Echocardiography within the British Isles: executive summary of a British Society of Echocardiography survey

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Abstract

This paper is an executive summary of a recent postal survey carried out by the British Society of Echocardiography to guide future planning.

Key words: echocardiography, UK, British Society of Echocardiography.

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Introduction

Little information about echocardiography exists to guide future planning and so questionnaires were sent by the British Society of Echocardiography (BSE) to all NHS and private hospitals in England, Scotland, Wales, and Northern Ireland. A total of 196 NHS surveys were returned, giving an NHS response rate of 80% allowing for Trust mergers and departments having no echocardiography service. In addition, 21 surveys were returned from private hospitals.

Full results are available on the BSE website (www.bsecho.org) and in the *Journal of the British Society of Echocardiography* (issue 57A).

Results

Activity

The annual total number of studies performed were: adult transthoracic 968,500; paediatric 16,325; transoesophageal (TOE) 18,525; and stress 9,800.

Out-patient TOE studies were performed in 163 (83%) centres and stress echocardiograms in 96 (49%) centres. There was an out of hours echo service in 82 (43%) hospitals, usually provided by the on-call cardiology specialist registrar. Studies were performed for general practitioners in 133 (71%) centres, usually as direct or open access studies. In 19 there was a portable machine either in the community or taken from the hospital to the community. Intra-operative TOEs were performed in 39 centres, of which 12 (31%) did fewer than 100 studies. In 24 (62%) centres, studies were performed by anaesthetists.

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Staffing

A cardiologist was regularly involved in echocardiography in 158 (81%) centres but only performed transthoracic studies in 135 (73%). There were 768 sonographers and 607 whole-time equivalent sonographers. There were 434 specialist echocardiographers (57% of the total) defined as performing echocardiography for more than 80% of their work time.

In 158 (83%) hospitals, 90–100% of studies were performed and reported by sonographers. On average, each whole-time equivalent sonographer performed 1,689 studies in a year. More than 25% of posts were filled by agency staff in 26% of centres and in 38 (21%) hospitals more than 25% of posts were unfilled either by locum or permanent staff.

Training

Most centres were involved in training both sonographers (81%) and SpRs (80%); 25 centres had trained general practitioners and 35 centres had trained other groups. Of the estimated 768 trained sonographers, 434 were BSE accredited. A minimum estimate of 55 sonographers were not trained via the cardiac physiology route. There was a regular business or teaching meeting at 127 (69%) of centres and 86 (47%) reported formal quality control.

Machines

There were 345 high-end and 129 mid-range machines suggesting that, on average, each high-end machine was being used for 2,242 and each mid-range machine for 2,078 transthoracic equivalents each year. There were also 150 portable systems. The oldest system in regular use was upgraded less than three years previously in 62 (33%) centres, between three and five years in 56 (30%), between five and 10 years in 58 (31%) and more than 10 years previously in 10 (5%).

Waiting times

Most urgent in-patient transthoracic requests were performed on the same or the next day. Most routine in-patient requests were performed within a working week but, in 18% of centres, a routine study waited for more than a week. The wait for an

urgent out-patient request was usually less than four weeks but, in 21 (11%) centres, it was more than four weeks. Routine requests waited more than four weeks in 62% of centres and more than 18 weeks in 23% of centres. Most requests for in-patient stress or TOE studies were performed within a week, but 39% of out-patient TOE and 74% of out-patient stress studies waited longer than four weeks.

Private

Activity in private hospitals was lower than in NHS hospitals and 14 (70%) performed fewer than 1,000 transthoracic studies each year. A regular business meeting was reported in four hospitals (19%) and quality control in five hospitals (24%), less than in the NHS.

Waiting times were similar to the NHS for urgent in-patient requests but shorter for routine in-patient and out-patient transthoracic requests, and for all TOE and stress studies. Each whole-time equivalent sonographer performed an estimated 900 studies.

Staffing problems were similar to the NHS. Three centres had 25–50% of staff provided by agencies, and one had 10–25%. There were 10–25% unfilled posts in four centres.

There were 535 studies each year per high-end or mid-range machine. Machines were newer than in the NHS, with the oldest system in regular use upgraded less than three years previously in nine (45%) private hospitals.

Conclusions and recommendations

Activity falls short of predicted potential demand by a factor of two for transthoracic studies, three for TOE studies and 22 for stress studies. The number of studies per sonographer is close to the BSE-recommended mandatory maximum of 2,000 and above the ideal of 1,500. Some demand could be accommodated in the community by a new type of screening echocardiogram (www.bsecho.org) performed by appropriately trained and supported sonographers and clinicians.

Key messages

- Activity falls far short of predicted demand for echocardiography
- Over one half of physiologists performing echocardiography are now specialist sonographers
- At least 500 more sonographers and up to one cardiologist per centre are needed initially

Any echocardiography service must be defined by a number of key requirements: the ability to provide high-quality screening, standard and complex studies; training and accreditation of all staff; quality control; refresher courses and continuing education; second opinions; and medical back-up. Although more echocardiography will need to be centred on the community, hospitals will remain essential for complex studies and usually for second opinions and medical back-up.

Established private hospitals are unlikely to be able to reduce waiting lists in the NHS. The number of machines in the NHS appears to be adequate for current activity although many are old and may allow suboptimal imaging. An estimated 500 extra whole time equivalent sonographers are required and these will most easily be trained by direct entry of science graduates into echocardiography as an alternative to progression via generic cardiac physiology. More cardiologists specialising in echocardiography are needed. The British Cardiac Society suggests the need for a total of 1,494 imaging consultants. As a preliminary step, each hospital should have one cardiologist specialising in echocardiography.

Conflict of interest

None declared.