

# **A Mean Glandular Dose Patient Survey Of 6,006 Women Undergoing Mammography**

A survey was conducted to estimate the mean glandular dose (MGD) for women undergoing mammography during a four-month period and report the distribution of doses, tissue glandular content, and mammographic parameters employed. Clinical data was collected and analyzed from 24,471 mammograms, originating from 6,006 women. The survey data included mammograms from seven modern units using a molybdenum (Mo) anode and either Mo or rhodium (Rh) filter. The Rh filter was used in approximately 7% of the exposures. The Kodak MinR 2000 screen-film system was used with phototiming set to produce an ACR phantom density of  $1.55 \pm 0.20$  O.D. Exposure parameters for each mammogram were automatically recorded onto a floppy disk on each unit. All mammography units were calibrated individually so that based on recorded patient data (mAs, thickness, filter, and tube potential) breast glandular content could be accurately estimated. Phantoms containing 0%, 30%, 50%, 70%, and 100% simulated glandular equivalent material were measured at thicknesses of 2, 4, 6, and 8 cm. The data from the phototimed exposures of these phantoms were used to create an algorithm to estimate the patient's breast composition. The MGD was then estimated for each mammogram based on the normalized glandular dose,  $D_{gN}$ , and calculated entrance exposure in air. This survey found a median MGD of 2.62 mGy. Results include a median patient glandular content of 27.5% and a mean breast thickness of 5.1 cm with a standard deviation of 1.3 cm.