

SENTINEL: A MULTINATIONAL EU COORDINATED PROJECT FOR SAFETY AND EFFICACY OF NEW RADIOLOGICAL IMAGING EQUIPMENT



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- Slovenia
- Spain
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- UK

MAIN OBJECTIVES OF THE PROJECT

- Address efficacy and safety issues in all digital diagnostic examinations and nuclear medicine
- Particular emphasis on high dose procedures and sensitive groups

OBJECTIVES

- Establish physical and clinical image quality criteria and link the two
- Establish reference levels for new procedures, particularly for interventional radiology and cardiology
- Develop good practice guidelines for new digital imaging equipment and procedures
- Develop training courses and supporting material

The SENTINEL project aims to establish the safety and efficacy of new radiological imaging techniques with particular emphasis on frequent examinations, high dose procedures and sensitive groups. The project has been funded by the European Commission under the specific programme (Euratom) for research and training in the nuclear energy field (2002-2006) as part of the Sixth Framework.

Health services in the EU are a growing fraction of national wealth, typically 10% of GDP. Within this radiological imaging is gaining increasing prominence and now accounts for up to 10% of hospital revenue and 15% of capital equipment budgets, thereby identifying it as an investment of major social importance. This increase has been driven by new developments in equipment, digital imaging, medical devices, and IT industries; paralleled by novel clinical practices and modalities. Striking examples include the introduction of digital technologies to replace film, and the range of sophisticated angiographic techniques now used widely. This project deals with radiation protection, safety, and related issues that arise from these developments. It covers over 90% of patient examinations, 60% of the collective dose from medical sources, and approximately 50% of the collective dose from man-made sources. In practice this project deals with almost all radiological digital imaging outside of CT Scanning.

SENTINEL brings together colleagues from a number of candidate member states to form a well established research group and EFOMP (European Federation of Organisation of Medical Physics).

WORKPACKAGES

1. Functional performance and standards for radiological equipment

Lead: H. Zoetelief, Delft, The Netherlands

- Investigate image quality indices and referral criteria
- Equipment performance surveys
- IEC/CENELEC inputs for standards



2. Efficacy and safety in digital radiology, dentistry, and nuclear medicine

Lead: P. Busch, Trier (Germany)

- Develop functional performance standards
- Patient dose surveys
- Optimisation studies



3. Efficacy and safety in Cardiology

Lead: R. Padovani, Udine (Italy)

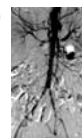
- Refine on-line dosimetry
- Take into account complexity
- Develop reference values



4. Efficacy and safety in high individual dose procedures (interventional radiology)

Lead: E. Vano, Madrid (Spain)

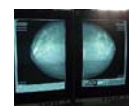
- Methods for dose assessment
- Patient dose survey protocols
- DICOM header dosimetry data



5. Efficacy and safety in population screening and imaging of sensitive groups

Lead: H. Bosmans, Leuven (Belgium)

- Digital mammography
- Risk/benefit studies
- Tissue sampling techniques



6. Ethical, justification and related issues

Lead: J. Malone, Dublin (Ireland)

- Consider ethical issues in radiation protection
- Informed consent implies that the public are aware of the risks for medical procedures
- Specific issues (e.g. pregnancy)



7. Good practice guidance and training.

Lead: K. Faulkner, Newcastle (United Kingdom)

- Training needs identified
- Training syllabus developed
- Dissemination to member states

