**Audit of Appropriate Focus In Breast Ultrasound**

**Descriptor:**

Use of appropriate focal zone in breast ultrasound examination.

**Background:**

Ultrasound is one of the imaging modalities used in the triple assessment of potential breast pathology. High quality images require optimal settings such as gain and focal zone selections. Focusing of the beam improves the image in the focal range but generally makes it worse beyond it. Hence, the focal zone should be just at or below the target structure. The importance of focal zone placement has been known for many years [1,2]. Standards for breast ultrasound including focal zone are given by the American College of Radiology they state: “focal zone selections, and fields of view should be optimized to obtain high-quality images” [3]. Barker and Soo published an audit of compliance with these guidelines including focal zone use in 2002 [4]. Static images from PACS show where focal zone(s) are placed in the image and can provide evidence for audit.

## The Cycle

**The standard:**

Published audit shows that in almost 15% of 150 sonograms assessed the focal zone was inappropriately placed [4]. We suggest that this can be improved upon. Therefore, we set an arbitrary target standard of 95% for the total number of images with appropriate focal zones.

**Target:**

95% of images with appropriate focal zone placement.

## Assess local practice

**Indicators:**

Percentage of cases with appropriately placed focal zone(s).

**Data items to be collected:**

• Images reviewed on PACS and qualitative assessment of focus zones recorded

• Images considered appropriate if the focus is just at or below the target structure

• If the focus is markedly above or below the target structure, it should be deemed inappropriate

**Suggested number:**

This will depend on practice size. - Suggest 30 per sonographer

**Suggestions for change if target not met:**

Discuss importance of appropriate focal depth at a departmental or breast meeting and emphasize to the breast radiologists and sonographers. If Breast surgeons are performing breast ultrasound their examinations should be similarly audited

**Resources:**

- Access to RIS for lists of examinations performed

- We estimate about 1 hour of image review  per operator once cases are identified

[**226\_data collection sheet.doc**](https://www.rcr.ac.uk/sites/default/files/audit_template/cr/226_data%20collection%20sheet.doc)WORD - 63 KB

**References:**

1. Kimme-Smith C et al. Ultrasound Mammography:Effects of focal zone placement. 1985 Radiographics;5;p955 <http://radiographics.rsna.org/content/5/6/955.full.pdf>
2. Venta LA et al 1994 Sonographic Evaluation of the Breast. Radiographics 14:p29 [http://radiographics.rsna.org/content/14/1/29.full.pdf+html](http://radiographics.rsna.org/content/14/1/29.full.pdf%2Bhtml)
3. ACR Practice Guideline for the performance of a breast ultrasound examination. 2011 amended 2014 <http://www.acr.org/~/media/acr/documents/pgts/guidelines/us_breast.pdf>
4. Baker JA and Soo MS. 2002 Radiology 223; p229Breast US: Assessment of Technical Quality and Image Interpretation [http://radiology.rsna.org/content/223/1/229.full.pdf+html](http://radiology.rsna.org/content/223/1/229.full.pdf%2Bhtml)

**Editor's comments:**

This can be applied to other ultrasound specialities. If individual operator data is collected the results of this audit can be used for revalidation/CPD purposes.

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**Published Date:**

Friday 7 October 2011

**Last Reviewed:**

Sunday 24 July 2022