

DEVELOPMENT OF A FRAMEWORK FOR THE CONTINUING TRAINING OF MEDICAL PROFESSIONALS ON PATIENTS' RADIATION PROTECTION

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REGULATORY CONTEXT FOR RADIATION PROTECTION FOR PATIENTS

In France, according to the PHC, since 2009 :

- Practitioners

- Individuals involved in the practical aspects of medical radiological procedures

- Individuals who perform the quality assurance program of equipments

must have followed a [theoretical and practical training](#) on radiation protection of patients

Until 2019, the ministerial order of the 18th May 2004 defined for each professional the program of the training on patients' radiation protection both for healthcare professionals with the training in the basic curriculum of medical and dental schools and for professionals whose initial training did not include teaching on patient' radiation protection.

Organisms which deliver training just had to follow the program defined by the order.

REGULATORY CONTEXT FOR RADIATION PROTECTION FOR PATIENTS

A that time,

- Validity of the training was set at 10 years, regardless of the medical purpose
- Only a training certificate (no validation) was delivered

Evaluation of these trainings was carried out by the CEPN at the request of ASN (**2010/2011**) with the main conclusions that were that :

- **the program of the training on RP which was regulatory mandatory was followed**
- **the rate of professionals who were trained was satisfactory except for specific medical staff (surgeon particularly)**

BUT training programs were very variable in terms of content and duration, and sometimes unsuitable with regard to expectations,

- trainers had very diverse skills and not necessarily on the specialty
- validity period (10 years) estimated too long by trainees

REGULATORY CONTEXT FOR RADIATION PROTECTION FOR PATIENTS

Evaluation of the training programs relating to the radiation protection of patients exposed to ionizing radiation

Some recommendations were given regarding:

- the need to define a strategy for training
- the need to define the objectives and not only describe the content of the program (a training scheme that could be adapted for each professional category)
- the need to reinforce pedagogical skills for trainers
- the need to revise the ministerial order

Working groups had been set up with ASN and healthcare professionals in order to develop a training framework

End of the work at the early 2012

REGULATORY CONTEXT

DIRECTIVE 2013/59/EURATOM of 5 December 2013 provides that member states shall ensure:

- that practitioners and professionals involved in medical radiological procedures have **adequate education, information and theoretical and practical training** for the purpose of medical radiological practices, as well as relevant competence in radiation protection and
- that **continuing education and training** after qualification is provided

NEW REGULATORY CONTEXT (2018)

French public health code provides that

- the use of ionizing radiation on the human body is reserved for physicians and dental surgeons and radiographers.
- all the professionals have to be trained to use radiation protection to be involved in the medical procedures and benefit from continuing training in patient radiation protection
- the initial training of physicians who perform medical procedures using radiation ionizing or professionals who participate in these procedures, includes a teaching relating to radiation protection of patients.
- a resolution from the French nuclear safety authority (ASN) determines the objectives of the continuing training in radiation protection of patients and the rules that the organizations responsible for providing this training have to follow.
 - ASN has to establish guides with healthcare professionals, defining training programs, teaching methods, evaluation modalities and the duration of the training

→ Resolution N° 2019-DC-0669 of the Nuclear Safety Authority, June 11th, 2019 amends the resolution N° 2017-DC-0585, March 14th, 2017

NEW REGULATORY CONTEXT

Professionals guides for patients' radiation protection

Since, 18 professional guides provided by these resolutions were written between 2018 and 2023 with a strong involvement of the National Professional Councils (NPC)

<https://www.asn.fr/espace-professionnels/activites-medicales/guides-professionnels-de-formation-continue-a-la-radioprotection>

Imaging and image-guided interventional practices

Guide for physicians qualified in radiodiagnostics and medical imaging (2018)

Guide for physicians and surgeons performing image-guided interventional practices (2021)

Guide for physicians qualified in interventional cardiology of children and adults (2020)

Guide for rheumatology physicians performing image-guided interventional practices (2021)

Guide for medical physicists for imaging, scanography and image-guided interventional practices (2018)

Guide for radiographers for imaging and scanography (2018)

Guide for radiographers for image-guided interventional practices (2019)

REGULATORY CONTEXT

Professionals guides for patients' radiation protection

Radiotherapy and brachytherapy

Guide for healthcare professionals (physicians, medical physicists and radiographers) in the field of external radiotherapy and brachytherapy (2018)

Nuclear medicine

Guide for physicians qualified in nuclear medicine (2019)

Guide for medical physicists in nuclear medicine (2018)

Guide for radiographers, technicians and qualified nurses (nuclear medicine) (2018)

Guide for operating theater nurses (IBODE) or those working in nuclear medicine departments as long as they participate in carrying out the procedure (2019)

Radiosurgery

Guide for neurosurgeons practicing intracranial radiosurgery under stereotaxic conditions (2023)

REGULATORY CONTEXT

Professionals guides for patients' radiation protection

Dental

Guide for dental surgeons and specialists in stomatology, oral and maxillofacial surgery (2018)

Radiopharmacy

Guide for radiopharmacists (2018)

Guide for hospital pharmacy technicians (2018)

Professionals working on medical devices

Guide for professionals carrying out reception, performance control of medical devices and user training (**reception and performance control**) (2019)

Guide for professionals carrying out reception, performance control of medical devices and user training (**installation, maintenance, training**) (2019)

Validity : 7 years for radiotherapy, brachytherapy, nuclear medicine and image-guided interventional practices with an exception for physician radiologist (10 years)

10 years for dental surgeons and specialists in stomatology and for professionals working on medical devices

REGULATORY CONTEXT

General objectives of the continuing training :

- 1) to recognize the components of the risks inherent to ionizing radiation in the medical field
- 2) to apply the regulations
- 3) to operationally implement the principle of justification of exposures
- 4) to operationally implement the principle of optimization for doses received by exposed people
- 5) to analyze professional practices from the perspective of managing the risks inherent to ionizing radiation, regarding the justification and optimization principles for the delivered doses to improve the radiation protection of exposed people
- 6) to inform the exposed people so that they can become active participants in their own radiation protection.

Each guide sets out the general training objectives according to the specificities of the medical activity concerned.

Organizations responsible for providing this training have to deliver a certificate validating the training after an evaluation.

— FIRST EVALUATION OF THE IMPLEMENTATION OF THE NEW FRAMEWORK FOR THE CONTINUING TRAINING

In 2021, ASN asked to CEPN to carry out an inventory of the implementation of the guides of this new framework by the professionals

A focus was done particularly on continuing training for the radiographers in imaging and for healthcare professionals in the field of external radiotherapy in order to:

- Evaluate more precisely the conformity of the training delivered in comparison with professional guides
- Question the teaching methods implemented by collecting feedback from trainers and trainees

— FIRST EVALUATION OF THE IMPLEMENTATION OF THE NEW FRAMEWORK FOR THE CONTINUING TRAINING

CEPN methodology of the evaluation was based on

- Census of organizations providing training in patient radiation protection
- Implementation of questionnaires for the quantitative evaluation of all continuing training guides and two more questionnaires for the qualitative evaluation specifically for radiographers in imaging and radiotherapy professionals
- Data in terms of training sessions, trainees profiles, etc from 2019 to 2021 (data collected at the early 2022)
- Interviews with different training organizations of different status (public, private, association, training institute, ...) on the qualitative elements of their training as well as their perception of the new training system.
- Analysis of the responses
- Recommendations

→ To be noted : Questionnaires took into account some questions on the management of the training sessions during the covid period

FIRST EVALUATION OF THE IMPLEMENTATION OF THE NEW FRAMEWORK FOR THE CONTINUING TRAINING RESULTS

- 36 organizations offering continuing education in patient's radiation protection answered to the questionnaires: national professional councils, professional associations, health centers, schools/institutes carrying out also initial training (nurses and radiographers schools for example), and private organizations which have developed this continuing training to meet the need
- After the evaluation, we can say that:
 - A census of the training offer is now available
 - An offer of continuing training exists for each specialty.

FIRST EVALUATION OF THE IMPLEMENTATION OF THE NEW FRAMEWORK FOR THE CONTINUING TRAINING RESULTS

- Content and methods comply with the recommendations of the guides in the majority of cases
- Implementation of training has been strongly impacted by the covid crisis: remote training (videoconferencing and virtual classes)
- Trainers and trainees are satisfied with the new framework, which they consider better than the previous system
- The integration of practical workshops in this new framework is appreciated by the trainees, as well as the involvement of a professional of the medical field in the development of the training.
- The evaluation of the continuing training, which did not exist in the previous system, is also a positive point.

FIRST EVALUATION OF THE IMPLEMENTATION OF THE NEW FRAMEWORK FOR THE CONTINUING TRAINING RESULTS

- Some difficulties encountered for the implementation of the new framework :
 - the different durations of validity of training for the same profession in different specialties (e.g. radiographers in imaging vs other specialties)
 - the multiplicity of trainings to be organized for the different fields for all the professionals in the same care center
 - difficulty in mobilizing professionals for face-to-face training now that habits have been established with distance training
 - difficulty in mobilizing professionals, particularly physicians, to contribute to the development and delivery of training (during a period of staff tension)
 - framing of continuing training has led healthcare centers to outsource this training --> leading to additional costs and a more complex organization (e.g. call for tenders often necessary)

FIRST EVALUATION OF THE IMPLEMENTATION OF THE NEW FRAMEWORK FOR THE CONTINUING TRAINING RECOMMENDATIONS

Several proposals regarding the :

- implementation of :
 - inter-professionals training for the same specialty such as for radiotherapy (physicians, medical physicist and radiographer at the same time)
 - inter-specialties training for the same profession (for radiographers or medical physicists)
 - Inter-company training
- harmonization of the validity duration of training certificate (per professional category at least)
- to extend a continuing training to prescriber physician (regarding the justification principle)

FIRST EVALUATION OF THE IMPLEMENTATION OF THE NEW FRAMEWORK FOR THE CONTINUING TRAINING PERSPECTIVES

Meetings between ASN and national professional councils to discuss how :

- **mobilizing physicians** in their specialties for a greater involvement in training: patient's radiation protection is specific to the protocols implemented
- organizing/promoting **multi-professional** and inter-company **training** which is of interest for the sharing of experience (questioning of one's professional practice in relation to that of others)
- supporting the need to **keep the face-to-face practical training workshops**, planned by the guides, in order to maintain time for exchanges between trainers and trainees whereas the distance training has been installed with a difficult go back