

Mammographic units are the most regulated X-ray equipment in Radiology. Presumably, all the regulation has had the positive benefit of increasing the quality of mammographic imaging within the United States. But this improvement in quality comes with a price tag and at the present time, the cost of a screening mammogram exceeds the reimbursement with the result that mammographic imaging centers are closing and the delay in obtaining a screening mammogram can be months. Physicists play a critical role in assuring that mammographic equipment is operating optimally and consistently and doing a by-the-book survey does not necessarily assure this. This lecture will present a perspective on how a physicist might perform an annual survey on a conventional mammographic unit that emphasizes those tests that are critical to image quality or can impact the safety of the device while at the same time is thorough and efficient. The outcome of a survey should be that the physicist is confident that the machine produces reproducible high-quality images at low radiation doses to patients.

The educational objectives of this presentation are:

- 1) to provide the physicist with a practical approach to performing a survey on mammographic unit;
- 2) to review the impact of specific survey tests on machine performance and patient safety;
- 3) to suggest a sequence with which survey tests should be performed that improve efficiency and minimize the time required for the survey;
- 4) to review some differences between some common mammographic units of different models and manufacturers that cause tests to be done in different ways;
- 5) to review conditions under which some survey tests should be taken so that relate to clinical use of the machine.