This is the author accepted manuscript (AAM) of ‘Radiographers filling the mammography screening gap, but where's the evidence?, Clerkin, N.Ski, C.F.Brennan, P.C.Strudwick, R. et al. Radiography, Volume 29, Issue 4, 827 – 828. which appears in it’s final published form here: https://www.radiographyonline.com/article/S1078-8174(23)00124-4/fulltext#%20

Guest Editorial

Radiographers filling the mammography screening gap, but where's the evidence?

Introduction

Breast cancer is the most common type of cancer in women worldwide. In 2018 almost 12% of all cancers diagnosed were female breast cancer [1.] Early detection and treatment can achieve survival probabilities of 90% or higher [2.] When the disease is non-invasive, the 5-year relative survival rate is 99% [3]. This provides an opportunity for a treatment pathway that allows for the best chance of recovery. An inexpensive solution to detecting malignancies that are impalpable and measure less than 10mm is Mammography[4.] In the UK, the National Health Service Breast Screening Programme invites women from 50 to 70 years old to attend a mammography appointment every three years and aims to reduce mortality through early detection. The efficacy of a breast cancer screening programme relies on efficient analysis of mammographic images, i.e. identifying suspicious regions of interest and differentiating between normal, benign and malignant image appearances[5,6]. Ongoing training and peer review are recommended to attain optimal mammography interpretation[7]. In 1995, as a result of an increasing demand for mammography interpretation and a paucity of radiologists, training to interpret and report screening mammograms was extended to radiographers[8].

In 2023 the demand continues with over 55,000 women in the UK diagnosed with breast cancer annually. Adding to the burden, the recent Covid-19-inflicted pause to screening resulted in unsurpassed screening demands. In an effort to combat the increased demand, the NHS introduced a 'Long-term Plan' to tackle health disparities and improve diagnosis rates through strategies aimed at fast-tracking diagnosis and treatment. The Plan pledged to invest an additional 10 million pounds to deliver 29 new breast cancer screening units and approximately 70 service upgrades[9]. In order to allow for judicious allocation of funding, clinical governance was prioritised, which enabled these

units to avail of technological upgrades, increase capability and capacity. Alongside advancements in breast imaging, including artificial intelligence and personalised medicine specific to breast density, there remained a need to increase screening capacity, i.e. optimising the skills of the advanced practice radiography workforce providing the infrastructure for success.

In the few studies that have reviewed both radiologist and radiographer image interpretation, it has been suggested that radiographers exhibit lower reader specificity, yet examination of the factors impacting specificity for each professional group has not been considered [10,11,12]. Further, a recent study that examined performance of radiologists and radiographers in double reading mammograms showed no difference in recall rate, cancer detection rate or positive predictive value for either professional group[13]. Notably, whilst there is evidence on the criteria and benchmarks which promote high levels of radiologist performance, little is known about the factors that promote radiographer interpretive excellence[13].

At present, 78% of breast screening units in the UK employ at least one Radiography Advanced Practitioner (RAP) with an average of three or four RAPs per unit [13]. Criteria that impact upon image interpretation have been achieved with platforms such as Breast Screen Reader Assessment Strategy (BREAST) in Australia and Personal Performance in Mammographic Screening (PERFORMS) in the UK. However, it is important to recognise that the focus of both programmes is based on the findings of radiologists. Unfortunately, studies investigating radiographers are minimal. Even so, findings thus far have shown that the skills of RAPs specialised in image interpretation mirror that of radiologists [8,13]. What is needed now is evidence to identify factors associated with image interpretation performance of RAPs[14]. This underrepresented group of professionals contributing to the image interpretation sector deserve equitable review and until this research is carried out and a tailored method of performance analysed, radiography-led reporting cannot be achieved.

A recent systematic review identified that research focusing on mammographic image interpretation performance is underrepresented[14]. This review revealed that although the factors that impact radiologist image interpretation performance may be relevant to RAPs, we cannot be assured of optimised cancer detection until a comprehensive assessment of radiographic performance is achieved. To fill this evidence gap, the authors are engaging in a study delivering a system of assessment of mammography image interpretation specifically for RAPs. Furthermore, the findings of this research will be used to initiate a database to establish standards for benchmarking of screening ability and accuracy of RAPs.

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