BMUS

Business Case for Practical Training in Medical Ultrasound for Non-Radiology Clinicians

Introduction:

Diagnostic Ultrasound scanning is a highly operator-dependent technique which is potentially detrimental to patients if inadequately performed. It should only be undertaken following proper training and assessment. (1)

Whilst training is routinely available within radiology departments, non radiologists must make special arrangements for training and assessment before undertaking ultrasound safely. This should be carefully planned, properly funded, agreed with the local radiology department and carried out by trained ultrasound professionals.

The following document sets out a template business case for those clinical specialties intending to train SpRs in medical ultrasound, the main thrust being the provision of a new or improved ultrasound service. Both theoretical and practical training are required. The business case primarily focuses on the practical aspects of ultrasound training for non-radiology SpRs, including assessment and mentoring. Advice on obtaining theoretical training is given elsewhere (2).

It is vital that there is a close working relationship with the local radiology department, as radiologists and/or sonographer practitioners must initially provide the training, assessment and mentoring of SpRs. (In the long term it is envisaged that training will be taken on by the relevant specialist physician who has reached a suitable level as is already the case in cardiology and gynaecology (3).

When drawing up a business case for ultrasound training a number of key people are likely to be involved in its planning and costing, these will include:

- The specialist clinician & colleagues
- Appropriate head of SpR training or college tutor
- The lead radiologist / training radiologist
- Sonographer
- Radiology manager
- Clinical directorate manager
- Clinical risk management team

Suggested Elements of the Business Case:

Executive Summary:

Based upon the subsequent document, this needs to highlight the need for an expanded / more accessible ultrasound service, which can be achieved through the training of non-radiology clinicians in diagnostic ultrasound. Include summary of potential cost savings from reduced patient episodes/ hospital stay.

Strategic Context:

In the strategic context the business case should outline the current state of ultrasound services both nationally and locally, the current and future demands on ultrasound, the local benefits of clinician practised ultrasound, and the need for formal training.

•National & local picture:

Traditionally ultrasound services for the relevant specialty have been provided by radiologists / sonographer practitioners, with a centralised department being seen as a cost effective and efficient use of equipment and manpower. Clinician practised ultrasound also exists (4) although there is huge variability in the level of recognised training.

Outline of local ultrasound services including number of machines, staff, percentage of work currently coming from relevant specialty, waiting times for routine / urgent scan requests and any existing clinician based ultrasound service.

Drivers for change:

This is dependent upon where the US service is to be practised, but may include: Any relevant changes in clinical specialty service Demands for "one-stop" clinics Forthcoming referral to treatment targets Reduced "follow-up" outpatient visits Accelerated inpatient management Relevant NICE guidelines Literature supporting the use of ultrasound guided interventional procedures

Other factors that create opportunity:

If appropriate, the recognition by the relevant Royal College of the need for training in ultrasound and incorporation of this into SpR training schemes.

The EFSUMB proposed minimal training requirements for the practice of medical ultrasound (5).

The RCR document providing clear guidelines on training requirements (3).

Impact on local health economy:

In some specialties this may be difficult to measure (e.g. ultrasound-guided procedures on inpatients) and will have to come under the umbrella of improved patient care, with possible shortening of inpatient stay. Potential cost savings by avoiding repeated outpatient visits and a radiology department scan should be cited with recognition to initial training costs.

SWOT analysis:

If included should emphasise opportunity of high quality in-house training and mentoring. Threat of loss of particular clinical service to other trusts offering training and / or potential litigation costs if clinical specialty starts US service without formal training. The introduction of such a training scheme would provide opportunity to expand / improve trust ultrasound services with associated benefits to patient care.

Business Case Outline:

Objectives:

1. Outline of intended clinician led US service and how training for this is to be achieved, e.g. Outpatient list scanning.
2. Description of how this will improve quality of care e.g. reduced hospital visits / accelerated patient pathway
3. Increased patient satisfaction
4. Increased staff satisfaction through extended diagnostic role, loss of potential diagnostic bottle-neck, no need to go off-site for training, no concerns over clinical governance.
5. The cost advantages of reducing outpatient attendance or inpatient delay can be displayed in a tabulated form against costs of current practise
6. Emphasis on the benefits of an established training scheme with regard to clinical governance to the trust, but also highlight recruitment advantages of becoming a training centre.
7. Any potential constraints on establishing such a training scheme and subsequent clinical service should be identified. e.g. problems with support from radiology department.

Option Appraisal:

A range of options with regard to training should be given, along with equipment purchase, which might include the following:

1. Do nothing

2. Regular practical training of the SpR by radiology staff to an agreed level in order to fulfil the required competency. +/- machine purchase. Theoretical training either in radiology or off site.

3. Send SpR offsite for training, +/- machine purchase

4. Purchase & use of an ultrasound machine without structured training. Although this may be listed in the option appraisal it is clearly not a suitable option for reasons of potential litigation resulting from diagnostic errors, and is unlikely to be in keeping with local trust clinical governance policy. (3, 6,)

Advantages and disadvantages for each option, including cost-benefit analysis, should be referenced to the intended objectives and include an assessment of risk (i.e. providing service without adequate level of training).

Impact Statement:

Having identified the preferred option, the impact on relevant departments e.g. radiology, outpatient services, ITU, need to be described. Possible impact on adjacent trusts (patient choice) may need to be considered.

Training Programme Requirements:

Elements of the proposed Training Programme should include

1. Dedicated ultrasound sessions with a reduced number of patients

2. Sonographer or radiologist time

3. Factor for equipment use if utilising radiology equipment

4. Theoretical training costs – (either factor in for radiology time or suitable course – e.g. from an appropriate higher education institution)

5. Formal independent assessment

6. A period of mentoring. (How frequently and for how long this is done depends on the range of examinations to be undertaken and is a matter for agreement with the local radiology department.)

Financial Appraisal (Preferred option against do nothing option):

- Requires detailed costing of training including:
  - Number of scans required to reach level of required training
  - Number of scanning hours required to achieve above
  - Number of SpRs entering training per year
  - Cost of radiologist / sonographer per hour
  - Cost of additional ultrasound lists for displaced work
  - Cost of formal assessment (e.g. one whole outpatient list & radiologist)
  - Possible clerical cost for compiling appropriate ultrasound list for training

Depending upon the clinical specialty departmental ultrasound lists may not be the best approach to acquiring the necessary training. Alternatives such as ITU ward round teaching or training in outpatient clinics will need to be costed out on an individual basis.

- Capital costs: Purchase of ultrasound machine
- Recurring costs of mentoring:
  - Annual skills maintenance / mentoring cost
  - Equipment service contract
- Calculated projected savings may include:
  - Reduced outpatient episodes
  - Reduced radiology episodes

- Possible reduced inpatient stay / avoided admission Projected running costs should take into account that over a certain time period there will be a switch in who is performing most of the training towards the relevant clinical specialty.

A good worked example of costing can be found in the NHS Modernisation Agency document "Ultrasound by Urologists: an action on report". Available at www.content.modern.nhs.uk/urology/cd1_gpg/docs/ashford/ultrasound%20in %20urology.pdf

Conclusion:

Demonstrate how the introduction of structured SpR training will allow the outlined objectives to be met in an affordable manor (e.g. money saved from reduced patient episodes).

Implementation:

If not already included an agreed potential timetable for training should be included with details on project management, staffing, purchasing of ultrasound equipment, and how achievement of the project (i.e. successful training of SpRs and establishment of service) will be measured.

References

1. "Extending the Provision of Ultrasound Services in the United Kingdom" British Medical Ultrasound Society 2003. http://www.bmus.org/BMUS/publications/strategy.htm

2. The Consortium for the Accreditation of Sonographic Education (CASE)

3. Ultrasound Training Recommendations for Medical and Surgical Specialties. Royal College of Radiologists November 2004 (BFCR(05)2). www.rcr.ac.uk

4. Ellis BW, McNicholas TA, Dunsmuir WW. Should radiologists do their own diagnostic ultrasonography? BJU Int. 2004; 93:249-50

5. "Minimum Training Recommendations for the Practice of Ultrasound in Europe." European Federation of Societies for Ultrasound in Medicine and Biology. www.efsumb.org

6. Bates J. Ultrasound scanning. Training Issues for Medical Practitioners. Ultrasound 2005; 13: 214