

Provision of a consistent national approach to radiation therapy workforce protection measures in Australia during the COVID-19 pandemic

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Abstract. Healthcare workers are at the frontline managing COVID-19 patients with transmission of the COVID-19 virus to healthcare workers evident in many Australian states. Minimisation of this spread is vital to protecting the healthcare workforce with individual organisations detailing best practice for infection and control. However, interpretation and implementation of infection control guidelines is varied across Australian Radiation Therapy Departments, highlighting inconsistencies. Strong leadership, quality communication and clear direction is required during this crisis to ensure that radiation therapists receive all necessary support and resources required to maintain safety and well-being during the COVID-19 pandemic.

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Introduction

Radiation therapists are frontline healthcare workers responsible for delivering radiation therapy treatment to patients with cancer. Radiation therapists plan and deliver highly specialised treatment to potentially immunocompromised patients, making precautionary measures necessary in radiation oncology. The nature of the work requires a high degree of closeness with a patient's face and body. This invasion of both staff and patients' personal space is required for optimal treatment positioning, which means that radiation therapists are not able to maintain 'social distancing'. This poses a significant risk to those in contact with patients, due to proximity to the patient and the volume of patients treated each day, consequently placing both staff and patients at risk. Radiation therapists were recently ranked within the top 10 Australian professions at greatest risk of contracting COVID-19.¹

Radiation therapy in the COVID-19 environment

All allied healthcare professionals are at risk during this time. This was specifically highlighted to radiation therapy professionals by the COVID-19 cluster at The Alfred Hospital in Melbourne (Vic., Australia), resulting in the deaths of three cancer patients,² and radiation therapy staff at Westmead Hospital in Sydney (NSW, Australia) testing positive for COVID-19.³ An outbreak with at least 45 medical workers and nine patients infected with COVID-19 saw the abrupt closure of both the North West Cancer Centre and the North West Regional Hospital in Burnie, Tasmania, and forced approximately 5000 people into the country's strictest lockdown.⁴ Transmission of the COVID-19 virus to healthcare workers is concerning, with almost 160 Victorian healthcare workers infected with COVID-19, a figure that doubled in a week and accounts for 12% of the state's infections.⁵

The worldwide radiation therapy network Facebook page (<https://www.facebook.com/groups/2243628248/>, accessed 17 June 2020) provides an active support network for radiation therapists. Through this network, questions have been raised and shared regarding actions and precautions that are being taken by radiation therapists and their employers when both planning treatments and treating their patients. Local Australian discussions through social media with the authors seek a consistent, coordinated national approach to radiation therapy service delivery during this COVID-19 pandemic.

Recent statistics from the regulatory authority, namely the Medical Radiation Practice Board of Australia, show 2541 registered radiation therapists in Australia,⁶ with the 30- to 40-year-old age group comprising 40% of the workforce. Although initially this group was not deemed at risk, further literature is emerging that suggests that people with no health conditions and <60 years of age are also susceptible to infection with COVID-19.⁷ The radiation therapy workforce also include practitioners who are immunocompromised from prior medical conditions or are pregnant, further increasing their risk and susceptibility to the COVID-19 virus.

Infection control

There is growing literature on strategies to manage radiation therapy departments following COVID-19 outbreaks in China, Italy and Taiwan.^{8–10} These recommendations to minimise the spread of the virus include screening of both staff and patients, the use of facemasks by patients and staff, patient guest policies, working-from-home measures and mutually exclusive division of workforce teams.

The Australian Commission on Safety and Quality in Health Care (ACSQHC) has produced an infographic on infection control and prevention of COVID-19 that details procedures to reduce contamination from aerosol-generating procedures.¹¹ These procedures will decrease in risk as distance is increased and there is appropriate ventilation. In radiation therapy settings, patients who present with head and neck cancers sometimes have tracheostomies where respiratory droplets can be created. Other aerosol-generating procedures, such as activated breathing control (ABC), which requires a mouthpiece connected to the ABC apparatus tube to be placed into the patients mouth,¹² also contain an element of risk to the treating radiation therapists. The New South Wales (NSW) Clinical Excellence Commission (CEC) also details hospital-based best practice for dealing with COVID-19.¹³ Both the ACSQHC and NSW CEC recommend personal protective equipment (PPE) for health workers in clinical units specifically for the protection of vulnerable patient groups during COVID-19. These authorities suggest that PPE include single-use surgical masks that are fluid resistant and disposable gowns and gloves.^{11,13}

Departmental considerations

Selected practitioners from five major radiation therapy departments around Australia, namely in Queensland (Qld), NSW, Victoria, Western Australia (WA) and Tasmania, were contacted by the authors to ascertain what departmental processes are in place for the handling of the COVID-19 pandemic. Eighteen participants were included in the study and were asked

four questions via email. Respondents answered both via email and in telephone interviews. These radiation therapy departments included public and private departments located in metropolitan and regional areas. Each of these radiation therapy departments is the main provider of radiation therapy services in their state. The responses that were provided by the practitioners at the coalface (willing to speak with the authors) demonstrated that there are no consistent infection control processes in place to deal with this pandemic nationally.

Detailed below are some of the measures in place that reflect national inconsistencies.

Screening and temperature checks for staff and patients

- All patients and visitors coming into the hospital are verbally screened and their temperature is checked. Staff are not being screened nor temperature checked.
- One department is not performing temperature screening checks on their patients. Patients are contacted the day before their computed tomography (CT) examination and their first treatment appointment and asked a series of health questions. Seating is minimal in the waiting room and patients are only permitted to bring one other support person with them to appointments.
- Some departments are routinely temperature testing all patients and staff before entering the hospital.

Surgical masks and PPE

- Radiation therapy staff wear surgical masks when seeing all patients, and N95 masks when treating patients who use ABC.
- In one department, staff are not wearing masks on the advice of their state's infectious diseases specialists.
- In another department, staff are not wearing masks as per a hospital executive directive.
- Staff in a regional environment were advised that no masks were required because the risk in the regional areas was low.
- One department is about to commence wearing masks or goggles for patients deemed the most likely to put staff at risk by coughing on them. To conserve PPE, another department had one staff member donned in full PPE equipment to set up the patient for treatment and a second radiation therapist who was responsible for the 'clean' processes of operating the equipment to deliver the radiation.
- Any patients suspected of or positive to COVID-19 are treated by staff in PPE.
- One department understands that if a patient has COVID-19, they will be treated at the end of the day on one machine with staff in full PPE.

Planning and working-from-home arrangements

- One department has asked suitable planners and senior staff to work from home in fortnightly blocks to create further physical distancing.
- At one hospital, there has been an executive directive that 'working from home' is not appropriate at this point of time.
- Radiation therapy staff in planning are divided into two teams, morning and afternoon, and work in separate spaces with no interaction.

Radiation therapy workforce teams

- Radiation therapy staff in one department have been split into morning and afternoon teams with no overlap in shifts. This means that the staff working an afternoon shift must wait until the morning shift staff have cleaned the workspaces and left the building. The teams do not see each other to do a handover.
- One department has split into two teams, treatment and planning, with separate spaces for breaks.
- Another department continued operations as per normal conditions with no introduction of separate teams. Social distancing measures were implemented in the tearoom for scheduled breaks.

Although each radiation therapy department is guided by its local risk assessment and infection control guidelines, there is a need for a more consistent, coordinated national evidence-based approach to radiation therapy service delivery during COVID-19.

Management and leadership

Radiation therapists are a group of healthcare workers that are already dealing with patients and carers who are under considerable stress. The demands of this job are both technical and socioemotional to provide the best care and treatment for the patient. The addition of COVID-19 will inevitably add another layer of pressure and stress to an already stretched workforce. A combination of fear of the unknown and inconsistent messaging around PPE use in Australian radiation therapy healthcare organisations can only lead to anxiety and frustration. This may further compound mental health and psychosocial issues already experienced by this workforce.^{14–17} Mental health is a well-recognised issue by both the World Health Organization¹⁸ and the Australian Government, highlighted by the A\$74 million mental health package that has been declared to assist all Australians.¹⁹

Recent media events have demonstrated that COVID-19 is not a just a virus that appears in metropolitan areas. With the commencement of the relaxation of laws in the coming weeks and months, it is imperative that appropriate measures are adopted to protect our radiation therapy workforce. The primary directive is to ensure the minimisation of risk of infection while safely delivering care to patients. It is evident that significant disparities exist in the way radiation oncology departments are managing this COVID-19 environment.

Strong leadership by radiation therapy clinical and management teams is vital during this period of time. In Victoria, a radiation therapy provision plan for public hospitals was created along with the Department of Health and Human Services to provide clinical guidance (Anon, pers. comm.). This plan was created to ensure that public radiation therapy services remained operational while protecting both staff and patients. The authors are unaware of any other documents similar to this that have been produced outside of Victoria to support public or private radiation therapy facilities.

Radiation therapists are at risk of emotional exhaustion due to competing demands of the job. In the current COVID-19 environment, strong leadership, quality communication and clear direction is vital. It is a costly exercise for organisations to manage employee absences in addition to poor performance. This highlights the importance for organisations to provide

preventative measures in addition to effective robust systems and job resources that can address signs of stress, anxiety and fatigue to ensure employees' safety and well-being. Perceived organisation support²⁰ and job resources²¹ can buffer the strain generated from job demands. Practitioners who have access to support and resources are better equipped to deal with the demands of the job, resulting in lower levels of exhaustion.²² Organisations can assist radiation therapy practitioners by providing adequate and essential resources. This will ensure maximum engagement, create a higher level of resilience and contribute to the development of a strong and healthy (mentally and physically) workforce.

Professional organisations, such as the Australian Society of Medical Imaging and Radiation Therapy, the International Society of Radiographers and Radiologic Technologists and the Canadian Association of Medical Radiation Technologists, are advocating to the highest levels of government for the provision of appropriate resources and 'equitable PPE policies' for medical radiation practitioners.^{23–25} The Society of Radiographers in the UK recommends the practitioner undertake risk assessments for the use of PPE, along with a strong recommendation that their members 'do not undertake treatment or examinations without the appropriate PPE'.²⁶ At a recent Asian international COVID-19 forum, the collective presentations indicated that all radiation therapy staff are required to wear surgical masks for all patients.²⁷

Although the Australian Government has been providing regular messaging to its citizens via the Prime Minister and Federal Chief Medical Officer, the messaging for PPE has been mixed in the allied health sector. This messaging has been provided through weekly updates by the Principal Medical Advisor to the Department of Health, along with the Australian Government's Chief Nursing and Midwifery Officer.²⁸ Messaging has also been issued to the healthcare workforce of individual states by state allied chief health officers and chief medical officers, compounding the inconsistent and confusing messaging. It is evident that health is state and not federally mandated. This is highlighted by the recent release of the national three-step framework for a COVID-safe Australia,²⁹ with Prime Minister Scott Morrison suggesting that, 'subject to expert health advice, states and territories can implement changes based on their COVID-19 conditions'.²⁹ As a consequence, with individual states issuing their own messaging in the healthcare sector, the resulting interpretation of who requires resources such as PPE have been varied. To maintain consistency of messaging in the allied health sector, the recommendation from the authors is that the Australian Government strongly considers appointing a federal chief allied health officer to represent the allied health sector.

Future direction from lessons learnt

We encourage professional bodies to seek further engagement with radiation therapy professionals nationally to reflect on their current practices and processes, and to engage in raising awareness of the measures implemented within their departments during COVID-19. These shared experiences will create learning opportunities for future disaster management strategies. Lessons need to be learnt from the outbreaks at The Alfred,

Westmead, North West Cancer Centre and the North West Regional hospitals. A thorough analysis of organisation procedures (disaster plans), communication and messaging protocols, provisions for appropriate PPE and psychological support for patients and staff must be considered. Further collaboration with radiation therapy stakeholders and research into this area will only strengthen the knowledge base and contribute to raising the profile of the radiation therapy profession.

Recommendations for management

Additional research into human resource management in health care around work engagement before the next wave or pandemic is warranted. Literature from the UK National Health Service (NHS) Staff Council details some areas of consideration for practitioners working in an NHS facility.³⁰ These areas are recommended for further review and research in the allied health sector with specific focus on radiation therapy departments:

- implementing effective and efficient communication channels between the various facets of the hospital, including the infection control advisors, occupational health and safety team, and human resources
- having a clear plan, from a managerial perspective, on how to deal with staff who contract COVID-19 and a detailed plan for staff with the provision of resources to assist them if they have symptoms and with isolation requirements and their return to work plan
- having processes, from a managerial and psychological perspective, for dealing with practitioners who are vulnerable and at high risk (i.e. immune compromised or pregnant)
- discussing and agreeing with staff changes in working arrangements (e.g. shift work), with some level of documented plan to return back to normal (any changes in human resource policies, such as requirements for sick leave, annual leave and rostered days off, during this period of time need to be clearly communicated to staff)
- reviewing what facilities and resources in the well-being area are provided for radiation therapists, especially around managing stress and fatigue
- ensuring consistency across the states in messaging for the use of PPE (the authors recommend that to protect the safety and welfare of patients, all radiation therapists should wear masks when interacting with oncology patients).

This research will provide critical data to support decision making to state health departments, federal and state chief medical officers and other health stakeholders on what is considered a serious health concern to frontline Australian healthcare workers.

Competing interests

The authors declare no competing interests.

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