



Project no. FP6-036497

"TMT Handbook"

**Triage, monitoring and treatment of the public exposed to a malevolent use
of radiation**

Instrument: **STREP**

Thematic Priority: **RAD PROT-2005/6-3.3.4.1-2**

Publishable Final Activity Report

(<http://www.tmthandbook.org>)

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1.- Project Execution

European national emergency response plans have long been focused on accidents at nuclear power plants. Recently, the possible threats by disaffected groups have shifted the focus to being prepared also for malevolent use of ionising radiation that are aimed at creating disruption and panic in the society. The casualties will most likely be members of the public.

According to scenario, the number of affected people can vary from a few to mass casualties. The radiation exposure can range from very low to substantial, possibly combined with conventional injuries. There is a need to develop practicable tools for the adequate response to such acts and more specifically to address European guidelines for triage, monitoring and treatment of exposed people.

The main objectives of the project were to:

1. Define the terms of reference for the handbook by considering all major scenarios involving the malevolent use of ionising radiation or radioactive material
2. Collect and collate information on the current strategic response and strategies to monitor, treat and manage members of the public exposed to the malevolent use of ionising radiation.
3. Identify best practice for triage, monitoring, treatment and management of victims of radiological terrorism.
4. Draft guidelines for best practice of triage, monitoring and treatment published in the form of a modularised handbook for various responder categories and provide a platform for discussion on the different approaches currently adopted by EU Member States.
5. Distribute the draft to national emergency authorities for comments and invite them to test it in national emergency response exercises.
6. Refine the handbook based on feedback from end users in a devoted workshop and deliver a final version of the handbook, after a peer-review process.
7. Harmonise the Handbook modules with existing IAEA public documents in this field and WHO response guidelines and training materials.

In order to achieve these goals, several tasks were undertaken:

1. Evaluation of different scenarios to set the project's terms of reference
2. Guidelines were drafted for:
 - monitoring and triage of exposed populations;
 - treatment, management and long term follow up of affected persons;
 - public information and risk communication.
3. These guidelines were collated in a draft modularized handbook that was then distributed to a wide range of end users. All participating stakeholders were asked to comment on the content and encouraged to test it in national emergency response exercises.
4. A stakeholder workshop was organized to enable the end users to provide feedback on the handbook and how it works in exercises.

5. A refined version of the handbook was produced on the basis of feedback. A wide distribution of the handbook to national emergency response institutions is envisaged as well as incorporation into training programmes.

It is expected that from these tasks the European aptness to respond to emergencies concerning malevolent use of ionizing radiation or radioactive material will be greatly enhanced.

The members of the consortium were: Belgian Nuclear Research Center (SCK•CEN) (Coordinator), Norwegian Radiation Protection Authority (NRPA), Enviros Consulting Ltd. (United Kingdom), Radiation and Nuclear Safety Authority (STUK), (Finland), Health Protection Agency (HPA), (United Kingdom), World Health Organization (WHO) and Central Laboratory for Radiological Protection (CLOR), (Poland).

A number of activities associated with several work packages (WP) were carried out, such as:

- June 2007: A questionnaire was sent to members of EUREMON (EUROpean Emergency MONitoring) network to collect information on the monitoring, management and treatment of people in an emergency after accidental or deliberate releases of radionuclides or exposure to radiation. (WP2).
- July 2007: The invitation to test and/or comment on the Handbook was sent to the EU-countries. A [leaflet](#) giving a short presentation of the project was made and distributed. (WP5).
- August 2007: Lead by WHO, one of the tasks was to develop evidence-based practical guidelines on treatment and follow-up of victims. To achieve this goal, a consultancy meeting was held at the WHO headquarters in Geneva, Switzerland. The meeting brought together experts from WHO member states and consortium members to achieve a consensus on best practices concerning medical and public health response to radiation emergencies resulting from malevolent acts (WP4).
- November 2007: In the course of the project it became clear that triage and monitoring had to be linked to hospital care and follow up; hence, a joint WP3/WP4 meeting was held on 8 - 9 November 2007. The objective of the meeting was to ensure a consistent approach between WP3 (guidelines for triage and monitoring) and WP4 (guidelines for treatment, management and long-term follow-up).
- March 2008: The Draft TMT Handbook was ready for evaluation and testing by identified end users in the European Union and Norway.
- December 2008: During the period spanning from March 2008 to October 2008 a number of stakeholders had the opportunity to test, evaluate, assess, and use the draft version of the handbook. An end-users workshop was organized to collect the end-user's experience from evaluating the Draft TMT Handbook and/or from exercises in order to make the final TMT Handbook as goal oriented and user friendly as possible. In total, 28 participants from 16 countries participated at the Workshop in addition to the TMT Consortium members.
- February 2009: The first TMT Handbook training course is organized and held at the Belgian Nuclear Research Center (SCK•CEN) premises in Mol, Belgium. A total of 43 people take part in it and they represent in equal

percentage medical trained personnel and health physicists or radiation protection specialists. The main objective of the training course was to introduce the contents of the handbook and prepare those who would be responsible for the implementation and use of the handbook in their own home countries.

- March 2009: The final version of the TMT Handbook is completed and is ready to be deployed throughout the European Union once the printed copies are ready in mid-April.

2 Dissemination and use

The dissemination work started with the consultation of emergency response institutions, followed by the feedback workshop on the content, structure and usefulness of the Handbook. The final publication of the Handbook has been possible through the generous contribution of the Norwegian Research Council. A number of these hard copies will be distributed to EU Member States and relevant international organisations. The electronic version of Handbook will be available free of charge to registered users on the project's web page. The web page will also remain open to the public and important findings and reports will be posted there. A dedicated section will gather the experience and knowledge gained by the users of the Handbook. It is also envisaged that the Handbook will be available to nations outside the European Union through the Radiation Emergency Medical Preparedness and Assistance Network of the World Health Organization.

There are 5 key elements to the exploitation and dissemination plan. These are:

1. The continuation of the website to enable interested parties to monitor the developments of the field and disseminate information on the handbook. Public information will be disseminated and new initiatives will be published on the website as well.
2. The creation of a network of TMT Handbook users will enable the practical application of response principles providing for a harmonised framework building upon existing national and international practices.
3. Provisions for exercising the contents of the Handbook to ensure the main aims of the Handbook are well understood and adopted by the end users. This will allow for quality-enhancing practical modifications, based on the positive engagement of the end users.
4. The TMT handbook network should also provide the opportunity to exchange information on the organisation of training courses on the implementation of specific elements of the Handbook.
5. Last but not least, the consortium will attempt to establish a self-sustainable formula to continue developing the material and contents of the handbook.