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By Editor-in-Chief Prof. Iain McCall

Dear readers,

Delivering a first-class imaging service to emergency departments is a major challenge for many radiology departments around the world. Traditionally most radiologists are not resident in the hospital and specialists have a large inpatient and outpatient workload during the day, which often precludes providing immediate service to emergency patients and anything other than an on-call after-hours service.

The European working time directive has also had a major impact on the availability of radiologists to provide a 24/7 dedicated service to emergency departments. In addition, the massive rise in the use of ultrasound, multi-slice CT and even MR as immediate diagnostic investigations for a multitude of injuries, abdominal pain and stroke have resulted in an explosion of complex studies requiring experienced radiologists to interpret. Traditionally in those hospitals where training of radiologists takes place, much of the provision of radiological support to emergency departments was provided by the trainees with varying degrees of back-up support by their specialist tutors.

While this model still persists it is increasingly untenable as the diagnostic skills required have increased and the time juniors have for this work is reduced. It is also unacceptable that juniors' training in the whole field of radiology should be jeopardised by the need to cover the emergency services.

The high use of CT and ultrasound in the emergency department has also had a major impact on the provision of equipment as it is no longer possible to fit urgent multi-trauma cases requiring virtually whole body CT studies into routine CT lists within most departments. Equally it is unacceptable to move patients around the hospital, who are receiving resuscitation for multi-organ injury.

The solution has been to place dedicated CT and in some cases MR machines within emergency departments, but these require constant servicing by radiologists. This isolates the equipment from the main department, which in itself poses further logistical problems, reduces staff flexibility and may increase the inefficient use of expensive assets.

All these issues have resulted in a re-evaluation of the way emergency services are provided. At a macro level there has been closure of smaller departments and the creation of regional major trauma units that can be serviced by all the key clinical services. This has enabled radiology to reorganise the way the imaging is provided with dedicated staff specialising in emergency work providing appropriate shift coverage, and the advent of PACS and teleradiology has enabled some of the continuous urgent reporting to be performed off-site.

Ultimately it would be better to have experienced radiologists in major emergency departments 24/7 who would work as and be recognised as a fundamental part of the emergency team. Such models are functioning around the world although the lack of sufficient radiology staff and training posts in many countries is acting as a barrier to further progress.

This issue of the journal gives insight into the way that major emergency radiology services can be provided in an efficient, clinically- and cost-effective manner, and I hope that it provides some ideas for those grappling with this previously intractable problem.

Prof. Iain McCall

Editor-in-Chief

editorial@imagingmanagement.org

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