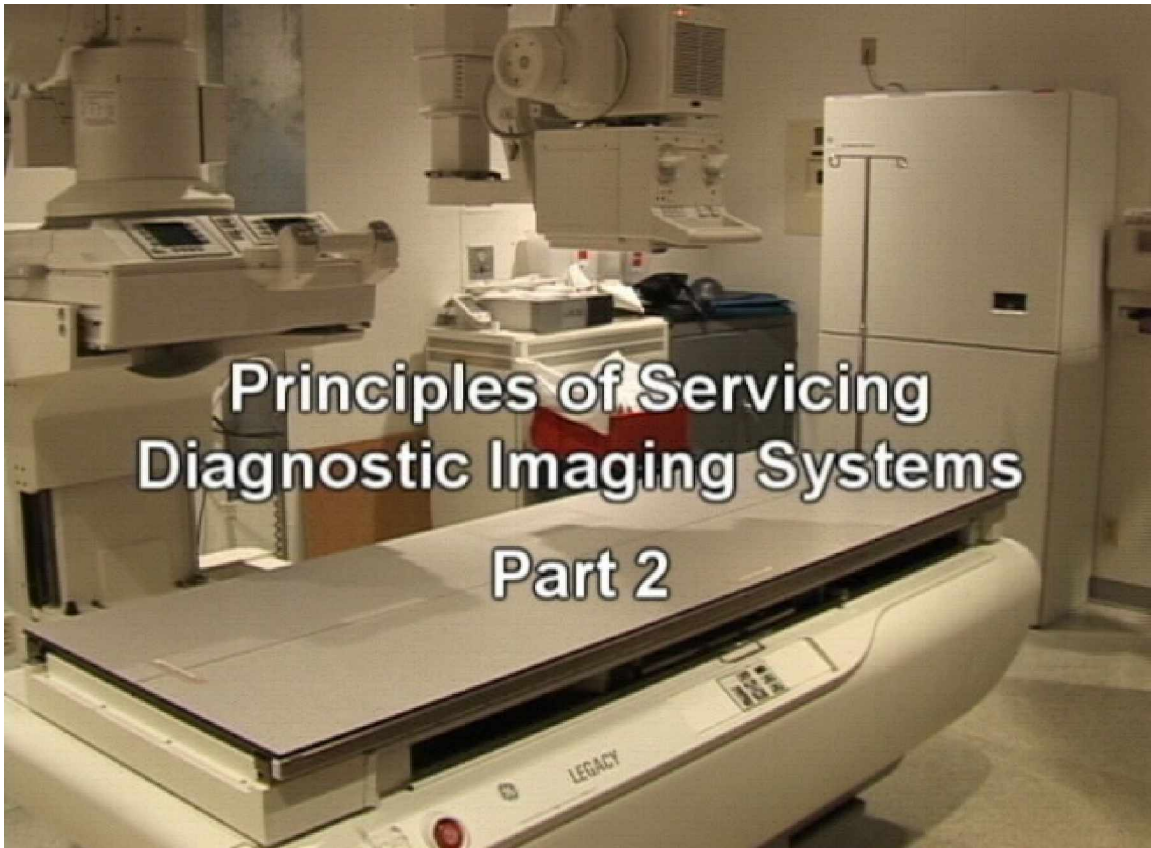


Principles of Servicing Diagnostic Imaging Systems
Part 2

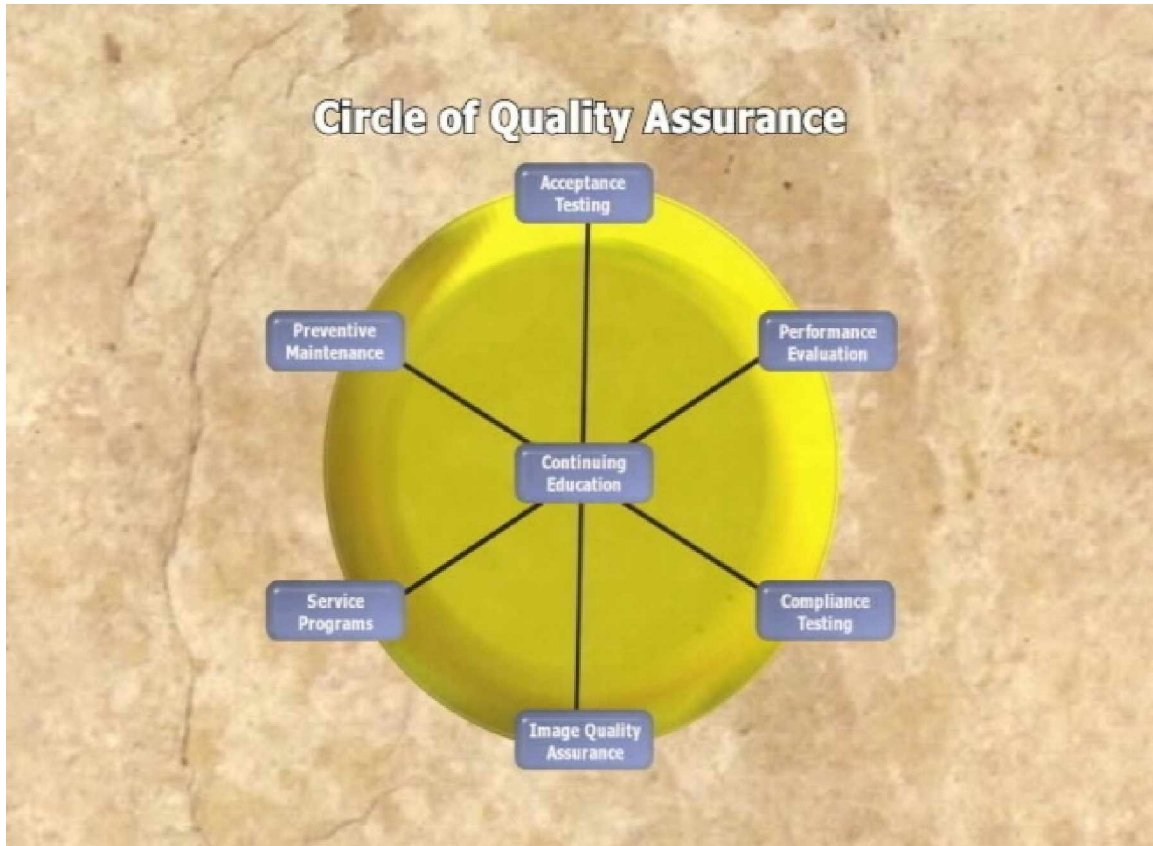


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The Circle of Quality Assurance



The *Circle of Quality Assurance* is a seven step process that ensures the equipment is maintained to the utmost standards, and implies a commitment to continued performance.

The benefits are enhanced image quality , maximizing uptime and patient throughput and reduced cost.

In order to implement this, we need trained personnel under good management

The seven steps are:

Acceptance Testing
Performance Evaluation
Compliance Testing
Image Quality Assurance
Planned Maintenance
Service Programs
Continuing Education

Acceptance Testing - a comprehensive evaluation of equipment performance.

Acceptance Testing ensures that the equipment is operating properly, and establishes a baseline for future comparisons. Makes sure the image quality is adequate, the equipment is safe to use, and that it is compliant with all applicable agencies.

For example, make sure the table is bolted to the floor; the tube rails are installed securely; the table moves according to specifications, and tilts as much as it is designed to tilt.

There are three times when Acceptance Testing should be performed :

1. When the equipment is newly installed, and should be done before use on patients. This should NOT be performed by the installer, but he should be present so the warranty is not voided.
2. Before the warranty expires, so that any problems that need to be taken care of can be handled under warranty. Ensures that problems are not inherited.
3. Before any service contract expires, so that any problems that need to be handled can be covered under the service contract.

Performance Evaluation – defining optimum performance of the system

This covers the image quality issues, and is comprehensive. This is not a calibration, it's an evaluation of the ongoing image quality of a system. Including the resolution of each component of an imaging chain. This measures the performance and deterioration of the system over time.

Compliance Testing – ensures the equipment meets necessary safety guidelines

This ensures that you have met all the state and federal requirement, and should be done by trained personnel. This measures such things as entrance dose to patient and the half-value layer of the system. Only as it pertains to meeting regulations.

Image Quality Assurance – measures image quality over time.

This is usually done by the Radiology Department and deals with daily operations of the system. Includes such things as running a phantom daily before use on patients to verify image quality and warming up x-ray tubes.

Planned Maintenance – scheduled maintenance checks of the equipment.

Planned maintenance covers scheduled maintenance, like mechanical and electrical checks, replacing light bulbs, cleaning, lubricating. Also called “Preventive Maintenance”. Helps to ensure the equipment is operating properly.

Service Programs – covers unscheduled repairs to the equipment.

These are corrective actions that are performed in response to equipment failure. Includes identifying recurring failures. When the equipment is repaired, this also includes applicable portions of the performance evaluation as necessary to verify that the repairs are complete and satisfactory.

Continuing Education – ensures personnel competence.

This is something we use to correct deficiencies in knowledge and maintain proficiencies. This includes department managers, radiology technicians, and maintenance and repair personnel.

*Traits of a Circle of Quality Assurance Plan
Administrator*

Competent
Well-Supported
Sense of Urgency

Tips for Successful Circles

Don't try to do it all at once, all of this should not be part of a planned maintenance program. Do a Performance Evaluation one month, Compliance Testing the next month, and Planned Maintenance the month after.

During any evaluation, don't stop to repair the problem unless that's the purpose of the visit. Finish the task at hand, because you may run out of time and miss a safety issue.

Benefits of a Circle of Quality Assurance Program

Quality Patient Care
Safe Working Environment
Reductions in Costs
Satisfaction of a Job Well Done