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ENSURING RADIATION SAFETY CONTROL AND INDUSTRIAL QUALITY CONTROL IN X-RAY ROOM

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Abstract:

Ensuring safety is a complex and time-consuming task, which requires compliance with all the principles of protection and safety of personnel and the public. The quality of control in X-ray rooms is affected by a number of parameters. To maintain the constant performance of X-ray plants, quality checks must be carried out regularly.

Legal requirements and international basic safety standards for radiological safety require compliance with medical exposure standards.

One of the difficulties in the operation of equipment in radiation diagnostics is the lack of regulatory and methodological documentation for quality control, as well as universal methods for assessing the quality of studies.

Keywords: radiation safety, quality assurance, quality control, diagnostics, production control, work environment safety.

INTRODUCTION

Ensuring safety is a complex and time-consuming task, which requires compliance with all the principles of protection and safety of personnel and the population [1, 2]. The quality of control in X-ray rooms is affected by a number of parameters. To maintain the constant performance of X-ray plants, quality checks must be carried out regularly. It is relevant to introduce the concept of "clinical audit" - a common tool for assessing quality.

World practice shows that the widespread use of X-ray computed tomography for diagnostics leads to a significant increase in the levels of exposure of patients [3]. Legal requirements and international basic safety standards for radiological safety require compliance with medical exposure standards. Such a radiation safety audit represents only a small part of a comprehensive audit. The results of these audits should be considered and used in the conduct of a comprehensive clinical audit in the context of the IAEA recommendations [4].

PURPOSE: to consider some aspects of production control of radiation safety and to provide quality control in x-ray rooms

Regular quality control ensures:

- proper functioning of medical x-ray machines;
- reduces the harmful effects on patients;
- eliminates unnecessary double exposure;
- reduces the cost of x-ray departments.

The production control program establishes a system of radiation control and regulates the rights and obligations of persons exercising production control over radiation safety (RPC) in the institution. Increasing the level of medical care is usually associated with the implementation of a quality management system (international standard ISO 9001:2008) [5] and in relation to management and medical processes in the clinic

Objectives of industrial radiation monitoring:

- obtaining information on individual and collective exposure doses of personnel and the public under all conditions of human life, as well as information on all regulated values characterizing the radiation situation;
- ensuring safety and (or) harmlessness for humans and the environment of the harmful effects of production control objects through the proper implementation of sanitary rules and hygiene standards, the implementation of sanitary and anti-epidemic (preventive) measures.

To carry out production radiation control, a person responsible for production control over radiation safety from among the personnel is appointed. [6].

MATERIALS AND METHODS.

One of the difficulties in the operation of equipment in radiation diagnostics is the lack of regulatory and methodological documentation for quality control, as well as universal methods for assessing the quality of research [7].

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In particular, the World Health Organization (WHO) recommends the use of six dimensions of quality that are required for a health system [8]:

- efficiency;
- expediency;
- availability;
- acceptability for the patient;
- justice;
- safety.

The quality management level of the x-ray department is determined by calculating quality indicators grouped into the following three main categories: human resource control, control of physical assets, and work environment safety. For what, it is necessary to develop a questionnaire-questionnaire in subsequent studies. At the same time, take into account that the presence or absence of quality factors in the questionnaire leads to the assignment of points of 1 (passing) or 0 (negative), respectively.

RESEARCH RESULTS.

For example, overall performance, assessed as quality assurance (16 points), is the sum of the scores from:

The first category (human resource management). Seven points: patient records, personnel certifications, patient protection, professional retraining, patient dosimetry, quality assurance manual, and on-the-job training.

The second category (management of physical assets). Four items: quality control program, equipment maintenance reports, quality control results, and equipment license.

Category 3 (working environment safety). Five points: public safety, personnel safety, personnel monitoring, radiation warning signs and a designated radiation safety officer.

The quality assurance administration rating of an object is calculated as the ratio of the number of points to the 16 indicators under consideration.

CONCLUSION

When considering some aspects of the production control of radiation safety and ensuring quality control in X-ray rooms, it was planned to introduce the concept of "overall efficiency", which is evaluated as an element of quality assurance.

The production control program should establish a regular system of radiation monitoring and regulate the rights and obligations of persons exercising production control of radiation safety in the institution.

It shows how to integrate the role of clinic managers in quality control of equipment performance without sacrificing radiological protection.

Evidence-based systematic monitoring is envisaged for the development of guidelines as part of the quality assurance program.

To eliminate the difficulty in the operation of equipment in radiation diagnostics, it is necessary to develop normative and methodological documentation for quality control, as well as universal methods for assessing the quality of studies.

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