

# Clinical Audits – a concept for their implementation in Switzerland

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## Introduction

The use of ionizing radiation in medicine has increased enormously over the past years. Annually worldwide, more than 3'600 million X-ray examinations are performed, 37 million nuclear medicine procedures are carried out and 7.5 million cancer patients are treated by radiotherapy [1]. Due to these impressive numbers and the fact that there exist no dose limits for patients it is of particular importance to fulfil the two basic principles of radiation protection – justification and optimization. While in the past much effort has been made to optimize radiological procedures the aspect of justification has been almost completely neglected. This is critical since recent publications have shown that up to one third of all diagnostic examinations are not justified [2, 3]. Clinical Audits allow a systematic and continuous assessment of processes performed in clinical radiology (diagnostic radiology, nuclear medicine, radiotherapy). Thereby, unjustified radiological processes are identified and eliminated and justified radiological processes are optimized. This finally results in a substantial reduction of both patient doses and health care costs.

## Material and Methods

The key position in the organizational structure of Clinical Audits in Switzerland is filled by a group of experts. These experts are representatives of the stakeholders involved in the radiological processes such as radiologists, nuclear medicine professionals, radio-pharmacists, radio-oncologists, radiographers, medical physicists, and members of insurers and patient organizations. The group of experts is provided with the required authority by the Federal Office of Public Health. Its tasks are manifold: to define the guidelines for good clinical practice, to plan and coordinate audit programs and to instruct and advise the auditors. The actual clinical audits are carried out by a team of auditors. Auditors should be independent, competent and experienced. An audit lasts typically 2 - 5 days (depending on the complexity of the process to be audited) and covers the overall assessment of the radiological process. The results of the audit together with potential optimization methods are discussed at the end of the audit with the radiological department and are reported to the group of experts as well as to the Federal Office of Public Health.

## Results

The result of a successful implementation of Clinical Audits in Switzerland is described by an Audit cycle. This cycle consists of the selection of a specific radiological process together with the corresponding guidelines for good clinical practice, assessing the local practice in the radiological department, comparing it with the guidelines, implementing changes when necessary, and re-auditing after a certain time. With each cycle quality improves which ultimately benefits patients.

## Discussion

The continuous increase in the frequency of medical radiological examinations using ionizing radiation (and thus the rise of accumulated patient doses and health care costs) pose a big challenge to all the involved stakeholders. Clinical Audits prove to be an essential tool to increase significantly quality in patient care by identifying and eliminating unjustified radiological processes and optimizing justified radiological processes.

## References

- [1] World Health Organization: WHO Global Initiative on Radiation Safety in Health Care Settings, 2009. [http://www.who.int/ionizing\\_radiation/about/med\\_exposure/en/index.html](http://www.who.int/ionizing_radiation/about/med_exposure/en/index.html)
- [2] Swedish Radiation Safety Authority: National Survey on Justification of CT-examinations in Sweden, 2009.
- [3] America's Health Insurance Plans: Ensuring Quality through Appropriate Use of Diagnostic Imaging, 2008.