



REMPAN eNEWSLETTER

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From the desk of REMPAN Coordinator:

Dear Reader, welcome to the 30th issue of our e-Newsletter!

New year started with new challenges. Undoubtedly, you heard and are following the news about the [US Government's decision to leave the WHO](#). This decision, much discussed in the global media, has prompted WHO management to apply austere mitigation measures, which are affecting the ways of our working. In these turbulent times, it is critical to stay strong and united. We cannot put the global health security on pause. No matter how hard it may get, WHO is committed to implement its mandate of the global leader on health and to support our member states to tackle health emergencies and other issues threatening human health.

Thank you for your support and cooperation. Life-saving work of WHO would not be possible without your support. Thank you for being REMPAN!



Dr. Zhanat Kenbayeva

Featured story:

The 156th session of the WHO Executive Board (EB) took place on 3–11 February 2025.

The EB is composed of 34 technically qualified members elected for three-year terms. The main functions of the Board are to implement the decisions and policies of the Health Assembly, and to advise and generally facilitate its work.

The 156th EB session resulted in several significant outcomes:

- Global Health Strategy: Adoption of the [14th General Programme of Work](#) (GPW-14) for 2025-2028, aiming to save 40 million lives over the next four years.
- Pandemic Agreement: Member States committed to concluding negotiations on the WHO Pandemic Agreement by the next World Health Assembly.
- Noncommunicable Diseases (NCDs): Strengthened efforts to address NCDs, which are among the leading causes of death globally.
- WHO Academy: Official opening of the WHO Academy in Lyon, France, to enhance WHO's impact in countries.
- Health Emergencies: Updates on the response to major ongoing health emergencies and the implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel.
- Climate Change and Health: Adoption of the Draft Global Action Plan on Climate Change and Health.

These outcomes reflect the Board's commitment to addressing critical global health challenges and improving health outcomes worldwide.

Proceedings recordings are available from this page: <https://www.who.int/about/governance/executive-board/156th-session>

WHO's Six Strategic Objectives as outlined in the [Global Health Strategy for 2025–2028: Advancing equity and resilience in a turbulent world](#) (GPW-14):

Respond to **climate change**, an escalating health threat

1

Advance the **PHC approach** and **essential health system capacities** for UHC

3

Prevent, mitigate and prepare for health risks from all hazards

5

Address **determinants of health** and **root causes of ill health**

2

Improve health **service coverage** and **financial protection**

4

Rapidly detect and sustain response to health emergencies

6

News from the WHO Secretariat


◆ Three years of war: WHO supports Ukraine's health sector's capacity for preparedness and response to radiation emergencies.

24 Feb 2025 - Since the start of the full-scale war in Ukraine three years ago, WHO documented over 2,254 attacks on health care, which have severely disrupted health services, exemplified by a recent strike in Odesa damaging a major children's clinic. The conflict has intensified needs for trauma care and rehabilitation, with an estimated 100,000 amputations by mid-2024. WHO is working to build a resilient health system, focusing on primary care, mental health, and rehabilitation services. Access to health care remains unequal, especially in front-line areas, with significant barriers for internally displaced persons. WHO's efforts include installing modular primary health clinics, supporting health finance reforms, and expanding professional development for health-care workers. WHO emphasizes the need for international support to ensure no one in Ukraine is left behind, focusing on recovery, response, and reforms to rebuild the health system and restore hope – [further reading](#) on “Three years of war: rising demand for mental health support, trauma care and rehabilitation”.


WHO impact in 2024

Through a variety of emergency activities implemented by WHO teams, 4.7 million people were reached directly and indirectly in 2024.

 **Supported over 921 health institutions**, distributing 783 metric tonnes of medical supplies and equipment worth more than US\$ 26 million.

 **Provided safe medical spaces and winterization solutions in 19 health facilities for the health workforce** and approximately 590 000 patients through the provision of modular prefabricated units and heating units.

 **Delivered 13 modular structures for PHC centres** and two prehospital emergency medical care basepoints, benefiting over 50 000 people.

 **Strengthened the capacities of 50 local organizations to improve quality**, adhere to standards such as gender mainstreaming in health, and secure funding for sustainable response efforts, including project proposal development.

 **Trained 8700 health professionals** in the whole country to strengthen their practices in emergency care management and essential PHC.

Medical Evacuation arrangements have been out in place by the Ministry of Health (MoH) of the Ukraine in cooperation with WHO. Since March 2022, the MoH Medevac Coordination Unit has successfully managed and coordinated over 3500 medical evacuations abroad for patients who required specialist trauma treatment, and oncology, rehabilitation, or prosthetic care. Further information: <https://www.who.int/europe/news-room/spotlight/730-days-of-war--medevac-teams-provide-vital-relief>



◆ 2025 WHO Emergency Appeal for Ukraine: 68.4 M USD needed.

[The document can be viewed here.](#)

People in need in 2025

 **12.7 million** people in need (5.2 million in 10 priority regions)

 **9.2 million** people in need of health assistance

 **3 million** people targeted by the Health Cluster partners, i.e. in 10 priority regions and war-affected communities

The number of people in need has slightly increased in the 10 priority regions⁷ (5.2 million) compared with 2024 (4.9 million) due to more significant disruption of the health system, the burden of NCDs, and higher demand for mental health and psychosocial support (MHPSS), caused by war-related distress.

7. The ten priority oblasts (Ukrainian regions) are: Odeska, Khersonska, Mykolaivska, Zaporizhka, Dnipropetrovska, Donetsk, Luhanska, Kharkivska, Sumska, Chernihivska.

News from the WHO Secretariat

◆ A Table-top exercise in Khmelnytsky region, Ukraine

WHO continues to support Ukraine's preparedness for radiological nuclear emergencies in the context of a project funded by the European Commission to strengthen the preparedness for chemical, biological, radiological & nuclear events in Ukraine and neighboring countries under the [EU4Health program](#). On 27-28 Nov 2024, WHO held a tabletop exercise in Khmelnytsky, which was based on a fictitious nuclear power plant accident scenario. It brought together relevant national stakeholders, such as the regional hospitals, the State Emergency Service of Ukraine, the Ukrainian Center for Disease Control and Monitoring, the Regional Department of Health, the Regional Center of Emergency Medical Care & Disaster Medicine, the Ministry of Health, and the Department of Radiation Accident Consequences Forecasting, Department of Civil Protection. The exercise participants appreciated the participation of the [International Atomic Energy Agency \(IAEA\)](#), presenting the Agency's Response and Assistance Network (RANET). "This shows the importance of international collaboration and how support can be rendered by other UN agencies." Dr Kamal Akbarov, CBRN Technical Officer.

The participants were divided into groups, and the RACI-matrix (Responsible, Accountable, Consulted & Informed) was used to address the different exercise injects. This model allowed participants to understand the complex picture of who does what, when, and why.

"The use of different injects in a scenario like this allows to identify the gaps and to focus on specific capacity building efforts in the future". Dr. Zhanat Kenbayeva, WHO's technical lead and focal point for radiation emergency preparedness and response.



◆ Ongoing Regular Briefings of the WHO-Collaboration Centers in Europe

To stay in contact continuously, the WHO Regional Office for Europe invites the Collaborating Centers to regularl virtual briefings addressing various common topics, such as:

- To inform CCs about WHO - core priorities, flagship initiatives and recent events
- To focus on cross-cutting thematic areas, e.g. ***One Health: From Approach to Action.***
- To share updates in WHO CC
- To bring visibility to the tangible deliverables of WHO CCs
- Provide opportunity for WHO CCs to ask questions
- To bring visibility to new WHO CCs recently designated
- The 2nd European WHO Programme of Work 2025-2030 (EPW2)"



The past meetings took place on [October 16th 2024](#), [December 18th 2024](#) (to watch the recordings a passcode may be required). The last meeting was held on 05 Feb 2025 with the special focus on „Health Innovations“. ◆

News from the REMPAN Secretariat

◆ New UN General Assembly Resolution

The UN First Committee approved a Resolution on nuclear war effects and scientific research (document [A/C.1/79/L.39](#)), which will set up **an independent Scientific Panel on the effects of nuclear war**. The Panel will be tasked with examining the physical effects and societal consequences of a nuclear war on a local, regional and planetary scale, in the days-weeks-decades following nuclear war, and will publish a comprehensive report, making key conclusions and identifying areas requiring future research. [The call for Nominations to the Committee is open until 17 March 2025!](#)

◆ Meetings

The **7th coordinating WHO BioDoseNet meeting** was held in Hiroasaki in Sept, 2024. This network of cytogenetic labs was created in 2007 as “network of networks” as a surge capacity tool to be used in case of a mass-casualty nuclear events. It provides a platform for coordination and information exchange for more than a hundred cytogenetic laboratories world-wide. (read more on p. 6) WHO contributed to the NEA/OECD’s **Working Party on Nuclear Emergency Matters** meeting held in London in October 2024, and to the European Radiation Protection Week (**ERPW-2025**) held in Rome in November 2024.

◆ iCAM guideline development project

The Guidelines Development Group (GDG) for the internal Contamination Assessment and Management (iCAM) project continued its work throughout the 2nd half of 2024 and completed the systematic reviews based on the research questions formulated by the GDG. The project methodology is following the protocol described in the [WHO Handbook for guideline development](#). The list of GDG members and their short biographies is available [here](#).

The final meeting of the GDG was hosted by the new [French Authority for Nuclear Safety and Radiation Protection](#) (ASNR - Autorité de Sûreté Nucléaire et de Radioprotection, formerly IRSN and ASN) in Paris on 15-17 Jan 2025.



◆ WHO Academy opened in Lyon, France - 17 December 2024.

Supported by France, the WHO Academy campus in Lyon opened its doors!

The Academy promotes lifelong learning across the health sector leading to a healthier world. It will provide a wide range of learning opportunities both online and in-person to health workers, managers, public health officials, policymakers, WHO staff, and members of the public. The campus offers:

- 11 000 sq m of space
- 22 training rooms
- 2 distance-learning rooms
- 1 cutting edge tech simulation centre
- 1 emergency operations centre
- 1 auditorium with interpretation booth
- 1 TV recording studio
- Library
- Online learning platform

www.WHOAcademy.org

The Opening ceremony was attended by the WHO DG DR Tedros, President of France E. Macron and other Heads of States, and key partners. The event was [streamed](#) live on WHO's social media accounts (the [web](#), [Facebook](#), [Twitter](#), [YouTube](#) and LinkedIn).



News from the Network Members

◆ The 7th Coordination Meeting of the WHO BioDoseNet, September, Hirosaki, Japan - By BioDoseNet Co-chairs Dr. Ruth Wilkins, Health Canada, and Dr Stephen Barnard, UKHSA.

The 7th Coordination Meeting of the WHO BioDoseNet took place on September 24th, 2024, in Hirosaki, Japan, as a satellite meeting to the EPRBioDose Conference. Hosted by Dr. Zhanat Kenbayeva from the WHO, and chaired by Dr. Ruth Wilkins from Health Canada, the meeting brought together biodosimetry experts from around the world. The event was held in a hybrid format, with 31 participants attending in person and 11 joining online, representing 15 countries along with the representatives the International Atomic Energy Agency (IAEA), ARADOS and RENEb networks.

WHO BioDoseNet is a global network of biodosimetry laboratories focused on the harmonization of biodosimetry methods, quality assurance, knowledge sharing, and conducting intercomparison exercises. These initiatives aim to ensure that biodosimetry practices are reliable, consistent, and applicable across different regions



and contexts.

At this meeting, several network members provided updates on recent activities including Dr. Tomisato Miura (Japan), Dr. Andrzej Wojcik (EU/RENEb), Dr. Ursula Oestricher (RENEb), Dr. Adayabalam Balajee (USA), Mr. Stephen Pecoskie (Canada), Dr. Stephen Barnard (UK) and Dr. Nagesh Bhat (India). Dr. Merriline Vedamony (NIAID) gave a presentation on the new directions of biodosimetry, including the development of a US biodosimetry network, and Dr. Oleg Belyakov provided a report on the biodosimetry activities at the IAEA.

As the day concluded, participants discussed key future activities for BioDoseNet. A major focus was the much-needed rejuvenation of the network's website to improve communication and resource sharing. There was also an in-depth discussion on the network's need for further inter-laboratory comparisons.

Finally, a new co-chair was also selected to replace Dr. David Lloyd (UKHSA) who has retired after many dedicated years of service. We are pleased to announce Dr Stephen Barnard (UKHSA) as the new co-chair, joining Dr. Ruth Wilkins to lead the network in the years ahead. ◆

Other news

◆ Meeting of the German WHO-Collaboration-Centers in Berlin – September 2nd 2024

The German Federal Ministry of Health invited the German WHO-Collaboration-Centers to a meeting to intensify the network structures, strengthen the base in co-working and the exchange about current and future developments between those centers. The centers had the chance to present their individual structures and projects as well as to address helpful ways of support by the ministry or the government.

◆ Hybrid Seminar “Medical and Public Health Consequences of Nuclear War: We Must Prevent What We Cannot Cure!” by Ira Helfand, MD

On September 23rd 2024 in Johns Hopkins Bloomberg School of Public Health, Baltimore, USA, member of the International Steering Group of the International Campaign to Abolish Nuclear Weapons (ICAN) Ira Helfand, MD, addressed the potential scenario of a nuclear war and possible prevention strategies for professionals as well as non-professionals. He co-authored also in an [editorial](#) dealing with the topic.



News from the Network Members

◆ RENEb Artificial intelligence (AI) Workshop: “Research priority on the application of artificial intelligence in biological dosimetry”

- By Dr. Daniela Hladik and Dr. Ursula Oestreicher, Federal Office for Radiation Protection, BfS

The RENEb network is a legal association for biological and retrospective physical dosimetry, prepared to improve the capacity of individual dose assessment in case of unclear large-scale irradiation scenarios from radiological or nuclear events. The optimisation of biological dosimetry is an important focus of RENEb and has a major impact on the performance of the network in the event of a major radiation accident.

Artificial intelligence (AI), which is already used in many areas today, is also a valuable option for recognising biomarkers in blood in order to shorten the time-consuming manual analysis of chromosomal aberrations by humans. A 2-day workshop was organised by the BfS in Munich (Germany) to discuss the possibilities of implementing AI in biological dosimetry. On the first day, several presentations were given to provide an overview of the current state-of-the-art of AI in biological dosimetry and the ongoing AI projects of RENEb members.

On the second day, a roadmap for future AI research activities of RENEb was developed. During the discussion, three actions (Fig. 1) were defined, which include the necessary work steps for setting up a RENEb database (Action 1 – Data management), developing AI models (Action 2 – test and optimise existing AI models) and raising funds for this project (Action 3 – Funding and Dissemination). These actions provide the basis for further developments of AI based methods within the RENEb network. It was also decided who will coordinate each action. ◆



◆ 3rd MEENAS Webinar on “Strategic Research Plans for Research in Radiation Dosimetry and Nuclear and Radiological Emergency Response and Recovery”

The MEENAS is composed by ([MELODI](#), [EURADOS](#), [EURAMED](#), [NERIS](#), [ALLIANCE](#) and [SHARE](#)) and presented in this final webinar on 17 October 2024 about Strategic Research Agendas (SRAs) of EURADOS and NERIS concerning radiation dosimetry research.



◆ Webinar “The 26th Fukushima Dialogue”

On 13 October 2024, NPO Fukushima Dialogue organized this webinar on decommissioning, waste management of Fukushima Nuclear Power Plant and the future of the region. Real-time bilingual translation between English and Japanese has been provided. These webinars follow a series of meetings formerly presented as [ICRP Dialogue Initiative](#) in the years 2011-2015.

News from the Network Members

◆ The 7th General Assembly and Annual Network Meeting of RENEb e.V. (European Network of Biological Dosimetry and Retrospective Physical Dosimetry)

- By Dr. Ursula Oestreicher, Federal Office for Radiation Protection, Germany



The 7th General Assembly of RENEb e.V. was held at the European Radiation Protection Week (ERPW) in Rome / Italy on 11th of November 2024. The network provides rapid, comprehensive and standardised methodology for individualised dose estimation after unclear exposure to ionising radiation and is active in emergency preparedness, radiation protection and research. The objectives of the network are closely related to the activities of the WHO BioDoseNet as a global network of biodosimetry laboratories. In the frame of the General Assembly the members were updated on the activities of the network. It was reported that the number of members has continued to increase in the last year and that the number of associate members has now reached a total of 43 individuals from 15 countries from Europe and Asia. In addition, the board of RENEb was reelected with Chair: Ursula Oestreicher (BfS, Germany), Vice Chair: Francesc Barquinero (UAB, Spain), Secretary: Juan Martinez (IRSN, France) and Treasurer: Martin Bucher (BfS, Germany).

In the scientific part of the meeting the following topics were addressed:

- Update on different actions defined in RENEb in relation to the application of Artificial Intelligence in biological dosimetry. Presentations were given by David Endesfelder (BfS/Germany), Juan Martinez (IRSN/ France) and Stephen Barnard (UKHSA/UK)
- Updates on the Biodosetools software, an open source project that aims to be a tool to perform all different tests and calculations needed by biological dosimetry laboratories. Presentation was given by Anna Francès Abellán (UAB/Spain)
- Report on recent developments of a newly established Spanish network for biological dosimetry given by Alegria Montoro Pastor (LaFe Valencia/ Spain)
- Presentation on quality management and experiences and challenges with accreditation for dicentric chromosome analysis according to ISO 15189 and/or ISO 17025 given by Christina Beinke (BfS/ Germany)

The meeting was kindly hosted as a satellite meeting at the ERPW 2024 in Rome.



◆ NATO Workshop on Tools for Triage of the Acute Radiation Syndrome - By Dr M. Port and Dr. P.

Ostheim, Bundeswehr Institute of Radiobiology, Munich, Germany

On 26-29 Nov 2024, NATO workshop "Software Tools for Triage of the Acute Radiation Syndrome" (StTARS) was hosted by the Istituto di Scienze Biomediche della Difesa (ISBD) in Rome, Italy. Lead by Prof. Michael Abend, the event introduced innovative diagnostic tools developed by NATO's Research Task Group on "Ionizing Radiation Bioeffects and Countermeasures." Participants learned to use a cutting-edge software, BAT and WinFRAT, enabling integrated dose estimation by using physical, biological, and clinical inputs, as well as the H-module, which predicts ARS severity based on changes in blood cell counts. The participants discussed emerging diagnostic and therapeutic methods and had a chance to use a unique database of ARS cases from the Chernobyl accident. This hands-on approach enhanced their ability to predict ARS severity and make clinical management decisions. Participants received the downloadable software tools, enabling further training and knowledge-sharing within their respective countries. The event was not only a platform for professional training and scientific exchange but also for fostering collaboration and building relationships across nations. This prestigious workshop highlighted the importance of international efforts in improving diagnostic capabilities and preparedness for radiological emergencies in both civilian and military settings. ◆

News from the Network Members

◆ Activities in Bulgaria - By Prof. Jana Djounova, Director of National Centre of Radiobiology and Radiation Protection (NCRRP) - Sofia, Bulgaria

A collaborative agreement between WHO Regional Office for Europe (WHO EURO) and the Ministry of Health of the Republic of Bulgaria was signed for 2024-2025. The objective of the collaboration is to achieve the goals of the WHO Thirteenth General Programme of Work, 2019-2025 (GWP 13), the European Work Programme, 2020-2025 - "United Action for Better Health in Europe" (EWP), and the national health policies of Bulgaria. The agreement also includes **strengthening emergency preparedness assessment and building on IHR compliance to strengthen Bulgaria's capacity to respond to health emergencies.**

Bulgaria is taking part in the joint EC-WHO project on CBRN preparedness aiming at enhancing the resilience and response capacities of Ukraine and its neighbouring countries to potential CBRN threats.



In this project context, the first seminar on radiation emergency management, radiation protection, and international cooperation was held on 28-30 October, 2024 at the NCRRP. It included the participants from NCRRP, WHO and international experts on CBRN, representatives of Bulgarian emergency medical services, regional health inspectorates, and the civil protection agency of Bulgaria.

Training included a discussion of the characteristics of ionizing radiation and radioactive materials, the differentiation between radiation exposures and radioactive material contamination, radiation protection procedures for protecting staff, biological effects following exposure to ionizing radiation, pre-hospital and hospital readiness planning to strengthen preparedness and decision-making capacities for radiological emergencies, medical treatment and lessons learned. The course discussed also the psychological effects of radiation accidents and international cooperation.

The three-day Seminar included interactive presentations, group and panel discussions, and exchange by experience between participants. The positive evaluation of the participants proves the usefulness of such activities. ◆

◆ The update from the NIAID Radiation and Nuclear Countermeasures Program (RNCP) - By Andrea DiCarlo-Cohen, National Institute of Allergy and Infectious Diseases (NIAID/NIH)

RNCP/Bundeswehr Institute of Radiobiology Exchange Workshop. From September 10-12, 2024, the NIAID RNCP and the Bundeswehr Institute of Radiobiology (BIR; Munich Germany) held a virtual workshop designed to enhance collaborations between NIAID-funded programs and researchers at the BIR. Presentations included basic information about the two programs and overviews of the capabilities and accomplishments of the laboratories in the funded portfolios, particularly in biodosimetry. As a result of the workshop, several partnerships between U.S. and German investigators are being planned to allow NIAID to continue to strengthen ties with international partners.



News from the Network Members

◆ Radiation Protection Training at the Institute of Radiation Emergency Medicine at Hirosaki University, Hirosaki, Aomori, Japan

By Prof. Shinji Tokonami, Prof. Tomisato Miura, and Dr. Donovan Anderson, Institute of Radiation Emergency Medicine, Hirosaki, Japan

The Institute of Radiation Emergency Medicine (IREM) at Hirosaki University, located in Hirosaki, Japan, held a radiation protection training program for Japan's Ground Self-Defense Force. Aomori Prefecture has several nuclear-related facilities such as nuclear power plants and a spent fuel reprocessing facility. In the event



of an accident, many professions and personnel will play a critical role in radiation measurement, evacuation guidance, contamination testing, and radiation emergency medicine. To address this, IREM has initiated a collaboration with the Japan Ground Self-Defense Force, conducting its first radiation protection training specifically for Self-Defense Forces personnel. The training included 30 members of the Japan

Ground Self-Defense Force. For some individuals, this was their first exposure to the concept of ionizing radiation or even the first time they had considered it.

The training began with lectures by Professor Shinji Tokonami, Director of IREM, Professor Tomisato Miura, Vice Director of IREM, Assistant Professor Kazutaka Kikuchi; and Assistant Professor Takakiyo Tsujiguchi from the Radiation Emergency Medicine Collaborative Promotion Organization. The second part involved practical exercises on radiation measurement devices, contamination surveys, and the proper donning and doffing of personal protective equipment. As natural disasters have become more frequent, this training was an important step in enhancing regional disaster preparedness. It provided Self-Defense Forces personnel, who may be deployed during complex disasters, with a deeper understanding of radiation protection. IREM will continue to strengthen its collaboration on regional disaster preparedness moving forward. ◆



◆ NIAID-Sponsored Early Bird Symposium at the Annual Radiation Research Society Meeting

By Andrea DiCarlo-Cohen, PhD, National Institute of Allergy and Infectious Diseases (NIAID) National Institutes of Health (NIH)

On September 16, 2024, during the 69th Annual Radiation Research Society Meeting in Tucson, Arizona, NIAID convened a *Sunrise Session* on “FDA Animal Rule and Beyond: Tips from Survivors.” This session was envisioned to provide lessons learned by currently-funded product developers. The workshop included a large portion of the radiobiology community, bringing together scientific stakeholders needed to respond to the needs of U.S. and international emergency preparedness for radiological or nuclear threats. It was very well-attended (>75 participants), given its 6:30 am start time, and there was considerable positive feedback from the attendees.



News from the Network Members

◆ 11th National Training Course on Nuclear and Radiological Emergency Preparedness (NTC NREP) 2024, Malaysia - *By Dr. Khairul Anuar Bin Abdullah, Public Health Medicine Specialist, Ministry of Health, Malaysia*



The 11th National Training Course on Nuclear and Radiological Emergency Preparedness (NTC NREP) was held from 19 February to 1 March 2024, in Malaysia. This intensive program, supported by the Japan Atomic Energy Agency (JAEA) and the Malaysia Nuclear Agency, aimed to enhance technical competencies, inter-agency collaboration, and operational readiness for managing nuclear and radiological emergencies. Trainers from both agencies delivered expert lectures and practical sessions, ensuring participants were well-prepared for real-world scenarios.

The 11th NTC NREP 2024 highlighted Malaysia's dedication to nuclear and radiological safety. Contributions from JAEA and Malaysia Nuclear Agency ensured a robust training framework, equipping participants with both theoretical knowledge and practical expertise. This collaborative effort significantly advanced national and regional preparedness for nuclear emergencies. ◆

◆ Joint External Evaluation (JEE) Mission to Philippines – Nov 2024.

Driven by the goal to further develop and generate systems in advancing strong and resilient health security, the Philippines, through the Department of Health, in collaboration with WHO, remarkably [completed the second Joint External Evaluation](#) (JEE) on the 29th of November 2024 and received a strong endorsements to continue advancing national health security. The Philippines' second JEE was led by health security experts Dr. Gina Samaan, WHO Regional Emergency Director for the Western Pacific, and Dr. Jeffery Cutter, an independent expert from Singapore. The evaluation was enriched by contributions from experts representing diverse countries and institutions, including Singapore, Jamaica, New Zealand, Tonga, China, and Japan, working alongside Philippine national experts. This collaborative approach brought varied perspectives and technical expertise to the process. ◆

◆ 9th Biennial Workshop by RITN -

By Jen Aldrich, MA, Radiation Injury Treatment Network (RITN) Program Manager, Minneapolis

The Radiation Injury Treatment NetworkSM (RITN) is a national network of medical centers with expertise in the management of bone marrow failure working to assist with managing acute radiation syndrome and its health-related consequences.

This year RITN hosted its 9th Biennial Workshop with 167 in-person and virtual attendees and coordinated in-person training courses with instruction provided by Advanced HAZMAT Life Support (AHLs), the Radiation Emergency Assistance Center/Training Site (REAC/TS), and Summit Education and Training. RITN released Dept. of Defense Acute Radiation Syndrome (ARS) Clinical Practice Guidelines, conducted virtual ARS Grand Rounds; worked with Department of Defense and Department of Energy and the American Burn Association on ARS medical kits in support of Ukraine; and coordinated a comprehensive training program for both Guam Naval Hospital and Guam Memorial Hospital staff.

In 2025, RITN will continue preparedness training by again hosting courses at RITN-member hospitals with the assistance of our partners. Courses include AHLs's Radiological Incidents and Terrorism course, REAC/TS's Radiation Illnesses and Injuries course, and a public information officer through our newer partnership with Summit Exercises and Training. New efforts include supporting U.S. Affiliated Pacific Islands jurisdictions by facilitating a tabletop exercise (TTX) at the 2025 Pacific Islands Preparedness and Emergency Response Summit in Saipan along with conducting a TTX and training for the Republic of Palau to enhance their preparedness as they prepare to host the 2025 Mini Pacific Games. ◆

Self-Learning Resources

◆ OpenWHO learning platform became a repository of learning materials in 2025.



Analyses of OpenWHO learner behaviour have found that registration can act as a barrier to accessing materials, including in many communities where knowledge is most needed. Videos, slides and downloadable documents are the most preferred learning formats, and a majority of learners are accessing these on their smartphones during health emergencies.

OpenWHO is evolving into a knowledge-sharing and dissemination site to empower even more people with these critical learning materials from WHO experts, with as few barriers to access as possible.

As of 2025, the site will become a learning resource hub with a library of videos, slides, handouts and other capacity-building

materials for health emergencies. It will be completely open without registration and will not provide certificates.

New trainings in OpenWHO:

Advancing national civil-military collaboration to strengthen health emergency preparedness:

The aim of this course is to provide the public health sector and military actors and services at the national level with guidance for establishing, advancing and maintaining collaboration and coordination, with the focus on country core capacities required to effectively prevent, detect, respond to, recover from and build back better after health emergencies.

OpenWHO now has a total of 317 courses, with learning resources spread across 75 languages. **All courses can be accessed [here](#).** You can use the toolbar to filter courses by language and topic. ◆



◆ “Regional Training Course on Radiation Protection and Safety and Accident Prevention in Radiotherapy” - By Dr. Andrey Bushmanov – First Deputy Director of SRC-FMBC, Director of SRC – FMBC WHO CC.

Virtual Event “Regional Training Course on Radiation Protection and Safety and Accident Prevention in Radiotherapy” was held on the basis of the State Research Center - Burnasyan Federal Medical Biophysical Center of Federal Medical Biological Agency in the framework of the IAEA Technical Cooperation Program for Cancer Treatment “Rays of Hope”, on 28 Nov to 01 Dec, 2024. While speaking at the opening ceremony of the course, the First Deputy Director of SRC-FMBC, Director of WHO REMPAN Collaborating Center of the SRC – FMBC Professor Andrey Bushmanov drew the audience's attention to the advantages of this course providing technical assistance in improving the skills of young specialists from different countries in the field of radiation protection and occupational safety in radiation therapy. In collaboration with the IAEA and WHO, SRC-FMBC has been conducting these courses since 2017. SRC-FMBC WHO Collaborating Center experts in the field of acute radiation injuries delivered topical lectures according to the course program. Upon completion of the training, all participants receive certificates and course materials for further use in their work in their institutions. This year about 30 experts from Russia, Armenia, Belarus, Cyprus and Uzbekistan took part in the educational course. Medical physicists, radiation safety engineers and radiation hygienists took part in the training. ◆

News from the Network Members

◆ Conference about medical emergencies in Madrid, Spain, September 2024

- By Mercedes Moreno Domene, Hospital General Universitario Gregorio Marañón, Madrid, Spain

The Gregorio Marañón General University Hospital in Madrid (Spain) organized a Conference about medical emergencies on September 27, 2024 as a national open and free event. The first session was about the medical guidelines for radiological emergencies (EPR-IAEA), given by Ramón de la Vega, an expert who was previously Deputy Director of Emergencies at the Nuclear Safety Council and emergency coordinator at the IAEA.

The rest of the day dealt with updating personal decontamination protocols and the speakers were experts in medical emergencies from the Autonomous Community of Madrid (SAMUR) and Civil Protection (SUMMA 112).



These kind of Conferences held annually, are the result of an alliance agreement between the Foundation for Biomedical Research of the HGUGM (Biological Dosimetry Laboratory) and the Spanish Nuclear Industry Forum.

The meeting goal is to promote the updating of professionals in emergencies and radiological protection, as well as the dissemination of knowledge in these areas.

The organization of the Conference was possible thanks to the participation of the several hospital services and departments: Radiotherapy Oncology, Dosimetry and Radioprotection, Medical Imaging and the Biological Dosimetry Laboratory. ◆

◆ REAC/TS Extends Continuing Medical Education Accreditation through 2028

By Carol Iddins, Director of the Radiation Emergency Assistance Center/Training Site (REAC/TS) and Becky Aloisi, REAC/TS, USA



After a yearlong process, ORISE's [Radiation Emergency Assistance Center/Training Site \(REAC/TS\)](#) was granted continued accreditation through the [American Medical Association/Accreditation Council for Continuing Medical Education \(ACCME\)](#) Physician's Recognition Award Category 1 Credit™ to provide continuing medical education to physicians through July 31, 2028. This accreditation applies to both the REAC/TS courses taught at the Oak Ridge facility and via the program's international outreach efforts. "This external validation of REAC/TS' educational program is a testimony to the high quality and innovative spirit of the entire REAC/TS team," said REAC/TS Associate Director Dr. Mark Ervin. "The only way to achieve this level of compliance with ACCME standards is for the whole team, day in and day out, to strive for the highest quality products for our learners!"

News from the Network Members

◆ Biodosimetry is used in assessing the safety of radionuclide therapy

By Dr I.K. Khvostunov, Medical Radiological Research Center (MRRC), Obninsk, Russia

On 11 Dec 2024, the new Institute of Nuclear Medicine (INM) was established within the structure of MRRC. The INM consists of a nuclear pharmacy, department of radionuclide diagnostics, department of radionuclide therapy, and the experimental nuclear medicine lab. Prof. V. Krylov has been appointed Director of the INM (see the photo below, in the middle).



The INM produces a line of radiopharmaceuticals based on lutetium-177, rhenium-188 and actinium-225 for the radionuclide therapy of cancer and non-cancer patients. These radiopharmaceuticals passed all necessary R&D stages from development and synthesis followed by preclinical studies and clinical trials; and used in routine clinical practice today. Prior to the creation of INM, the IAEA mission to MRRC highly appreciated the technological level of the ongoing development and the perspective for creating a training center for the development, synthesis and applying various types of radiopharmaceuticals in the framework of INM.

Although, radionuclide therapy appears to be reasonably safe, the dose to patients' healthy organs should be taken into account. Extensive experience of MRRC's cytogenetic laboratory accumulated during the decades of work under WHO REMPAN is effectively used to ensure accuracy of delivered radiation doses. Thus, during the second half of 2024, biological dosimetry was carried out based on chromosomal aberrations in lymphocytes of cancer and non-oncological patients in the course of clinical trials of radiopharmaceuticals synthesized using lutetium-177 and rhenium-188. By assessing the personal side dose estimation from aberrations scoring the radiation safety of this type of radionuclide therapy was established and substantiated. ◆

◆ Empowering Preparedness: A Participant's Journey in the 2024 INSTA Executive Programme

By Dr. Khairul Anuar Bin Abdullah, Public Health Medicine Specialist, Ministry of Health, Malaysia

The International Nuclear Science and Technology Academy (INSTA) Executive Programme for Educators (EPE) was held from April 8 to November 30, 2024, as a collaborative initiative by the IAEA, Open University Malaysia, and other global partners. It provided a learning platform to enhance radiation emergency medical response capabilities. The program addressed key areas crucial to radiological emergency management, including:

- Radiation Protection
- Nuclear Safety and Risk Management
- Crisis Communication
- Medical Preparedness
- International Collaboration and Frameworks

Delivered through scenario-based learning, virtual simulations, quizzes, and group discussions, the program provided participants with both theoretical expertise and practical problem-solving skills. Assignments and peer networking enriched the learning experience, fostering the exchange of ideas and best practices in radiological emergency management. ◆

News from the Network Members

◆ REAC/TS Conducted two International Medical Management of Radiation Injuries (I-MED) Courses - *By Dr C. Iddins, Director of the Radiation Emergency Assistance Center/Training Site (REAC/TS) and Becky Aloisi, REAC/TS, USA*

Two International Medical Management of Radiation Injuries (I-MED) courses were conducted at the CBRN-Defense Center of the Austrian Armed Forces in Korneuburg in October 2024 and in Amman, Jordan in November 2024 at the Prince Rashid Ben Al-Hasan Military Hospital and King Hussein Medical Center. The Austrian course was supported by the U.S. Department of Energy (DOE) / National Nuclear Security Administration's (NNSA) Office of National Incident and Policy Cooperation (NIPC), focusing on the treatment of patients with radiation injuries / illnesses. Topics covered handling of contaminated patients, personal protection equipment, triage and diagnosis of radiation injuries, decontamination techniques and medical management. The courses consist of didactics and interactive activities.

Under REMPAN cooperation umbrella, WHO nominated two Ukrainian physicians who traveled to REAC/TS for the November 2024 Radiation Emergency Medicine Course (REM). The participation of these physicians was sponsored by the DOE/NNSA-NIPC and hosted by REAC/TS. The two young medical doctors were from the key agencies actively working in Ukraine for strengthening national medical preparedness to nuclear emergencies, including WHO Country Office in Ukraine and WHO Collaborating Center – National Research Center for Radiation Medicine (National Academy of Medical Sciences). The US DOE / NNSA has been very supportive of Ukraine and has assisted REAC/TS in translating many specially developed course activities, online products, and other resources for educating the medical and response community. Additionally, REAC/TS initiated an effort by multiple agencies to develop avenues for humanitarian aid to the region. ◆



REAC/TS Radiation Emergency Medicine Course

November 5-7, 2024

◆ KIRAMS Hosts International Seminar on Radiation Emergency Response -

By Haewon Kong, KIRAMS, Seoul, Republic of Korea

The Korea Institute of Radiological and Medical Sciences (KIRAMS) successfully hosted an international seminar on November 27, 2024, aimed at facilitating knowledge exchange on Japan's radiation emergency medical system and understanding the biological health effects of radiation exposure. The seminar featured two distinguished guest speakers.



Dr. Hideo Tatsuzaki, a retired researcher from Japan's National Institutes for Quantum Science and Technology (QST), delivered a lecture titled "Lessons Learned from the Medical Response to the Fukushima Accident." Dr. Kenji Kamiya, Chair of Japan's Radiation Effects Research Foundation (RERF), presented "Overview of Stochastic Effects of Radiation Exposure from Studies of Atomic Bomb Survivors."

The seminar provided a meaningful platform for international knowledge exchange in radiation medical response and highlighted the importance of global cooperation in addressing radiation emergencies. KIRAMS reaffirmed its commitment to fostering international academic collaboration and advancing radiation emergency response systems to contribute to public safety and health.



News from the Network Members

◆ The IABERD EPRBioDose2024 conference held at Hirosaki, Japan

- By Prof. Tomisato Miura, Dr. Donovan Anderson, Dr. Yohei Fujishima, and IABERD Executive Committee



The EPR-BioDose conference, organized by IABERD was hosted by the Institute of Radiation Emergency Medicine (IREM) at Hirosaki University, Hirosaki, Aomori, Japan on 25-28 Sept 2024. The event was opened by Hirosaki University President Dr. Shinsaku Fukuda and IREM Director Prof. Shinji Tokonami, with the Chairman Dr. Tomisato Miura closing the conference.

The conference attracted 91 participants from 20 countries, focusing on the theme "*Dosimetry Harmony: Orchestrating Unity in Techniques*," which covered topics such as biological dosimetry, EPR, and dating techniques. The program featured 2 invited lecturers, 3 keynote speakers, 28 oral and 54 poster presentations. The proceedings will be published in the *International Journal of Radiation Biology* in 2025. The next EPRBioDose meeting will take place in 2026 in Ottawa, Canada.

Following the conference, on September 29, 2024, 35 participants went on a two-day post-conference tour to Fukushima, Japan. The group visited the Great East Japan Earthquake and Nuclear Disaster Memorial Museum, where they learned about the devastating impact of the 2011 earthquake and the subsequent nuclear disaster. They also received a guided tour of the TEPCO Fukushima Dai-ichi Nuclear Power Plant (FDNPP). The tour provided participants with a deeper understanding of the disaster's long-term effects on the region and the progress made in rebuilding and ensuring future safety. Participants of the post-conference tour in Fukushima, Japan, gathered for a group photo in front of the Nuclear Disaster Memorial Museum, a newly established national museum dedicated to preserving the legacy of Japan's nuclear disaster. ◆

◆ IABERD's Cytogenetic and EPR Training - By Prof. Tomisato Miura, Dr. Donovan Anderson, Dr. Yohei Fujishima, and IABERD Executive Committee

Prior to EPRBioDose2024, a training program in cytogenetics and EPR was held on September 23rd by the Institute of Radiation Emergency Medicine (IREM) at Hirosaki University. The cytogenetics training was led by Prof. Mitsuaki Yoshida (Institute of Chromosome Life Science, Japan), Dr. Ruth Wilkins (Health Canada, Canada), and Dr. Donovan Anderson (IREM, Japan). The program covered advanced biodosimetry techniques, including the FISH-translocation assay, chemical-induced PCC, and improved C-banding methods.

The EPR training school was conducted by Dr. Francois Trompier (IRSN, France), Dr. Mattias Port (Bundeswehr Institute of Radiobiology, Germany), Dr. Harold Swartz (Dartmouth, USA), Dr. Jason Sidabras (Medical College of Wisconsin, USA) and Dr. Maurizio Marrale (University of Palermo, Italy). Participants had the opportunity to interact with an ESR instrument in person and gain hands-on experience with EPR software, enhancing their practical skills and understanding of EPR techniques. ◆

News from the Network Members

◆ Response Exercise at the Alfred Hospital, Melbourne, Australia

By Dr Marcus Grzechnik, Senior Director Environmental & Health Services

Australian Radiation Protection and Nuclear Safety Agency and Chenell Allan, Assistant Director Emergency Response at Australian Radiation Protection And Nuclear Safety Agency

Australian Radiation Protection and Nuclear Safety Agency ([ARPANSA](#)) is charged with promoting national policies for emergency response and conducting national exercises. It also supports the 6 states and 2 territories during the local exercises. Such an exercise in the state of Victoria was held at the Alfred Hospital in Nov 2024 and observed by ARPANSA. The purpose of the exercise was to simulate the initial phase of the Alfred's emergency department's response to an external incident prior to the intervention from ARPANSA. The focus areas included:

- Initial response to a major incident,
- Establishing command roles,
- Surge capacity within the department,
- Patient disposition/flow through the department,
- Communication and leadership skills.

This exercise aimed to execute a real-life scenario to guide and prepare interdisciplinary emergency department staff on receiving multiple casualties. There was also a Chemical, Biological, Radiological (CBR) overlay to the exercise, however participants didn't have this knowledge until the exercise began.

It was observed that the Emergency Department (ED) at Alfred Hospital demonstrated commendable clinical proficiency and operational effectiveness during the exercise. The scenario incorporated both chemical and radiological components, which offered a comprehensive range of patient treatments. It was noted that a radiological-only exercise might enhance understanding and depth for the team, from a radiological response perspective, and that this group would greatly benefit from receiving [REAC/TS](#) training adapted specifically for the Australian medical context, as was delivered in partnership with ARPANSA in 2023.



Facilitators and observers for the Alfred Hospital emergency exercise, Nov. 2024.

◆ The 15th APCDM Conference in Seoul - By Haewon Kong, KIRAMS, Seoul

The Korea Institute of Radiological and Medical Sciences (KIRAMS), the Korean Society of Emergency Medicine (KSEM), and the National Medical Center (NMC) jointly hosted the 15th Asia Pacific Conference on Disaster Medicine (APCDM 2024) in Seoul on November 25–26, 2024, under the theme "Collaboration, Cooperation, Coordination for Disaster Response." Some 700 participants from 14 countries and 40 exhibitors, addressed a diverse topics, such as the fundamentals of disaster medicine and training in disaster medical response.



Dr. Minsu Cho, Director General of the National Radiation Emergency Medical Center (NREMC), co-chaired the session "Preparedness and Response to Radiation Emergency," which provided insightful lectures on radiation disaster preparedness and received highly positive feedback from the audience. The event's highlight was the special demonstration of the Korea Mobile Field Hospital (KoMoFH) and hands-on training on the use of personal protective equipment and decontamination procedures for off-site radiation emergency medical clinics. APCDM-2024 served as a platform for fostering international collaboration and knowledge exchange in the field of disaster medicine. ◆

News from the Network Members

◆ The 1st Hiroshima University Phoenix Program Summer School August and September 2024 - By Nobuyuki Hirohashi M.D., Ph.D., Professor, Research Institute for Radiation Biology and Medicine, Hiroshima University

Hiroshima University held the First Summer School of the “Phoenix Leader Education Program for Renaissance from Radiation Disaster” (PLEP) in cooperation with IAEA on 26 Aug to 13 Sept, 2024 for 14 specialists from 14 countries.



The program included lectures, site visits, exercises, and practical training, providing participants with the essence of the necessary knowledge and skills offered in the three graduate courses of the Phoenix Program: Radiation Disaster Medicine, Radioactivity Environmental Protection, and Radioactivity Social Recovery. Fieldwork in Fukushima

Prefecture, an area affected by the 2011 Great East Japan Earthquake, included lectures by doctors and local university staff who had responded to the disaster, talks by disaster victims, and visits to the Fukushima Daiichi and Daini NPPs, where the nuclear accident occurred. Participants observed ongoing reconstruction efforts in Fukushima and gained a better understanding of the long-term effects of the tsunami and nuclear accident on the community and the health of the residents. The Hiroshima University PLEP will contribute to the improvement of nuclear safety management globally by regularly holding the Summer School in the future as a short-term intensive education to practitioners and other professionals.

◆ Visit of Shiro Suzuki (Mayor of the City of Nagasaki) to JMU Würzburg on July 21, 2024 - By Prof. Dr. Andreas Buck, University Clinic Würzburg, Germany

On July 21, 2024, the mayor of Nagasaki, Mr. Shiro Suzuki, met with the mayor of Würzburg at the Julius Maximilians University to talk about the City of Nagasaki mission to abolish nuclear weapons. Mr. Suzuki spoke of the devastating history of Nagasaki - atomic bombing on August 7, 1945 that took 60,000 lives. Mr. Suzuki informed suffering of A-bomb survivors, the ‘Hibakusa’.



The long-term collaboration with the Nagasaki University was discussed. In the 1990s, a student exchange program between Würzburg and Nagasaki students was set up and more than a 100 Japanese students have joined the University of Würzburg and vice versa. After his talk, Mr. Suzuki has met with alumni to discuss how both institutions could assist in the process of nuclear weapon abolishment and on preventing nuclear disasters. ◆

◆ EPR Training in India

By Dr Pramilla D. Sawant and Ramesh Kumar Bansraj Yadav, Bhabha Atomic Research Centre, India

The Radiation Emergency Response Director (RERD) of the Department of Atomic Energy (DAE) serves as the authority responsible for providing technical support in response to Nuclear and Radiological Emergencies (NRE). As part of its capacity-building efforts in preparedness and response to NRE, the RERD is tasked with training emergency response organizations on radiation safety and preparedness measures.

To enhance readiness for effective responses to NRE, various training programs are conducted for first responders, emergency services, and designated response teams.

From July 2024 to November 2024, several training programs, tabletop exercises, and field exercises were carried out by the DAE Radiation Emergency Response Centres (DAE-RERCs) under the direction of the RERD. These initiatives were designed to strengthen preparedness among national, state, and regional response forces designated to handle any disaster or emergency.



News from the Network Members

◆ KIRAMS and SEOULTECH Collaborate to Foster Talent in Radiological Biomedical Science

– By Haewon Kong, KIRAMS, Seoul, Republic of Korea

The Korea Institute of Radiological and Medical Sciences (KIRAMS) and Seoul National University of Science and Technology (SEOULTECH) have launched a collaboration to nurture future leaders in radiological biomedical science. On December 12, 2024, the two institutions celebrated the opening ceremony of the SeoulTech-KIRAMS Graduate School of Biomedical Science, marking the start of this partnership.

This graduate school is designed to focus on education and research in advanced radiological biomedical science, utilizing KIRAMS' expertise in radiological medicine and SEOULTECH's strengths in engineering education. The program aims to develop next-generation specialists in the field, and the admission process for its first 2025 cohort is currently underway. Dr. Jin Kyung Lee, President of KIRAMS, stated, "Radiation bio-researchers will join the faculty, and we will provide distinctive education based on KIRAMS' extensive clinical experience and cutting-edge research infrastructure."

Through this collaboration, KIRAMS and SEOULTECH aim to establish a world-class education and research hub for radiological biomedical science, fostering sustainable development in this field. ◆



Homepage: <https://medsci.seoultech.ac.kr/>



New Publications

◆ "Development of a method to use standard hospital gamma cameras as triage whole body monitors in UK emergencies" - by M. Simpson, J. Scott et al. (UKHSA)

This paper outlines the process to develop a protocol, written by the UK National Health Service, on how to use a gamma camera to triage for internal radioactive contamination. The aim of the paper is to ensure that the underlying reasoning and calculations are valid. While hospital based gamma cameras are able to detect photopeaks, they are often limited to an energy range of 40–540 keV. However, radionuclides with photopeak energies above 540 keV can still be detected as the partial collection of photon energy increases the count rate at lower energies. By combining extensive mathematical modelling with empirical calibration of multiple gamma cameras it is possible to develop a linear correlation between the efficiency of counting point sources and the overall counting efficiency for the camera. Once established, a simple protocol can be used to characterise any gamma camera, using optimal system settings, and hence generate a system efficiency with sufficient accuracy to allow the camera to be used in a triage process to committed effective doses of 2 mSv.

Source: Matthew Simpson et al 2024 J. Radiol. Prot. 44 041505
DOI [10.1088/1361-6498/ad82f5](https://doi.org/10.1088/1361-6498/ad82f5)



News from the Network Members

◆ EBMT Nuclear Accident Committee Report to REMPAN on Second Half of 2024 Activity - By Prof Ray Powles (Head Cancer Centre London, UK), Prof Leif Stenke (Department of Medicine, Karolinska Institutet, Sweden), Prof Sergiy Klymenko (Feofaniya Clinical Hospital in Kyiv), Co-Chairs EBMT NAC

On 12-13 Dec 2024, The European Blood and Marrow Transplant Nuclear Accident Committee (EBMT NAC) supported the Society of Hematologists of Ukraine in performing an online exercise to improve their preparedness for radiation disasters. The exercise consisted of two parts: (1) on 12 Dec, an email was sent to the heads/representatives of 31 hematological departments in Ukraine hospitals with a fictional scenario of a radiation disaster and a request to confirm by e-mail that *"the institution would be ready to provide medical assistance or consult other clinics"*. The aim of the exercise was to establish communication between institutions in case of a radiation accident and to assess how quick the participating institutions respond. 17 out of 31 institutions (55%) confirmed their readiness. (2) two single multiple-choice questions on triage of different radiation-injury cases were sent to 31 hematological institutions by email asking to assess the radiation doses based on the clinical symptoms and blood tests, using the EBMT Pocket Guide (2017). Hematologists of Ukraine demonstrated a high level of motivation and qualification of the respondents. The exercise lessons were presented at a seminar on "Management of patients exposed to radiation as a result of military action" held at the annual conference of the Society of Hematologists of Ukraine held in Kyiv on 20 Dec. It included a discussion of online exercise results and talks "Radiation Disaster: A Hematologist's First 48 Hours" by Prof. Leif Stenke and "Medical Triage of Victims of a Large-Scale Radiation Disaster" by Prof. Ray Powles. The online exercise and the seminar improved the understanding of triage for overexposed patients and the ability of Ukrainian hematologists to manage ARS cases. In future, the EBMT NAC considers offering trainings on BMT.



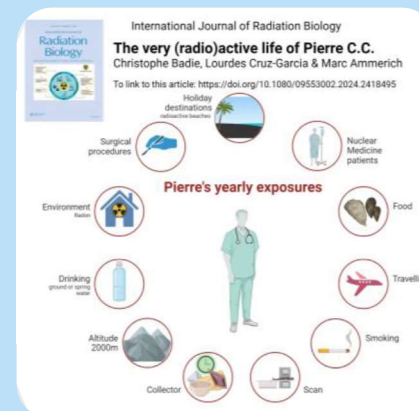
◆ REAC/TS Conducted two International Medical Management of Radiation Injuries (I-MED) Courses - By Carol Iddins, Director of the Radiation Emergency Assistance Center/Training Site (REAC/TS) and Becky Aloisi, REAC/TS, USA

Two International Medical Management of Radiation Injuries (I-MED) courses were conducted at the CBRN-Defense Center of the Austrian Armed Forces in Korneuburg in October 2024 and in Amman, Jordan in November 2024 at the Prince Rashid Ben Al-Hasan Military Hospital and King Hussein Medical Center. The Austrian course was supported by the U.S. Department of Energy (DOE) / National Nuclear Security Administration's (NNSA) Office of National Incident and Policy Cooperation (NIPC), focusing on the treatment of patients with radiation injuries / illnesses. Topics covered handling of contaminated patients, personal protection equipment, triage and diagnosis of radiation injuries, decontamination techniques and medical management. The courses consist of didactics and interactive activities. ◆

New Publications

◆ "The very (radio)active life of Pierre C.C." by Badie C., Cruz-Garcia L. and Ammerich M. - By Lourdes Cruz Garcia, PhD, UK Health Security Agency

This paper from the Cancer Mechanisms and Biomarkers group of the Radiation Effects department, UKHSA, published in the International Journal of Radiation Biology entitled: The very (radio)active life of Pierre C.C. This publication presents a fictional character going through different real-life scenarios and life choices and how these situations affect his yearly cumulative dose of ionizing radiation by evaluating his exposure to natural, medical, and occupational radiation sources. The aim was to be informative and educational for a broad audience.

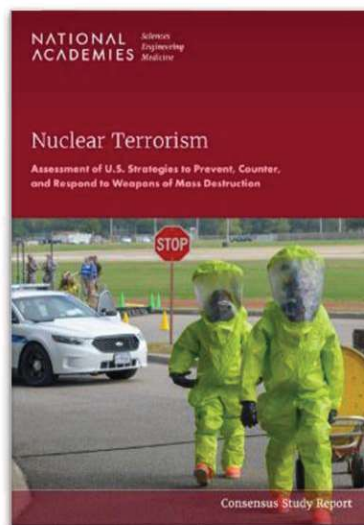


Badie, C., Cruz-Garcia, L., & Ammerich, M. (2024). The very (radio)active life of Pierre C.C. *International Journal of Radiation Biology*, 100(12), 1605–1610. <https://doi.org/10.1080/09553002.2024.2418495>

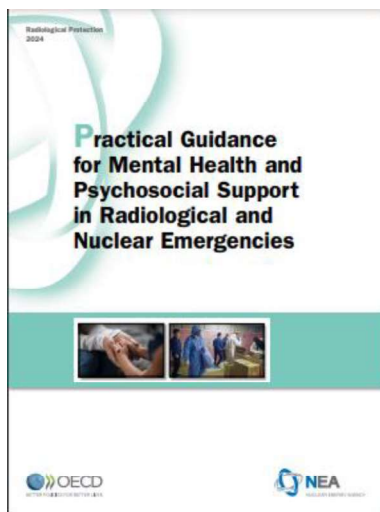
New Publications

◆ New Report on “Nuclear Terrorism: Assessment of U.S. Strategies to Prevent, Counter, and Respond to Weapons of Mass Destruction” by the US National Academies of Sciences, Engineering and Medicine

The efforts to counter nuclear or radiological terrorism are not keeping pace with the evolving threat landscape. The report underlines the need to maintain a strategic focus on combatting terrorism across the national security community in coordination with international partners, State, Local, Tribal and Territorial authorities, the National Laboratories, universities and colleges, and civil society. Developing and sustaining adequate nuclear incident response and recovery capabilities at the local and state levels will likely require significant new investments in resources and empowerment of local response from Federal Emergency Management Agency (FEMA), working with the Centers for Disease Control and Prevention, Environmental Protection Agency, Department of Energy, and National Institutes of Health. ◆



◆ Practical Guidance for Mental Health and Psychosocial Support in Radiological and Nuclear Emergencies by Nuclear Energy Agency (NEA/OECD)



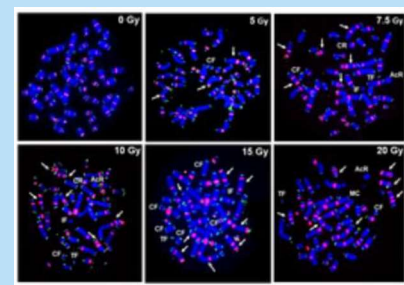
This publication provides a comprehensive guide to integrating MHPSS in radiological protection strategies during a nuclear or radiological (N/R) emergency. **It operationalises the World Health Organization’s 2020 framework for MHPSS in such emergencies**, covering all phases: preparedness, response, and recovery. The guide emphasises the importance of understanding the basics of radiation exposure, emergency management, and public health concepts. The guide supports an all-hazards approach and also addresses unique risk factors of N/R emergencies, such as the perception of risks associated with radiation exposures. It includes a summary table of actions and detailed action sheets for various themes, e.g. integrating MHPSS into needs assessments, public communication strategies, services for host communities, clinical referrals, and mental health monitoring. The guide also highlighted that, although lessons have been learnt from past N/R emergencies, there is a need for further research on effectively integrating MHPSS into radiological protection decisions. ◆

◆ “Application of FISH based G2-PCC assay for the cytogenetic assessment of high radiation dose exposures: Potential implications for rapid triage Biodosimetry” by Smith T. L., Ryan T. L. et al.

By Carol Iddins, Director of the Radiation Emergency Assistance Center/Training Site (REAC/TS) and Becky Aloisi, REAC/TS, USA



ORISE Cytogenetic Biodosimetry Laboratory Director Dr. Adayabalam Balajee co-authored a publication in PLOS One “[Application of FISH based G2-PCC assay for the cytogenetic assessment of high radiation dose exposures: Potential implications for rapid triage Biodosimetry.](#)” The research work was performed together with Igor Shuryak MD., Ph.D. of Columbia University Irving Medical Center, NY. The main goal of the study was to test the utility of calyculin A induced G2-PCC assay as a biodosimetry triage tool for assessing a wide range of low and acute high radiation dose exposures of photons.



Training courses

◆ REAC/TS Training courses

Radiation Emergency Medicine

This three-day course is intended for physicians, physician assistants, nurse practitioners, nurses, and other healthcare providers. First responders, emergency management and public health professionals may also find the course beneficial. The course emphasizes the practical aspects of initial hospital management of irradiated and/or contaminated patients through didactics and hands-on practical exercises. Course Dates:

- April 8-10, 2025 \$400
- May 13-15, 2025 \$400
- June 3-5, 2025 \$400
- August 5-7, 2025 \$400
- September 9-11, 2025 \$400

Advanced Radiation Medicine

This three-day course includes more advanced information for medical practitioners. This program is academically more rigorous than the Radiation Emergency Medicine (REM) course and is primarily for physicians, physician assistants, nurse practitioners, and nurses desiring an advanced level of information on the diagnosis and management of ionizing radiation injuries and illnesses. It is a heavily-weight didactic course. Group problem-solving is used to emphasize the management of complex cases. Recent completion of the Radiation Emergency Medicine (REM) course is strongly recommended. Course Dates:

- April 22-24, 2025 \$475
- August 12-14, 2025 \$475

Health Physics in Radiation Emergencies

This three-day course is designed primarily for health physicists, medical physicists, radiation safety officers and others who have radiation dose assessment and/or radiological control responsibilities. The course presents an advanced level of information on radiological/nuclear event reconstruction, dose assessments/estimations, and integration of the physics discipline with medicine. Demonstrations, exercises, and problem-solving sessions complement classroom lectures. It is highly recommended that participants have an understanding of radiation science before attending this course.

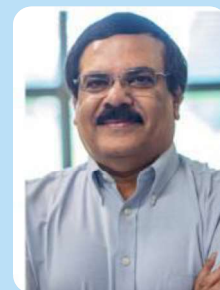
Unless otherwise noted, Health Physics in Radiation Emergencies courses are conducted at REAC/TS in Oak Ridge, Tennessee. Course Dates:

- February 25-27, 2025 \$475
- June 17-19, 2025 \$475 ◆

New Publications

◆ Using Artificial Intelligence to Improve Radiation Dose Prediction Accuracy - *By Carol Iddins, Director of the Radiation Emergency Assistance Center/Training Site (REAC/TS) and Becky Aloisi, REAC/TS, USA*

The November 2024 special issue of *Applied Sciences* recently published an artificial intelligence (AI) study co-authored by ORISE Cytogenetic Biodosimetry Laboratory Director Dr. Adayabalam Balajee.



The article titled “[Neural Network Ensemble to Detect Dicentric Chromosomes in Metaphase Images](#)” examines how AI-based tools can greatly advance the field of radiation biodosimetry by improving the accuracy of absorbed dose estimation and by facilitating the development of predictive modeling for radiation induced short- and long-term health effects in humans. Balajee collaborated with researchers from the Universidad de Málaga and the Hospital Universitario y Politécnico La Fe in Valencia, Spain to use the AI-based Convolutional Neural Networks to improve the precision of automated detection of radiation induced dicentric chromosomes in human lymphocytes. The AI-based dicentric chromosome detection methodology will support a rapid triage by improving the dose prediction accuracy. ◆

Upcoming events

◆ 26th Nuclear Medical Defence Conference on Radiation Topics (ConRad) May 5th – 8th 2025 in Munich, Germany

By Colonel Prof. Dr. M. Port and Dr. Mark Hotz, Bundeswehr Institute of Radiobiology affiliated to the University of Ulm, Germany



The next 26th Nuclear Medical Defence Conference, **ConRad 2025**, will be held in Munich from **May 5th to 8th, 2025**. As a continuation of the successful row of biennial conferences, this conference on radiation topics will provide a scientific forum for international and multidisciplinary exchange of civilian and military experts in the field of radiation science with a particular focus on radiation emergency medical preparedness. ConRad 2025 will place special emphasis on two topics highlighted in separate key sessions. The first key session, **“Biomarkers for biodosimetry and ARS severity prediction - current and future developments,”** will discuss the newest research on various biomarkers and their abilities to detect Acute Radiation Syndrom suitably. The session will refer to the benefit of molecular biologic tools and how the detection of ARS can be dealt with in the future. In the second key session, **“Decorporation of Radionuclides - Status Quo and Trends,”** the conference chair, Colonel Prof. Dr. Matthias Port, would like to provide a platform for mutual exchange on strategies of decorporation in real-life experiences, discuss the decisive lessons learned and reevaluate acquired knowledge based on new approaches and recent scientific findings. Please share this conference announcement with your colleagues and the entire community.

[Registration](#) and [abstract submission](#) are open. More details can be found at: www.radiation-medicine.de



◆ EPRBioDose Conference, August 30-Sept 3, 2026, Ottawa, Canada

Save the date - the next EPRBioDose Conference is in planning, further details will follow.

◆ Gilbert W. Beebe Symposium on AI and ML Applications in Radiation Therapy, Medical Diagnostics, and Radiation Occupational Health and Safety – March 13th-14th 2025

[Registration](#) is open for this hybrid workshop on artificial intelligence (AI) and machine learning (ML) in the field of radiation health science taking place in the National Academy of Sciences I Washington D.C., USA. There will be amongst other topics discussions about possible future developments and also ethical questions.

Additional details can be found on the [webpage](#).

In case of questions email at NRSB@nas.edu.

Upcoming events

◆ 8th International Symposium on the System of Radiological Protection October 7th -9th 2025 in Abu Dhabi, UAE



Every two years the [8th International Symposium on the System of Radiological Protection](#) takes place in another country, this time in the United Arab Emirates in Abu Dhabi October 7th – 9th 2025. Some topics that will be addressed are **modern dosimetry, radiation risks and protection** in various fields as well as new technological developments like the growing implementation of **artificial intelligence** also in radiological protection manners.

Registration and **abstract submission** open shortly. To stay informed about **updates** you can [sign up](#) with your mail address.

For those who want to be part of the exhibition or to support with sponsoring, please contact Kelsey Cloutier, Head of Stakeholder Engagement and Communications for ICRP (kelsey.cloutier@icrp.org).

◆ Call for papers for the 2025 IAEA International Conference on Nuclear and Radiological Emergencies – deadline 02.05.2025!

The conference will be held from 01 to 4 Dec 2025 in Riyadh, Saudi Arabia and is hosted by Saudi Arabia's Nuclear and Radiological Regulatory Commission (NRRC). IAEA accepting abstracts on topics ranging from the application of innovative technologies in emergency response, protection strategies for emerging reactor technologies, long-term response considerations and supporting first responders, to capacity building and effective public communication. ◆



Disclosure

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