OP28

DOES THE PERFORMANCE OF MAMMOGRAPHY READERS IN THE NHSBSP VARY? AND HOW MUCH DOES THIS MATTER?

S Taylor-Phillips,^{1*} A Clarke,¹ M Wheaton,² MG Wallis,³ A Duncan,² AG Gale⁴ ¹Warwick Medical School, The University of Warwick, Coventry, UK; ²The Warwickshire, Solihull, and Coventry Breast Screening Service, University Hospitals Coventry and Warwickshire, Coventry, UK; ³Breast Screening Unit, Addenbrookes Hospital, Cambridge, UK; ⁴Applied Vision Research Centre, Loughborough University, Loughborough, UK

10.1136/jech.2011.143586.28

Background Each year in the UK there are ~ 49 000 incident cases of breast cancer, ~ 12,000 deaths from breast cancer, and 2.6 million women are invited for screening by the UK National Health Service Breast Screening Programme (NHSBSP). The NHSBSP aims to reduce mortality from breast cancer through earlier diagnosis and treatment. In the NHSBSP trained mammography readers read more than 5000 cases per year, searching for early signs of cancer. This is a monotonous task, requiring high levels of skill and vigilance and readers require breaks. Readers recall women for further tests if a mammogram is considered suspect. Tests are invasive and can cause anxiety and distress. Only 18% of those recalled have a positive diagnosis.

Objective To measure how mammography readers' performance (recall rate) varies with time of day and time after a break.

Methods Data were extracted for 170 000 cases read by 7 readers 2007–2010 from NHSBSP records at one breast screening centre. Time and date stamps from the records were used to group cases into time slot within which they were read. Time and date stamps were used to calculate when breaks of over 1 h were taken, and for each case when it was read in relation to a break.

Results Recall rate for mammography readers varied between readers, but did not vary significantly by time of day. Recall rate was 2.3% higher for the first ten cases than for the second ten read since a break ($t(6)=4.6$, $p=.004$, 95% CI of difference = 1.0% to 3.5%).

Conclusions Systematic variation in recall rates with time since a break are worrying since they are unlikely to be due to underlying levels of pathology, and therefore may result in both over- and under-diagnosis of true cancer. Vigilance decrements are well recognised in other fields but have not been systematically investigated in screening practice. Developments in breast screening include a planned age-extension of the NHSBSP to 47–73 years without a planned concomitant increase in staffing and the potential worldwide introduction of computer aided detection (CAD) systems which may artificially increase the number of 'breaks' experienced by readers as they investigate CAD reports. Both of these have the potential to decrease rather than improve the NHSBSP's screening performance. Further investigation in a larger number of breast screening centres is necessary.