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Re-Examining the Roles of Radiologist and Technologist: Is a Transfer of Tasks Inevitable?

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Technology and tools in medical imaging are rapidly evolving. Demand for medical imaging continues to grow and concomitantly, new needs will rapidly appear. Thus, as we enter this new era, it seems probable that, to respond appropriately to our colleagues and patients, we must adapt our practice to these changes. In my opinion, this calls for a future transfer of tasks from radiologists to technologists and an expanded training curriculum that takes into account an analysis of what roles they are capable of performing and (eventually) a re-examination of current national legislation, which presently limits such an expansion.

What Roles do Technologists Perform in France?

In France, there are two categories for services performed by radiologic technologists:

- Diagnostic examinations and/or procedures that are relevant for medical imaging, or functional exams, using or not using ionising radiation, or other physical agents, and
- Radiotherapy treatments using ionising radiation or not, or other physical agents.

To simplify our purpose, this article will examine those activities related to diagnostic imaging, with the exception of radiotherapy treatments. In France, technologists assume a range of technical and clinical acts in relation to medical imaging. These include:

- Informing the patient about the exam;
- Clinical and psychological evaluation;
- Correct patient positioning;
- Patient preparation in respect to safety rules;
- Clinical follow-up during the technical act;
- Emergency care until medical intervention;
- Procedures transmissions;
- Stock and waste control;
- Correct functioning of radiological material, and
- Application of quality control programmes.

In France, with the appropriate medical prescription, a technologist is allowed to:

- Perform an exam without administration of contrast (radioactive or not);
- Prepare material for intravenous procedures (e.g. injection, catheterisation, etc.);
- Prepare any products to be administered;
- Adjust and use the imaging machines;

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- Collect and work on signal and images, and
- Assume cutaneous care. At the medical prescription of an immediately involved doctor, a technologist can:
 - Administer IM or IV contrast agents or drugs, either orally or rectally;
 - Verify radioactive substances, and
 - Perform blood sampling. In the presence of a radiologist, a technologist is allowed to:
 - Prepare automated injection systems;
 - Determine the doses for diagnostic or therapeutic procedures, and
- Oversee an intra-operative supply. Regarding medical practice in French university hospitals, as is also the case in some other public or private hospitals, technologists also have to participate in university activities such as teaching, research, prevention, screening, training and management. The main topics of concern are:
 - Initial and continuous professional development for technologists;
 - Teaching of other professionals;
 - Collaboration with other professions to coordinate activities (e.g. prevention), and
 - Research (e.g. safety, quality insurance, radiation protection and hygiene).

Increasing the Role of Technologists to Address Growing Demand

As previously mentioned, technology and tools in medical imaging are rapidly evolving. To execute a transfer of roles and/or skills from radiologists to technologists to address this increasing pressure on the department, there are two areas that must be rethought:

- What possible new tasks should technologists integrate into their current duties?
- What needs to be altered within current legislation to regulate any transfer of task?

One good example of where current French legislation restricts the authorised duties of technologists, for example, is that they are not presently allowed to acquire images or signals in ultrasonography.

What could be proposed, for example, would be the possibility for the technologist to acquire this competency under the responsibility and surveillance of a radiologist, as is done in other countries. This means that French legislation would be modified, and moreover that learning in ultrasonography would be offered to technologists. Furthermore, we should also ponder what other techniques, such as gastro-intestinal radiography or computed tomography could be added to the training of technologists, both initially and during their ongoing education.

There are other clinical conditions where technologists could be allowed to take charge of patient care, and where more specific learning should be developed for technologists, e.g.

- Roles within emergency radiology;
- Roles within bedside radiography, and
- Roles within interventional radiology.

Obstacles to Increasing Technologists' Workload

Numbers of technologists in France remain limited, in contrast to the rapid development of medical imaging. Thus, such a transfer of skills would not be realistic today. However, this provides a golden opportunity for those in governance to prepare the way for such a future. If we wish to embrace this future solution to the changes occurring in the department, we firstly need to promote this new job description amongst the younger generations as early as possible. As co-workers, experienced radiologists are well positioned to develop this education, and to promulgate this expanded role.

Information campaigns on the profession of medical imaging technologists would be clearly reinforced, and would make this job more attractive, when it becomes visible to future candidates that new responsibilities could be assumed by technologists.

However that means that these skills have to be validated by a diploma, as they would be the core activity of technologists. So, we have to examine how the diploma of technologist in medical imaging should evolve, and how to start new professional educational programmes under the direction of radiologists. That could be prepared through 2010, and be planned to start in 2011.

Technologists Demanding Greater Recognition

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Now technologists are pushing for recognition on a similar level to that of nurses, and also for greater autonomy in their professional practice than currently exists. It appears necessary that radiologists accompany their co-workers in this direction. But definition of the level of medical supervision required for such activities remains to be clarified, in terms of quality of care, and also as some radiologists may fear that it would create turf wars.

Radiologists should participate actively in the education and training of technologists, not only during their formal education through initial learning, but moreover through informal education as a professional project issued from their professional experience. On this basis, we would be better able to construct an educational programme that is based around such a transfer of professional task.

Clearly, radiologists and technologists must work together in order to define what type of skills can be promoted, and what boundaries they feel valuable for such transfer for the future; preparation is a key condition if we are to enable an enlarged future collaboration that is ultimately, to the benefit of patients.

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