

# Involving radiographers in mammography image interpretation and reporting in symptomatic breast clinics: a realist evaluation.

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## Abstract

Breast cancer is most often diagnosed using x-ray imaging (mammography). Images are traditionally interpreted and reported by medically qualified practitioners, 'radiologists'; due to radiologist workforce shortages in recent years, the non-medical practitioners producing the images, radiographers, have become involved in their interpretation. This study used realist evaluation (RE) methodology and qualitative research methods to explore the change.

The aims of the study were to explain how and why mammography image interpretation and reporting (MIIR) could be transferred from radiologists to radiographers and identify what the consequences of this might be for patients, practitioners and service providers.

In Stage 1 of the study literature was reviewed to generate a series of 'programme theories' that hypothesised how responsibility for MIIR might be transferred from radiologists to radiographers, how radiographers could acquire the necessary knowledge and skills and how real-life situated factors might influence their practice.

Stage 2 of the study field-tested these theories and demonstrated that:

- involving radiographers in double reporting roles could improve diagnostic accuracy but required additional resource, did not always streamline the diagnostic journey and did not address local radiologist shortages;
- task substitution of trained and experienced radiographers could release radiologists for other duties in symptomatic clinics;
- role substitution of radiographers for radiologists might enable services to maintain and / or increase symptomatic service provision.

Stage 3 of the study re-tested and refined programme theories about 'role substitution'. In addition to confirming that radiographers could achieve the expertise necessary to replace radiologists in diagnostic breast clinics, Stage 3 identified that:

- developing expertise required both the development of competence across a wide range of cases and the development of confident decision making;
- the multidisciplinary team operated as a 'community of practice' and provided radiographers with a social learning environment within which they improved their MIIR performance and gained acceptance as radiologist substitutes.