

Non-medical imaging exposures: a pilot study of the Italian situation

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1. Background

For the first time the forthcoming EC BSS (2011 draft) has introduced an article (Chapter V, art. 23) dedicated to the "non medical imaging exposures (NMIE)" which are defined as: *Any deliberate exposure of humans for imaging purposes where primary motivation for exposure is not related to health or well-being of the individual exposed* (with some differences with the definitions of the IAEA BSS (interim edition) and the ICRP 103-2007).

On the other hand, the Italian legislation currently prohibits the direct use of ionizing radiation on human beings for primary scope other than diagnosis or therapy of the exposed person or clinical scientific research.

2. Objective of this study

To gather information on established practices of non-medical imaging exposures in Italy in view of the new EC BSS which request that Member States shall ensure the identification, by means of surveys or by any other appropriate means, of practices involving NMIE. A first attempt to map NMIE in Europe was performed in the framework of Sentinel project with a survey (Italian partner: Regional Hospital of Udine). This investigation starts from there.

Some examples of NMIE in Italy follow:

3a. Cargo screeners

Where: since 2003, 29 X- and γ - cargo screeners have been installed in Italian sea ports.

Frequency: they amount to 5% of the total of controls. In 2010 more than 40.000 scans performed.

Concern: raised by truck drivers and associations for immigrants right defense

Dose: no direct measurements available

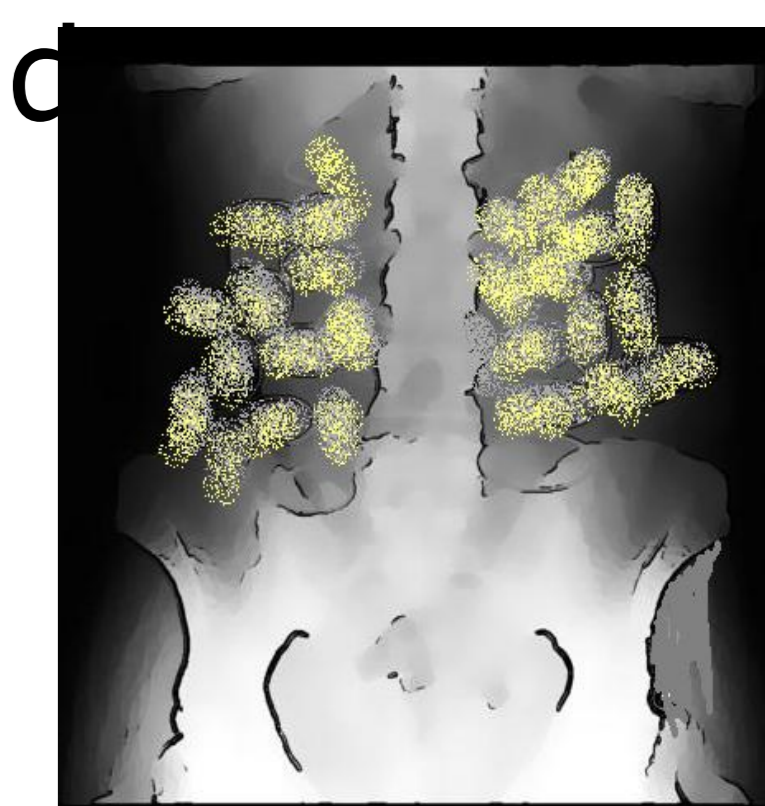


3b. Search of drug

Drugs swallowed by the so-called "body-packers" are detected by abdomen radiography

Where: typically, performed in public hospitals.

Authorization: given by Italian Judiciary Authority.



Web sources report (2011) the settling of a small jail/clinic in Milan airport, managed by the Prison Police and the Revenue Guard Corps. The X-ray results are sent to a hospital for interpretation.

Does this practice guarantee radiation protection aspects as much as in hospitals?

3c. Body scanner with i.r.

In 2010 the possibility of using body scanners in airports sparked a heated debate.

Their use was **not authorized** by the Ministry of Health because of the current Italian regulations.



3d. Age assessment

In case of prosecution, a multidisciplinary protocol is followed, including **as an ultimate step** the wrist radiography.

Where: public hospitals (as a first choice, in paediatric departments)

Authorization: given by the Italian Judiciary Authority.



4. Conclusions

The Istituto Superiore di Sanità, as the adviser body of the Minister of Health, in collaboration with the regional hospital of Udine, have started to gather information on established practices of non-medical imaging exposures in Italy. Collected information were incomplete because of the multiplicity of the sources of information and the responsible Bodies and highlighted the need for a national survey.