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How to Maximise the Use of Ultrasound in the Radiology Department

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Demand for general ultrasound (US) examinations is increasing by approximately 7.9% per year (Society of Radiographers 2009). Combined with shrinking funds, inadequate resources and waiting list targets this puts a lot of pressure on the radiology departments.

To solve the challenging task of providing timely, quality examinations radiology departments need to work harder and/or smarter. In informal interviews colleagues and radiology managers from different hospitals shared with me solutions that work for them as well as the disadvantages.

Working Harder

There are a number of ways to provide more examinations. Working hours can be extended by scanning a few extra patients before and after official working hours or providing weekend ultrasound lists. The concept is customer friendly due to ease of parking and no impact on their work. Sometimes patients regard the weekend date as a mistake and turn up on Monday.

A more serious downside of this solution is extra cost for the hospital. A simple estimation for delivering a 7 day service is a 40% increase in staffing, if the existing level of weekday service remains the same (Ultrasound Training Group 2010).

Traditionally hospitals have employed locums to cover gaps and provide extra cover. It is more difficult to persuade stakeholders for this temporary and costly solution under pressure of limited funding.

As well as providing more scanning time, radiology departments can increase productivity by looking at equipment use, referral efficiency, timetabling and the department's workforce.

Equipment

Providing equipment uniformity in the department results in instant readiness to work in each room for everybody

involved. It also ensures more efficient technical support.However, it is not always strategically possible to change all machines in the department at once.

Some inpatient US may be performed on the ward by radiologist or sonographer using portable ultrasound units. In my experience of this patients loved the comfort while clinicians appreciated our swift reaction to their requests, all done on the same day. Following an audit we decided that only straightforward indications (such as pleural effusion, gallstones, renal stones or renal obstruction) could be included on the mobile list.

The advantages of mobile US are flexibility and a reduced number of patients on the list. Using portable US clashes with the equipment uniformity suggestion, but if you have it use it to full capacity if you have enough staff or skilled radiology registrars. The downsides of using mobile US are too much light in the wards, back pain for the operator and lower diagnostic value for patients with high BMI.

Workforce

If you can, delegate wisely. This can be achieved by training more sonographers and by supporting specialists (from the emergency department, intensive care and surgery) in attending certified courses and thus enhancing their professional abilities. This solution may sound ideal, but it carries risks.

Mentoring is time consuming for the radiologist as it slows current clinics with only the prospect of help in the future. It takes approximately three years to train a fully qualified sonographer, and a course of at least one year to enhance specialist skills with US. By this time the sonographer may decide to move on or join an agency. The specialist may stop using a new skill or still formally refer patients for an ultrasound with a radiologist for a double check.

Ultrasound equipment purchased for enhancing other specialists' skills is spread out around the hospital and used only occasionally. Hence US machine use time by non-radiologists might be below any profitable standards.

Influencing Request Form Flow

Referrals can be made more productive by educating and providing feedback for primary care doctors and hospital physicians about referrals. The downside is that this is time-consuming and very often good advice will be ignored.

Online referral can be used to highlight usefulness of the referral in red (low utility), amber (marginal utility) and green (indicated), in association with appropriateness criteria (as outlined by Professor Charles Kahn in a paper at the Management in Radiology 2011 Annual Scientific Meeting). Apart from the obvious downside that not everybody has such sophisticated online programmes, it is also possible that it might encourage referring doctors to modify the truth. Rosenthal's study found that the main reasons for referrers to proceed with tests indicated as having low utility were that it was recommended by a specialist, or that the referring doctor disagreed with the guidelines (Rosenthal et al. 2006).

Authorising referrals and checking against protocols is time consuming for the radiologist. Some departments have performed audits that demonstrated that it brings no benefits and now let all requested US examinations be booked. Other hospitals argue that authorising practice helps to ensure that the patient will have the most appropriate examination with no unnecessary double examinations booked and valuable radiologist/equipment time will be well spent.

Time

Session scheduling can also assist productivity. For example, one hospital I worked in made a small revolution by splitting four hour radiological programmed activity sessions into blocks of two hours and adjusting the weekly work plans. The major commitments of all radiologists are respected, but the fluidity and adaptability of new arrangements ensured no void time at the beginning or end of the session, during lunch or due to colleagues on leave. Certainly such arrangements put extra pressure on this particular radiology manager, but she is happy with how it all worked out.

Conclusion

There are a number of ways to maximise the use of ultrasound in a hospital. There is no one solution to fit all, but this article has outlined various factors which radiology managers should consider. A key concern is whether US should be used by other specialists as well as radiologists and whether equipment should be centralised.

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