EVALUATION OF THE POPULATION DOSE TO THE UK POPULATION FROM THE NATIONAL HEALTH SERVICE BREAST SCREENING PROGRAMME

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After the initial screening stage, some women are invited back for further mammography and possible other investigations. This is referred to as the assessment stage. Breast cancer may be detected at this stage, or women may be referred for a diagnostic surgical biopsy.
Screening histories for each woman, over four screening rounds, were analysed. Data from five screening programmes was used to select 54,610 women into the study. Cases were selected on the basis of being between the ages of 50 and 53 at the start of the NHSBSP (i.e. between 1989 and 1992). This data enabled the following information to be determined.
1) the number of times a woman attended the screening programme.
2) the number of women referred for assessment at each screening round.
This information may be used to deduce the population dose to this group of women averaged over four screening rounds.
Patient doses have been monitored since the programme's inception and are typically 4.5 mGy for two view screening. It is possible to determine the mean glandular dose received by this cohort of women over four screening rounds by multiplying the number of examinations by the mean glandular dose for a typical woman.
Numbers of films, including magnification films taken at first stage assessment were established by means of a postal survey. Average total mean glandular dose was deduced using previous survey data for the screening programme and a multiplying factor to allow for magnification film dose. On average 1.6 full field and 0.15 collimated contact films are taken for each woman (with 2.25 mGy/film and 0.75 mGy/film), 1.0 full field and 0.9 collimated magnification views. The mean magnification film dose to the assessed breast was 5.0 mGy and 1.7 mGy for a collimated magnification film.
A survey of 134 women at screening centres n the North East of England was performed to deduce the mean glandular dose from digital stereotaxis which is almost universally used in breast screening. A typical woman received a dose to the assessed breast of 4.5 mGy with a range of 1.3 to 17 mGy.
This data may be used to deduce the total mean glandular dose over four screening rounds including the assessment stages.

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