

We are performing an investigation of ultrasound quality control (USQC) programs in North American healthcare facilities. This study consists of a written survey and measurements of USQC parameters at responding sites. The purpose of the survey is to determine the state of present programs and opinions as to which tests should be performed and how frequently. USQC parameters will be measured at the sites two times at six-month intervals to determine which parameters show the greatest change and therefore may be the most useful for QC.

Surveys were sent to over 100 facilities. So far, 35 have responded with a total of 71 machines to be tested. The results to date are as follows: 36% state they have a USQC program, 71% have the manufacturers perform the QC tests, 30% own a QC phantom, and the majority (57%) state their QC tests are performed semi-annually. Problems experienced in order of frequency are: lack of penetration, degraded resolution, poor hardcopy, cyst fill-in, and defective transducer elements.

Tests to be performed on the machines include: display monitor fidelity, depth of penetration, distance accuracy, image uniformity, physical inspection, cyst imaging, axial resolution, and lateral resolution. A phantom has been designed and is being manufactured. It contains arrays of coplanar spherical voids and high contrast cylinders of various diameters. It also includes large low contrast spherical objects. Horizontal nylon filaments that are coplanar with the centers of the spheres will be used to maintain scan head alignment.

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