

*Barcelona, Spain*

## **CTE 2 - Interactive**

Technologist + Radiation Protection Committee

**Sunday, October 13, 11:30-13:00**

### **Session Title**

#### **Risk and Incidents**

### **Chairpersons**

Sebastijan Rep (Ljubljana, Slovenia)

Giorgio Testanera (London, United Kingdom)

### **Programme**

11:30 - 11:50 Klaus Bacher (Ghent, Belgium): Risks and Incidents in Nuclear Medicine - A Medical Physics Perspective

11:50 - 12:00 Discussion

12:00 - 12:20 Aljaz Socan (Ljubljana, Slovenia): Potential Risk and Incidents in HotLab

12:20 - 12:30 Discussion

12:30 - 12:50 Giorgio Testanera (London, United Kingdom): Management of Risks and Incidents in Nuclear Medicine

12:50 - 13:00 Discussion

### **Educational Objectives**

1. To be able to identify hazardous situations which can result in accidental exposure.
2. To be aware of the consequences of potential exposure.
3. Understand procedures in cases of contamination.
4. Recognize and prevent misadministration of radiopharmaceutical.
5. To understand the safety assessment.
6. To understand the importance of knowledge of acquisition protocols and QC in accidental exposure preventing.
7. To be aware of the importance of education in accidental exposure preventing.

### **Summary**

In a Nuclear Medicine department is necessary to carry out a risk assessment with appropriate periodicity in order to be able to verify the on-site safety conditions and possible improvements in order to reduce the effects of ionizing radiation, as well as other physical, chemical, biological and ergonomic risks in any healthcare department. Incidents in nuclear medicine can vary from a spillage or contamination to something that can have devastating implication such as misadministration of therapy dose of radioiodine to a lactating mother. Misadministration of radiopharmaceutical (RF) is the commonest incident. Misadministration means giving the RF to the wrong patient, giving the wrong RF or wrong activity to the patient. Another incident is unjustified examination of pregnant or lactating female patients. Another type of misadministration is to use the wrong route of

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administration, which includes complete extravascular injections that can result in very high absorbed exposure at the injection site especially if the volume is small, the activity is high, and the radiopharmaceutical has a long retention time. Incidents can also occur after imaging on gamma cameras or hybrid systems, SPECT/CT and PET/CT. It is most often associated with wrongly chosen image methods, incorrect selection of collimator, false acquisition parameters, impact of QC of the equipment. Errors can also occur when performing CT scanning in the SPECT/CT or PET/CT. By educating health care workers, and by circumscribing their actions, human error may be minimized. However, some number of mistakes will always, unavoidably, be made, and no amount of training or double-checking can erase that fact.

### **Key Words**

Ionizing radiation, radiopharmaceutical, SPECT/CT, PET/CT