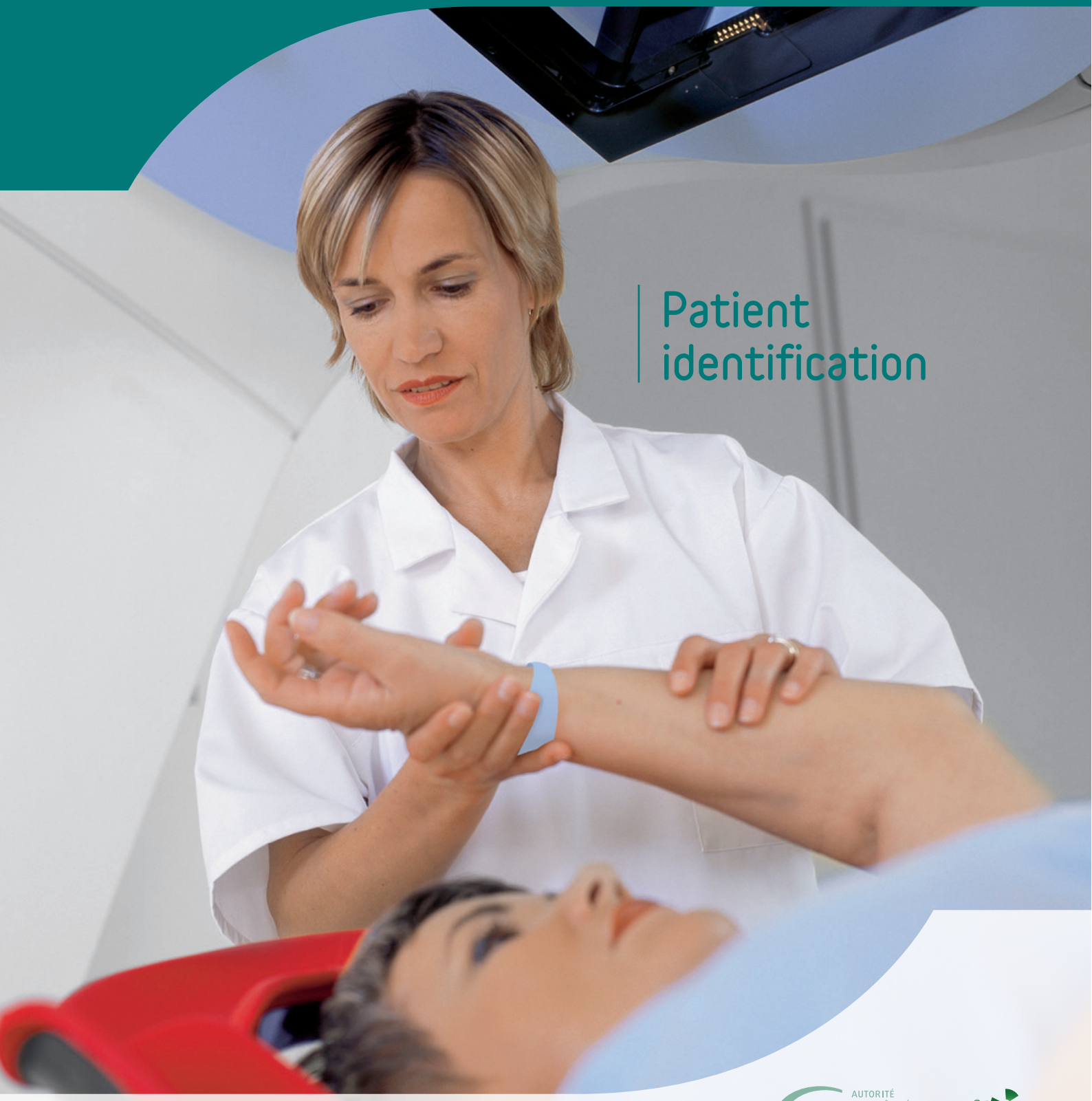
Patient safety

Paving the way for progress

N°1

March 2011



Patient identification

Newsletter for radiotherapy professionnals

AUTORITÉ DE SÛRETÉ NUCLÉAIRE

SOCIÉTÉ FRANÇAISE DE PHYSIQUE MÉDICALE

Société Française de Radiothérapie Oncologique

Patient safety - Paving the way for progress is edited by the French Nuclear Safety Authority (ASN) in the framework of the multidisciplinary working group dedicated to experience feedback to radiotherapy professionals.
Executive editor: Jean-Christophe Niel, Director General of ASN **/ Chief Editor:** Nathalie Clipet **/ Editorial committee:** French Society of Radiation Oncology (SFRO), French Society of Medical Physics (SFPM) and French Association of Radiographers (AFFPE**) / Design:** Margoland®

>Editorial

Improvement in radiotherapy safety is based on the progressive implementation of quality procedures by professionals. Identification of risks, analysis of dysfunction, implementation of corrective actions, etc. This progress, supported by the French Nuclear Safety Authority (ASN), is fuelled by the declaration of significant radiation protection events.

The Patient safety bulletin was created to provide you with experience feedback.
Developed by a joint effort of the ASN, the French Society of Radiation Oncology (SFRO), the French Society of Medical Physics (SFPM) and the French Association of radiographers (AFFPE), the bulletin will provide information on an area of progress twice a year. Each topic—patient identification in this case—will be decoded and supported by the procedures and best practices of the services.

Lessons learned are to be shared by all radiotherapy professionals. The email bulletin will also be published on the site **www.asn.fr** in the professionals section.
Don't hesitate to share it with others!

Enjoy! Come back in the autumn for an issue on "the verification session"!

The Editor

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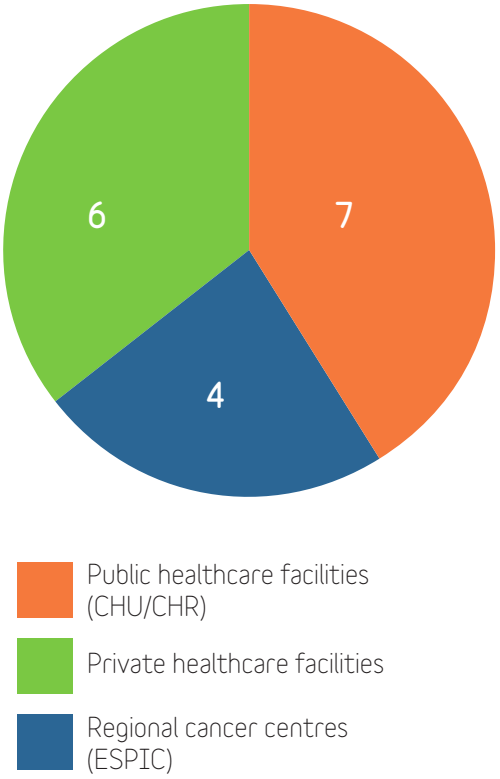
>Key figures

In 2009, approximately 180,000 patients were taken in for radiotherapy in France.
In 2009, the ASN received 234 reports regarding a radiotherapy event.
An error in radiotherapy patient identification was at issue in 17 of the reports to the ASN in 2009.

These events occurred in public healthcare facilities (CHU/CHR) (7), regional cancer centres (ESPIC) (4) and private healthcare facilities (6), throughout France.

Among these 17 significant radiation protection events, eight were classified as level 0, eight were classified as level 1 and one was classified as level 2 on the ASN-SFRO scale.



>Decoding

1. Description of events reported in 2009

• Number of sessions involved
For each significant radiation protection event, the identification error occurred during one single session of external radiotherapy. This error involved the complete radiation session in 11 cases, and part of the session for 6 cases.

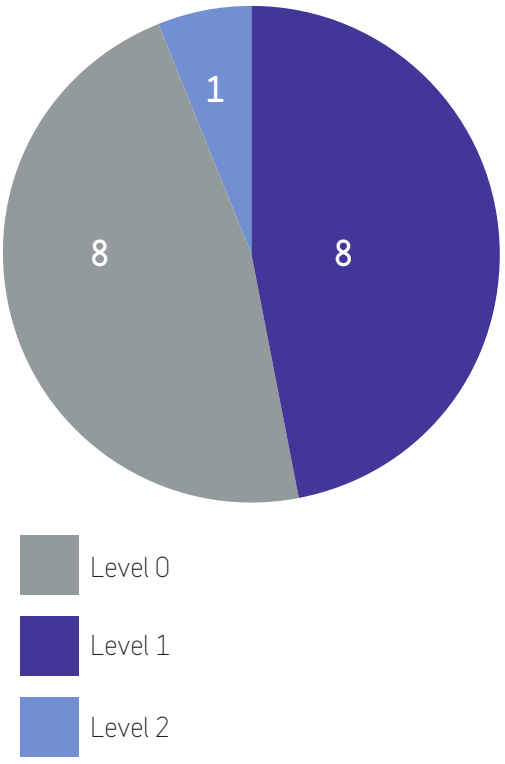
• Location
All of the the events involved patients for which the selected treatment was that of a patient treated for the same anatomical region (prostate, breast, brain, head and neck cancer).

• Treatment technique
Of the seventeen external radiotherapy events reported, three events implemented special techniques :
- Two events involved fractionated stereotactic radiotherapy or radiosurgery for a brain tumour. For these two cases, the error was made during the selection of the target positionners.
- One event involved external radiotherapy with respiration management. The file of the previous patient was used for respiratory guiding.

• Detection of the error

When?
The identification errors were noticed during the treatment session for 7 of the cases and after the session for 10 cases. The error was detected, in several cases, when the right patient arrived in the waiting room.

By whom?
In the majority of cases, a radiographer noticed the error. In one case, in stereotactic radiotherapy, the neurosurgeon detected the error.



2. Known consequences

In the case of classically fractionated treatment, no effect is normally expected, considering the low dose delivered (2 Gy). If the event occurs during a stereotactic radiotherapy, even more since there was just one session (radiosurgery), the biologically equivalent dose delivered per session is higher, requiring appropriate surveillance for each patient by all professionals involved (radiation-oncologist, neurosurgeon, organ specialist).

3. Main causes identified

The identified causes can be placed in 3 categories:

1. Organisation of work:
• insufficient exchange of information between the radiographers present in the treatment room. The radiographer R1 selected the computer file of patient P1 while the radiographer R2 was getting patient P2 settled,
• a period when the radiographers were changing shifts, leading to the presence of too many radiographers at the treatment room,
• a disturbance of the radiation-oncologist's activities during the selection of the target positionners in the particular case of one stereotactic radiotherapy treatment,
• heavy workload linked to the practice of "overbooking" with two appointments at the same time for one treatment machine.

2. The patient:
• physical similarity between two patients,
• patients who are hard of hearing, have trouble with French, are elderly or very weak and brought in on a stretcher: following questioning by a radiographer, these patients confirmed an identity that was not their own,
• same (1 case) or similar (1 case) last name.

3. Technical devices and tools:
• lack of patient photo in the paper and/or computer file,
• failure of a linac resulting in the patient being moved to a second identical treatment machine, leading to an overload of this machine.

4. Areas for further analysis

Five questions for further analysis of significant events and their causes:
1. Was the division of tasks between the different radiographers clearly defined?
2. Has the organisation of team shift change periods been studied?
3. Have conditions providing for the prevention of unexpected interruptions in the radiation-oncologist's activities been implemented?
4. Have the characteristics of patients (those who have difficulty communicating for example) been taken into account in the definition of activities and assessment of risk?
5. What organisation has been foreseen in the event of disturbance in activity (a patient urgently addressed, linac failure, etc.)?

>Steps for progress

1. Good practices

Three recommendations resulting from the experience feedback of the reporting establishments:

1. systematic addition of a photo to the paper and computer file,

2. change in identification procedure with implementation of active questioning: the patient provides his or her identity instead of responding to the radiographer's call (see Experience from the René Gauducheau centre),

3. in the case of stereotactic radiotherapy treatments:
• double-checking of the target positionners before starting treatment,
• verification sessions without the patient, to check the coherence of the patient file,
• work organisation limiting disturbances of activity of the person in charge of selecting the target positionners .

2. Innovative initiatives

Certain centres are exploring innovative solutions from the technological point of view:

1. solution based on the use of biometric or morphometric data (see experience of the Oscar Lambret centre),
2. bar code on appointment cards and patient accessories
3. system based on radio-frequency technology providing for the identification of the patient, accessories and immobilisation devices..

3. Experience of the centres

Biometric patient recognition

The Oscar Lambret Centre (Lille) has been experimenting radiotherapy patient recognition by digital finger print since January 2011.

Dr. Eric Lartigau, head of the radiotherapy-brachytherapy department, tells us about the start of this one-year piloted study.

1. Why choose biometric recognition?
"Despite all the precautions taken, we are never protected from same names or data input errors. And a number of patients are not able to communicate. To this day, biometric recognition seems to us to be the safest."

2. Have you encountered organisational or regulatory difficulties?
"Four years of work were required to complete the file with the CNIL[1]. Six additional months were needed between the CNIL's approval and deployment on site."

3. What is the cost of this innovative practice?
"The total material cost (biometric devices) is approximately 30,000 euros, to which one must add the man-hours needed to set up the connections to the hospital computer system."

[1] *CNIL : French National Commission for information technology and liberties*

Active questioning of patients

At the René Gauducheau Centre (Nantes), in radiotherapy, patients have been giving their own names since the beginning of 2010.

Albert Lisbona, head of the medical physics department, gives a first account of this identity verification procedure.

1. What does this operating mode consist in?
"During the first days of treatment (and during radiographer shift changes), the radiographer asks the patient to present him- or herself and verify the last name, first name and date of birth on the medical file, the ID photo of the patient and the file number for the treatment station."

2. Have you encountered difficulties implementing this?
"In general, the procedure has been well understood. However, having the same people question the patients on a daily basis has sometimes created distance between the radiographer and the patient, in contradiction with the establishment of a climate of trust."

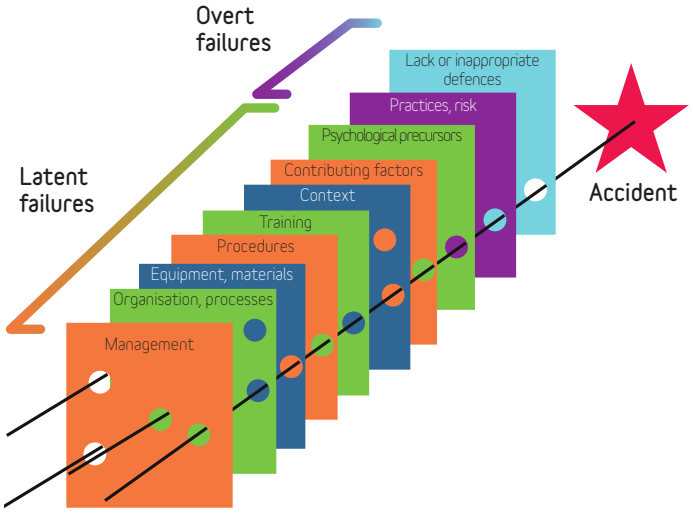
3. What are the initial results?
"Since implementation, we have not had any identification error.
The personal bracelet used for hospitalised patients has been an additional asset from the point of view of attention to identity. The situation is more complex at work stations with extended treatment work hours requiring one or more radiographer shift changes (transmissions).

>Methodological references

Defence-in-depth and lines of defence

The defence-in-depth approach relies on the implementation of independent and successive lines of defence to reduce risk when a particular safety component is compromised or failing. A line of defence may be, for example, human, organisational, procedural or technical.
As shown on the diagram, an accident results from the cumulative failure of several system defences.

Sources of organisation failure according to Reason, 1993



>Further reading

Lessons learned on the international level

Report of Radiation Oncology Safety Information System (ROSIS)
http://www.clin.radfys.lu.se/reports/ROSIS_Newsletter_3_Patient_identification.pdf

"Towards Safer radiotherapy"
published by British Institute of Radiology, Institute of Physics and Engineering in Medicine, National Patient Safety Agency, Society and College of Radiographers and by The Royal College of Radiologists.
See section 5.3 Patient identification (p 37)
http://www.ipem.ac.uk/docimages/2329.pdf

"Radiotherapy risk profile" WHO guide
page 32, this guide indicates that 3 distinct check points are necessary to ensure the patient identification process.
http://www.who.int/patientsafety/activities/technical/radiotherapy_risk_profile.pdf

Information system

Studies of the Group for the modernisation of the hospital information system (MSIH) for patient identification in the field of health
http://www.gmsih.fr/fre/nos_publications/articles_publications/identification_du_patient

Biometric systems and CNIL

All biometric systems are subject to prior approval from CNIL
CNIL believes that biometric techniques are more or less sensitive depending on whether they rely on the recognition of physical characteristics "leaving traces" in daily life (digital fingerprints, DNA, etc.). These traces may be compared with previously registered biometric elements to retroactively identify the person present in a location at a given moment.
http://www.cnil.fr/fileadmin/documents/approfondir/dossier/CNI-biometrie/Communication-biometrie.pdf

Defence-in-depth for radiotherapy treatment

Human error, Reason J.
Presses Universitaires de France; 1993

IRSN Report No. 2008-02 "Improving safety in radiotherapy treatments by developing a culture of safety"
http://www.irsn.fr/FR/expertise/rapports_expertise/Documents/radioprotection/IRSN_Radiotherapie-CulturedeSurete_200802.pdf

"Methodological principles for the management of risk in health establishments"
ANAES Report of January 2003
http://www.has-sante.fr/portail/upload/docs/application/pdf/gestion_risques_2006_10_06__10_14_23_40.pdf

Management of radiotherapy risk
Francois P., Giraud Ph., Mollo V., Lartigau E.
Cancer bulletin. Volume 97 • No. 7 • July 2010, 867-872

Analysis of radiotherapy risk
Francois P., Lartigau E.
Cancer/Radiotherapy 13 (2009) 574-580

ASN guide No. 4 «Self-assessment guide for external radiotherapy patient risk».

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ASN, March 2011