

Radiological Emergency Preparedness in the United Kingdom – Progress in 2009



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UK

- GHSI Rad-nuc working group 2009 programme
- International database of laboratories who can undertake radionuclide bioassay after incidents
- UK contribution to development of questionnaire
- Final questionnaire issued to 23 laboratories in UK
 - Public sector
 - Academic
 - Nuclear industry (civil, military)
 - Commercial
- By mid-October 11 responses returned to co-ordinator
- Others expected...

- WHO initiative - support International Health Regulations
- Global network of bio-dosimetry laboratories
 - Complementing existing networks (eg IAEA RANET)
- Providing mechanisms for
 - surge capacity around “core” lab in incident
 - Exercising in “quiet times”
- 2009 work
 - publication of 2008 Biodosenet meeting
 - UK providing group chair (David Lloyd, HPA)
 - Sample transit exercise
 - Capability and capacity questionnaire (46 labs)

TMT

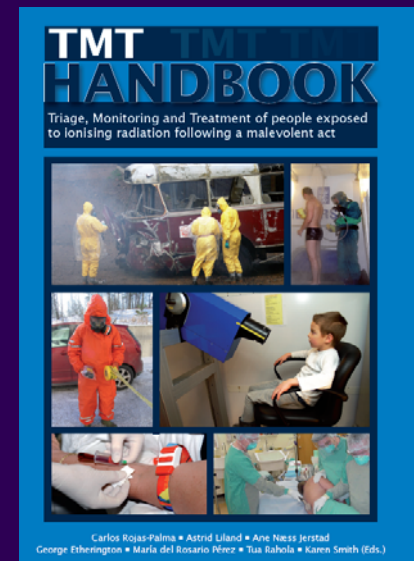
HANDBOOK

Triage, Monitoring and Treatment of people exposed to ionising radiation following a malevolent act



Carlos Rojas-Palma ■ Astrid Liland ■ Ane Naess Jerstad
George Etherington ■ María del Rosario Pérez ■ Tua Rahola ■ Karen Smith (Eds.)

- Triage, Monitoring and Treatment Handbook
- Practicable guidelines for use in (malevolent) radiological incidents
- European Union (EU) project – 2 ½ years
- Handbook published in April 2009
- Can be downloaded from www.tmthandbook.org
- Training course, Belgium in February 2009
- Future EU work planned
 - Users group
 - Online training
 - Handbook update with experience
- Application in UK MORRIS project



- Monitoring and Assessing Risks to people in Radiological Incidents
- HPA project to develop operating procedures for personal monitoring in incidents
- Bring together radiation specialists and local responders
- Response time procedures
 - Setting monitoring programme (who, where, what...)
 - Establishing monitoring unit(s)
 - Operational protocols
 - Reporting procedures
- Pilot areas : one “nuclear”, one “non-nuclear”
- Swine flu delayed progress but reinforced demand for risk assessment and reporting

Portable Whole Body Monitors



- HPA has a transportable whole body monitor
 - Designed for reactor accidents
 - Sensitive internal contamination measurements
 - Limited throughput
 - Difficult to transport
- Investment in portable units based on high-resolution radionuclide identifier [Kramer, Canada]
 - 2 units purchased, 2 more planned
 - Simple set-up and operation
 - Quantification following portal screening
 - Positive radionuclide identification



- HPA investment in lightweight personal monitoring portals
 - External or internal gamma emitter contamination
 - Step increase in capacity, fewer “experts” needed
- 8 units – rapidly deployable, battery operated
- Operating procedures
 - “gatekeeper”
 - parallel detection stations
- Tested in exercise
 - personal data capture is limiting factor
- Instrument response to specific radionuclides
- Other work is looking at rapid screening for high intake using hand-held devices already in use



High throughput biodosimetry research



- Current bio-dosimetry is not very scalable
- Exploring higher throughput techniques
 - DNA strand break in chromosomal protein, H2AX assay
- High dose capacity
 - Up to 30 samples per hour
- Longer analysis
 - Down to “few millisieverts of recent exposure”
- Ultimately “suitcase” deployable

Probabilistic Risk Assessment



- UK considering new generation of nuclear power
- Probabilistic risk assessment to support safety studies for off-site impact of potential accidents
- Previous generation of codes developed 1980's – in “mainframe” environment (MARC, COSYMA)
- New system (PACE) under development
 - Geographically based reporting
 - Link to improved Meteorological Office models
 - Response-time “spin-off” capability?
 - To be available commercially

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