate and run the x-ray equipment.

In Australia, given distances to travel from one rural community to another, Licensed X-ray Operators (LXOs) play a crucial role in delivering basic imaging services to rural and remote communities where it is not economically feasible or sustainable to employ a qualified Radiographer. This type of operator does not exist in the radiation therapy sector.

Health care professionals (HCPs) that choose to become LXOs such as doctors, nurses, paramedics, administration and support staff, are provided Basic Radiography Training program through select universities and education providers. The program consists of pre-reading and a 2-4-day face to face workshop which incorporates an assessment process. Successful completion of the assessment results in a certificate used for application for a limited radiation licence (basic) to use x-ray equipment in areas where a qualified radiographer is not present.

The HCPs are under direct supervision of qualified radiographers. Any images of x-rays taken of a patient are sent via teleradiology to their supervising radiographer at a distant location for approval.

Question 2
How are you ensuring that you have enough capacity to cope with demand for imaging and/or radiotherapy in your country?

Educational institutions conducting medical imaging and radiation therapy qualifications are increasing the intake of students into their programs to ensure workforce capacity. The main challenge is to ensure there are enough clinical spots for training for the increased intake. To mitigate the limited clinical positions, universities are engaging with equipment vendors. They are utilising both physical hardware and virtual software for teaching fundamentals in both equipment and patient positioning as well as in radiation therapy planning. Online theoretical teaching through various portals has supplemented the physical and virtual software to ensure students are supported with theoretical knowledge, clinical expertise and research capabilities to cope with the demand. Clinical placements through various types of institutions such as large urban hospitals,

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rural placements, Children's hospitals and trauma centres have been key to maintaining students' interest in the profession.

Expansion of current imaging services (CT, MRI scanners) to include some health services at low to no cost are essential to support increased workload demands across the emergency department, inpatient and outpatient services. Introduction of new technology has also seen an increase in cross hybridization of the workforce.

Continuous advocacy by the professional body with external stakeholders seeks to ensure that there are planned FTE increases for a sustainable workforce to support the full operation of these services.

Question 3
How has the COVID-19 pandemic changed the way imaging and/or radiotherapy professionals work in your country?

Imaging and radiation therapy professionals have always been up to date with new technology and the use of new technology. The COVID-19 pandemic has been a reminder that infection control is significantly important in a health care environment. This has exposed challenges in systems around cleaning and disinfecting surfaces, education of staff as well as highlighting the strain on limited resources and tight budgets. Clinicians are now more aware of clinical hygiene, the correct use of PPE, COVID-19 safety training compliance and managing students and patients.

The COVID-19 pandemic has also resulted in re-assessment of how quickly technology can be rolled out, how structured teams can work together over different shifts and how remote planning can occur effectively in radiation therapy. The use of platforms such as teams and zoom have enabled continued communication and operations in an effective manner.

Question 4
What role do you think teleradiology will play in your country in the coming years?

Teleradiology and outsourced after hours radiology reporting services will continue to play a significant role in ensuring remote and rural communities receive timely reports and diagnostic services. With the infrastructure and further opportunities increasing, it is anticipated that teleradiology will only become a larger part of medicine in the future both locally and internationally.

The combination of teleradiology and the electronic health record (My Health Record) is improving health care services and service delivery for both patients and healthcare professionals.

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