



The Royal
Australian and
New Zealand
College of
Radiologists

**Role Evolution in Diagnostic Imaging
RANZCR Response to QUDI QS3 Discussion Paper
on Role Evolution**

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Role Evolution in Diagnostic Imaging

Background

This paper provides an analysis of role evolution in the diagnostic imaging team from a radiologist's perspective. It examines the role of the radiologist as a key starting point for considering opportunities for better use of skills and competencies in the diagnostic imaging team. This paper draws upon in depth representative input from radiologists in response to the Royal Australian and New Zealand College of Radiologists (RANZCR) *Interim Position statement on Task Delegation and Role Evolution in Medical Imaging* which was endorsed by Council in May 2006.

This paper will also provide a response to the Quality Use of Diagnostic Imaging (QUDI) QS3 Project Discussion paper "Exploring Roles in the Diagnostic Imaging Team – Role Evolution and Radiographers and Sonographers." (*Feedback will also be provided to KL2 authors of QS3) with comments addressing specific issues or suggestions*). The QS3 project was to investigate the roles of radiographers and sonographers, as a condition of the Radiology Quality and Outlays Memorandum of Understanding. However, because a significant amount of discussion has taken place in the broader domain with regard to role evolution and task delegation since the QS3 Project began in early 2005, this paper will consider the wider context of the whole medical imaging team and the respective roles of radiologists and non-medical diagnostic imaging practitioners in the delivery of these services. This includes significant input from RANZCR members on their views on issues which they have indicated are of central importance to this discussion.

In setting the background, this paper firstly addresses:

- The need for common understanding of role evolution
- A workforce planning approach to role evolution

The paper then discusses the following issues identified by radiologists as having central importance:

- The role of the radiologist
- Curriculum, Credentialing & Clinical Guidelines
- Medical indemnity issues and duty of care
- The role of the non-medical practitioner and
- Delegation of tasks in medical imaging

Where the issues raised have been the subject of significant input by radiologists, they have been highlighted.

Role Evolution –What do we mean?

Medical imaging services are provided in a multi-disciplinary team, with members with the required expertise drawn from various professional and other groups. The radiologist has a duty of care to the patient for the time span of a service and thus is responsible for the service from the receipt of a referral for imaging or treatment through until outcomes are communicated to the referring practitioners, usually by way of a formal report.

At a time when there is much discussion amongst the health and general community about the ageing population, the likely demands on Australia's health care system and the critical health workforce shortages, it is of critical importance that the RANZCR systematically engage in deliberation and discussion about the manner in which future medical imaging services are provided, and by whom.

Role evolution, task substitution and task delegation are increasingly being proposed as solutions to the perceived health workforce crisis. There is a general acceptance amongst all stakeholders that there should be optimal utilisation of the health workforce. The Productivity Commission in its Health Workforce Study (2006) encouraged discourse about the distribution of tasks (task substitution) across health professional groups. Many proponents of '*task substitution*' in their responses to the Commission's report called for a relaxation of regulations which create barriers to non-medical health professionals taking on tasks which have traditionally been the domain of the medical profession. This has been the source of considerable concern by medical practitioners who want to ensure that their skills and competencies as clinical decision makers are not diminished. Task substitution to some degree has always existed in medical practice occurring under delegation arrangements. This '*task delegation*' is generally more accepted by medical practitioners because they maintain their duty of care responsibilities and provide supervision to the non-medical practitioners performing the task.

'Role evolution' is the consequence of practitioners taking on additional tasks where the boundaries of their roles are expanded. In considering the scope for role evolution in diagnostic imaging, including task substitution and delegation in the team, it is essential that:

- all the medical imaging tasks are clearly defined
- essential task competencies are defined
- radiologists retain such responsibility as is necessary for them to satisfy their duty of care, in particular a clinical opinion in the report

Role evolution through workforce planning

The Productivity Commission, in its December 2005 report to Council of Australian Governments (COAG), recommended that Australia's Health Ministers consider health workforce innovation on a national, systematic and planned basis. With the objective of an integrated approach to reform, the Commission recommended that a National Advisory Health Workforce Improvement Agency be established to consider opportunities to improve approaches to health education and training together with accreditation requirements directed towards removing barriers to workforce innovation.

Although the detail is unclear at this stage, COAG has given broad endorsement to innovative workforce reform and a Task Force will be set up to undertake project based work and provide advice to Australian Health Ministers Advisory Council (AHMAC) on issues in relation to workforce reform. Against this backdrop there has been considerable debate about the merits of non-medical practitioners taking on tasks which have been previously the responsibility of medical practitioners or medical specialists.

It should be noted that there is a serious shortage of radiographers and sonographers and this must be explicitly taken into account in the development and implementation of any changes to the roles of these groups.

The RANZCR is of the view that role evolution should be driven by the need to better utilise the skills of the whole medical imaging team and that it needs to be considered in the context of responsibilities and the core competencies required to perform tasks. The impact of the delegation of tasks needs to be considered in view of workforce shortages in all groups across the medical imaging team.

Role of the radiologist

Most radiologists agree that consideration about further involvement of radiographers and sonographers in tasks which have been previously carried out by radiologists calls for an understanding of the role of the radiologist. Radiologists have a duty of care and legal responsibility to the patient and the referrer for the conduct of a medical imaging service. Consequently radiologists are responsible for the professional supervision of the procedure, including supervision of non-medical practitioners in the imaging team.

There is a general consensus amongst radiologists that the radiologist should be directly involved in clinical management of the patient through interaction with the referring clinician. Radiologists have specialist clinical knowledge and skills and their medical imaging expertise is a key component of patient management. Many radiologists contend that their duty of care and medico-legal responsibilities are only fully recognised if there is direct involvement in clinical management. They see a key role of the radiologist as increasingly determining the need for and appropriateness of diagnostic and interventional imaging.

This discussion has focussed on the definition of what constitutes a medical imaging service. There is a view that radiologists are inappropriately seen by other medical practitioners, as technicians (or providers of images and reports) and not as medical specialists whose knowledge and skills relate to the use, performance, and interpretation of diagnostic imaging and imaging-guided intervention.

Because the radiologist actually provides a clinical consultative role, the potential involvement of non-medical practitioners in tasks currently carried out by the radiologist must only occur in the context of delegation and under supervision by the radiologist. Radiologists have expressed concern about whether referring medical practitioners would accept the validity of a consultation regarding the need for or choice of imaging where this consultation occurred with someone who was not medically qualified – after all, there can be no substitute for years of pre-clinical, clinical and then specialist diagnostic and interventional imaging medical training.

In any discussion of this topic, one needs to acknowledge the history of role evolution of non-medical practitioners in the United Kingdom. The Four Tiered Advanced Practitioner model in the United Kingdom provides the back drop to most of the published evidence that supports accuracy of radiographers in interpreting images. However, there is no evidence of the impact on the quality of the service provided by the Advanced Practitioner Model, particularly in the setting of an original environment of a dire shortage of radiologists in the United Kingdom. It could be argued that a number of options might represent an improvement in some of these shortage scenarios, but is this acceptable or safe for Australian patients?

The RANZCR is of the view that there is an essential component of the role of and the tasks carried out by the radiologist which is non-delegable. The delegation of delegable tasks within the diagnostic imaging team must acknowledge the duty of care of the radiologist, and the duty of care owed by other members of the diagnostic imaging team. Each member of the diagnostic imaging team has a duty of care to the patient and is responsible for the care of the patient. The integrated medical knowledge and expertise of the radiologist is critical to ensure that referrers receive a quality service which actively contributes to the diagnosis and management of their patients. This core competence is one which is not able to be either transferred or delegated in its entirety.

Curriculum, Credentialing & Clinical Guidelines

The RANZCR is currently developing a competency based curriculum for its training program. This will define the specific competencies for Radiologists and Radiation Oncologists in the spheres of: Clinical Expert and Decision Maker, Collaborator, Communicator, Health Advocate, Manager, Professional and Scholar. This process emphasises the role of the radiologist as a consultative clinician.

Credentialing is a process which encompasses the clinician's scope of practice and the capacity of the environment to enable a practitioner to provide a specified medical service. This has been advanced by the Australian Council on Safety and Quality in Health Care (now the Australian Commission on Safety and Quality in Health Care) and the QUDI program has commissioned work of the implementation of this process in relation to medical imaging services. As the range of service models under which these services are provided is diverse, the RANZCR is actively considering how to best support this critical clinical governance tool in medical imaging.

Another mechanism to advance the role of radiologists as consultative specialists is by contributing to the development of clinical practice guidelines. These activities enhance the work done by radiologists in clinical protocol development. For example, there is a strong commitment to working with the National Breast Cancer Centre and the Australian Cancer Network in the development of multidisciplinary clinical practice guidelines. The RANZCR Strategic Planning process will identify further opportunities to engage with other medical groups and lead them in the development of clinical practice guidelines pertaining to medical imaging. Through the QUDI program, the RANZCR is exploring the use of the "Critically Appraised Topics" methodology as a means to support the development of these activities.

The RANZCR is actively progressing curriculum development, credentialing and clinical guideline development to support the continued role of the radiologist as a consultative specialist in the spheres of: Clinical Expert and Decision Maker, Collaborator, Communicator, Health Advocate, Manager, Professional and Scholar.

Indemnity/Medico-Legal Arrangements and Duty of Care

Medical practitioners and health professionals owe their patients a duty of care. Medical imaging is conducted as a part of a broader clinical episode of care. The radiologist is responsible for the delivery of the service, from the receipt of the referral to the communication of a report.

The Productivity Commission report recognised that medical indemnity arrangements continued to affect career choice within medicine. It also flagged that issues of indemnity and responsibility for patient care would need to be explicitly considered in the exploration of workforce innovations and specifically task delegation.

The issues of duty of care, other medico-legal issues and indemnity are relevant across all aspects of health care and medical practice. While the RANZCR will be involved in discussions about these issues through the Committee of Presidents of Medical Colleges, any proposed changes to existing arrangements will need to be carefully and deliberately considered.

The QS3 discussion paper explores options for professional indemnity cover of non-medical practitioners with independent practitioner status who may produce images and reports that are not overseen by a radiologist. The provision of such professional indemnity cover will ultimately be a matter for the insurance market. However, no matter what cover might eventually be available to non-medical practitioners, the position remains that should non-medical practitioners provide reports which are not seen by the radiologist then the radiologist responsible for the consultation in question could not protect their own duty of care responsibilities.

Given that it is usually the treating medical practitioner, and not other members of the diagnostic imaging team, who is named as a party to a legal claim it may appear that the law places sole responsibility for the care of the patient in diagnostic imaging with the appropriately trained and qualified medical practitioner. However, the reality is that the law places responsibility for the care of the patient in diagnostic imaging on all members of the diagnostic imaging team, including the radiologist, radiographer, sonographer and medical receptionist, as each member of the diagnostic imaging team has a duty of care to the patient and may be held responsible for the care of the patient. Employing institutions (including employer radiologists) also have a duty of care to patients, these institutions may be held vicariously liable for act and/or omissions of their employed staff. Any engagement with stakeholders should take into consideration these institutions and organisations.

Role of the non-medical practitioner

The recent Australian Institute of Radiography (AIR) Professional Advancement Working Party Report (2006) clearly states an intention to broaden the scope of the radiographer into areas which AIR sees as “overlapping roles and duties” of the radiologist. Image interpretation, colonoscopies and biopsies are listed as areas of overlap with radiologists where there might be potential broadening of scope of practice for radiographers.

The AIR report (2006) suggests that they take responsibility for the development of guidelines for advanced clinical practice for radiographers in image interpretation.

The current debate about whether radiographers should interpret diagnostic images has been sidelined to an extent by a debate about the accuracy of images interpreted by radiographers.

Evidence to support the ability of radiographers to take on many of the tasks proposed by AIR which would broaden the scope of the radiographer is not currently available. There has been no evidence produced to support the safety of radiographers performing musculoskeletal injections, biopsies, and CT reports and there is no evidence that professional indemnity insurance will be available for radiographers doing such work - yet this is proposed in both the AIR report and the QS3 discussion paper. Currently radiologists who perform interventional procedures of any kind (defined as placing a needle in the patient) generally pay a higher medical indemnity premium than those involved purely in image interpretation.

As indicated earlier in this paper there needs to be a joint understanding between key stakeholders of the difference between advanced technical imaging skills that might enable interpretation of some types of imaging with no medical interpretation, and the totality of the service and the “value add” provided by the radiologist. Whilst some stakeholders suggest that non-medical practitioners can provide an initial interpretation of an image it needs to be recognised that this task is just one component of a large set of steps in clinical management, often in complex clinical environments.

The medical report includes components which require an understanding of the technical observations and a medical interpretation which can only be provided by a suitably qualified medical practitioner and it is this skill which cannot be delegated.

Many radiologists see technical solutions (e.g. teleradiology and PACS), to the management of high demand in medical imaging in rural areas where there are shortages of radiologists. Whilst problems with access to diagnostic imaging are resolved, the quality of the service can only be maintained if the radiologist continues to provide input and supervision.

In the absence of physically available radiologists, there may be scope for more collaborative approaches between the medical imaging team and more effective use of radiologists resources through, for example, teleradiology.

Delegation of Tasks in Medical Imaging

The QUDI QS3 report discusses ‘organic growth’ in non-medical practitioners involvement in “duties beyond the statutory limitations of the practitioner’s usual work” (p: 19) and seems to suggest that standards and protocols might be developed as a quality measure in role expansion of radiographers and sonographers. In response radiologists themselves reinforce that it is their responsibility for the entire medical imaging service, including quality and safety, even if they do not carry out the entire service themselves because their names are on the report. The report encompasses all components of the imaging/interventional service, including assessing the indication, ensuring the appropriate imaging has been performed, that images are of adequate standard, interpretation of the images in the context of the patient’s clinical presentation and communicating these factors to the referring clinician on a medical practitioner to medical practitioner level.

Role evolution should be derived from the delegation of tasks from the radiologist and must therefore be underpinned by adequate levels of training of their staff and appropriate quality control. As long as this is the case, radiologists are of the view that the RANZCR is responsible for setting professional standards e.g. to mandate that a radiologist needs to review ultrasound images before dictating a report even if the sonographer has produced a worksheet.

Some radiologists believe that non-medical practitioners have a clear understanding of the clinical role which cannot be delegated to them.

“It has been my experience that sonographers who have a close working relationship with radiologists have some understanding of this limitation in their training and many do not feel comfortable in taking full responsibility for advice on clinical management for this reason.”

“It is my experience that when sonographers work closely with the radiologist, personally discussing their findings with the radiologist, and when appropriate, encouraging the radiologist to personally scan or observe images in real time as the sonographer scans, a higher level of service is provided to the patient than when there is no interaction between the sonographer and the radiologist. The team approach provides the best results.”

Radiologists have comprehensive medical education and training, together with clinical experience and specific imaging training as consultative clinicians. Their clinical training, knowledge and experience extends their perspective well beyond just the interpretation of images, enabling them to examine the clinical possibilities and to know which questions to ask or how to advise clinicians to proceed in terms of doing further tests. Other practitioners do not have the clinical background that comes with a medical specialist qualification and experience.

Support for role evolution

There is growing support for more effective utilisation of the medical imaging team, particularly in some high workload areas of radiology. Some radiologists qualify their support for broadening the scope of the role of non-radiologists (who may include other medical practitioners) in imaging:

“There is a shortage of radiologists. There is a temptation to use non-radiologist personnel to address that shortage. I support that move in an environment where such people can be supervised and formally audited such as in Breast Screen on a routine basis. I do not otherwise support such a move.”

A recent series of articles in the *MJA* (185) June 2006 shows support from medical speciality groups to explore role evolution and task delegation as a solution to alleviating medical specialist workload and an acknowledgement that health care is delivered best by a team.

The debate now centres on the detail of how these strategies should be implemented, without compromising patient care. It is acknowledged that health care is delivered by a team and in most situations directed by a medical practitioner.

It is the RANZCR view that complex tasks which are currently the responsibility of radiologists cannot be simply delegated under the umbrella of broad role evolution strategies.

Conclusion

RANZCR recognises that there are increased demands on Australia's health care system and the critical health workforce shortages will require innovative responses to the way medical imaging is carried out in the future. Radiologists should continue to be responsible for the totality of the imaging service including patient assessment, evaluation and treatment review. Radiologists are best placed to advise on the need for any testing, its urgency, and the choice of imaging modality. They also supervise and interpret radiological examinations as well as performing diagnostic and therapeutic procedures. Finally, they ensure that the results of testing or treatment are effectively communicated with the referring doctor and other medical practitioners who may be involved in the patient's care and they determine the urgency, content, and nature of this communication. No other group can provide this comprehensive holistic service.

While there is scope for delegation of tasks associated with conduct of the procedure, at present it is the view of the RANZCR that the medical interpretation provided by the radiologist which is an integral part of the provision of a quality diagnostic or interventional radiology service, cannot be effectively delegated to those who have not been specifically trained as medical practitioners and then as radiologists.

This paper has endeavoured to identify and address the key issues in relation to role evolution from the radiologist's perspective. It is hoped that the RANZCR's discussion of these issues, informed by the views of its members, will enable it to work towards a definitive position.

Further collaborative work with key stakeholders needs to occur on medical indemnity issues, on developing competencies and practice guidelines and clinical protocol development.

The RANZCR recognises that there is significant pressure on the radiology workforce through increased demand and workload; however, at this stage there has not been sufficient assessment of the tasks which may be effectively delegated by radiologists in order to relieve these workload pressures.

The RANZCR will engage with key stakeholders to determine the scope for role evolution in the medical imaging team and to develop appropriate criteria and strategies where and if applicable, to establish new roles and responsibilities.

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Should you wish to discuss any of the issues in the paper please contact the College office on 61 2 9268 9777 or email ranzcr@ranzcr.edu.au