REMPAN eNEWSLETTER

ISSUE N 28 FEBRUARY 2024

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COMING, GOING…

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From the desk of REMPAN Coordinator:

Dr Zhanat KENBAYEVA

(formerly CARR)

Dear Reader,

This issue summarizes the events and activities of the Network which took place since September 2023 through January 2024. As we plunged into new year, the agenda got immediately full for the first six-month period with several projects and activities having lined up and deadlines putting additional pressure and demanding efforts. This is why this issue is slightly delayed, but we hope to catch up with the schedule next time.

Thanks to all the contributors to this newsletter for your continuing support and cooperation.

Thank you for being REMPAN!

Featured story

◆ 17th WHO-REMPAN Coordination Meeting in Seoul, Korea, 13th - 15th September 2023 – by *Z. Kenbayeva (WHO) and Ms. H. Kong (KIRAMS)*

The 17th WHO-REMPAN Coordination Meeting held on 13-15 September 2023 in Seoul was hosted by WHO Collaborating Center Korea Institute of Radiological and Medical Sciences (KIRAMS). It was organized in a hybrid format, which allowed for participation on site as well as on-line for about 200 participants from 30 countries. The meeting was a great success on providing the opportunity to share insights and experiences related to the capabilities of each country regarding radiation emergency preparedness and assistance. The agenda consisted of a total of ten sessions, and opened with welcome addresses from Dr. Lee Jinkyung, KIRAMS President and Dr. Akeem Ali, Head of the WHO WPRO's Center for Environmental Health.

More information about the meeting and the program is available here.

The meeting agenda was rich in subjects relevant to global, regional and national aspects of public health preparedness and response to radiological and nuclear emergencies. Notably, for the first time on REMPAN history, we teamed up with Women in Nuclear (WiN) and Women n Radiological Protection (WiR) associations for a REMPAN Recognition Award for the best female REMPAN expert. The winner – Dr. Jin Kyung Lee, President of KIRAMS – was democratically determined by online voting by the network members.

This meeting served as a significant opportunity to strengthen cooperation among WHO Collaborating Centers around the world and to share knowledge and experiences of WHO-REMPAN members and introduce radiation emergency medical systems from various countries. The proceedings of the meeting will be published this year in an Open Access peer-review journal.

Next meeting will take place in Paris, France in 2026 and will be hosted by IRSN – WHO Collaborating Center for Radiation Health. ◆

News from the WHO Secretariat

◆ European Radiation Protection Week (ERPW)-2023 - 09 to 13 October 2023, Dublin, Ireland.

European Radiation Protection Week (ERPW) is an annual, multidisciplinary event which brings together experts and addresses current and emerging topics related to radiation protection organized under the Consortium of European Radiation Research Platforms (MEENAS Group): MELODI (Multidisciplinary European Low Dose Initiative), EURADOS (European Radiation Dosimetry Group), EURAMED (European Alliance for Medical Radiation Protection Research), NERIS (European Platform on Preparedness for Nuclear and Radiological Emergency Response and Recovery), ALLIANCE (European Radioecology Alliance), and SHARE (Social Sciences and Humanities in Ionising Radiation Research); together with expertise from PIANOFORTE (European Partnership for Radiation Protection Research), the IAEA (International Atomic Energy Agency), the ICRP (International Commission on Radiological Protection), and the WHO (World Health Organization).

Photo: members of the Panel Discussion on radiation emergencies preparedness

WHO REMPAN was represented by a number of the network's members attending this annual conference (see the program available from the ERPW-2023 website). REMPAN Coordinator Dr Zhanat Carr presented WHO work related to the recent publication providing policy advice on development of national stockpiles for radiation emergencies; mental health and psychosocial support in nuclear emergencies; and the work of the ICRP's Task Group 120 on Radiological Protection for Radiation Emergencies and Malicious Events. The ERPW2024 will take place in Rome (Italy) on 11-15 November 2024 ◆

◆ Hanns Langendorff Medal Award – Sept 2023, Mondsee, Austria

The German radio biologist Hanns Langendorff (1901-1974) achieved international fame through his fundamental work on the biological effects of X-rays and is considered one of the most important scientists in the field of radiation biology and radiation therapy. In 1986, the Hanns Langendorff Foundation was created to promote scientific work and activities in the field of radiation protection in the spirit of Hanns Langendorff's work. Since 1992, outstanding scientists who have made significant contributions to the field of radiation biology and radiation protection have been awarded a gold Hanns Langendorff Medal by the foundation together with the Fachverband für Strahlschutz eV. The 2023 Medal was awarded to Dr Zhanat CARR. The list of scientist who received this honorable award is available here.

Photo: Dr Carr and Prof. C. Reiners

News from the WHO Secretariat

◆ ICRP 2023, the 7th International Symposium on the System of Radiological Protection – 6 to 9 Nov 2023 – Tokyo, Japan

The 7th ICRP Symposium was hosted by the National Institute for Quantum Science and Technology (QST) – a WHO Collaborating Center since 2013.
The overarching theme for ICRP 2023 is The Evolution of Radiological Protection: Science and Beyond. The presentations, posters, and exhibitions detailed various stories, events, projects, and findings from the radiation protection's past, present, and future. The exciting **program** was tailored to tend to the needs of all stakeholders who gathered in Tokyo from all corners of the world.
WHO actively participated in various Plenary and Topical sessions. The event provided an excellent opportunity for networking and for advocating for WHO's work in the area of radiation protection, including the work supported by REMPAN experts.
Several satellite meetings took places during the week of the Conference, including meetings of the ICRP's various Committees and Task Groups.
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ICRP-2023 meeting participants (Photo credit: ICRP)

Satellite meeting of the members of ICRP's Task Group 120 on Radiological Protection for Radiation Emergencies and Malicious Events was held in hybrid format in Tokyo on 09 Nov 2023.

◆ WHO – FMU bilateral meeting – 06 Nov 2023

Having the opportunity to visit Japan for ICRP-2023 Symposium, REMPAN Coordinator Dr Zhanat Carr visited Fukushima Medical University (FMU). The visit to FMU kindly hosted by Prof. S, Yamashita (Vice President of FMU) and gave the opportunity to discuss the ongoing work on the health risk management surveys and the ways of strengthening the FMU and WHO Collaboration.

Dr Carr visited the new Memorial Museum of the Great East Japan Earthquake and Nuclear Disaster (photo below) in Futaba, situated along the Pacific coast in an area of the Fukushima prefecture known as Hama-dōri, the area that suffered a triple disaster of earthquake, tsunami, and meltdown of the Fukushima Daiichi Nuclear Power Station in March 2011. The museum visit was kindly hosted by REMPAN's very own Prof. Noboru Takamura – who is appointed as a director of the museum.

The museum offers an exposition and interactive activities to educate the visitors about the history of the disaster, to tell a story of people's resilience and tremendous efforts of national and local authorities to overcome the consequences of Fukushima disaster.

News from the WHO Secretariat

◆ WHO-IRSN Bilateral Meeting – Dec 2023, Geneva, Switzerland

On 19 December 2023, the Radiation and Health Unit of the WHO hosted the visit of the delegation of the WHO Collaborating Center – l'Institute de Radioprotection et Sureté Nucléaire (IRSN, Paris, France) led by the IRSN DG Dr Jean Christophe Niel.

Such bilateral meetings which have become a good tradition, provide a great opportunity for learning about mutual work programmes and efforts and for exploring new areas of collaboration. WHO expressed its appreciation of IRSN's continuing technical support in the areas of radiation emergencies preparedness and response, safe use of radiation in medical applications, and in the areas of low-dose research, biodosimetry, radon, and other topics.

◆ The 2rd meeting of the WHO Guidelines Development Group (GDG) for iCAM project – 13-15 Dec Madrid, Spain

The 2nd meeting of the GDG members of the "internal Contamination Assessment and Management" (iCAM) guidelines development project was kindly hosted by CIEMAT in the wonderful city of Madrid. The project participants (on the photo below) reviewed the project progress, discussed the protocol of the systematic reviews and the views expressed by the actual end-users of the future guidelines' recommendations: practicing physicians and the affected patients.
The next meeting is planned to be held as a satellite meeting of the IRPA-16 Congress in Orlando, Fl, USA in July 2024.

◆ A visit of the French school students to WHO Headquarters – Jan 2024

On 30 January 2024, 20 students from the Lycée Notre-Dame de Boulogne in Paris, France visited the WHO Headquarters in Geneva, Switzerland. This visit was organized in connection to their trip to CERN and was hosted by the Radiation and Health Unit of the WHO.
Young visitors had the opportunity to learn about the Organization's mandate, history, structure, and governance and of course in more detail about the work of the Radiation and Health Unit (RAD) in the areas of ionizing and non-ionizing radiation. The staff of RAD answered the questions of students and offered them a quick tour of the WHO's Emergency Operations Center (EOC). ◆

News from the Network Members

◆ NEA/OECD – DSA (Norway) Joint Workshop on Radiological Protection During Armed Conflict – Oslo, 22-24 Nov 2023

The war in Ukraine has raised new and urgent questions about radiological protection and how to improve operational and regulatory resilience in times of armed conflict. The NEA Committee on Radiological Protection and Public Health (CRPPH) reviewed these complex issues since the start of the war in Ukraine and jointly with the Norwegian Radiation and Nuclear Safety Authority (DSA) co-organized a workshop to deepen understanding of the lessons learnt in Ukraine. This workshop brought together 130 experts from 28 countries, NGOs and international organizations, including European Commission, WHO and IAEA to share experience and discuss ways to improve the resilience of radiological protection (RP) in such volatile circumstances.

Read a detailed report about the workshop here.

Participants of the workshop – Oslo, 23 Nov 2023.

◆ REAC/TS hosted NATO StTARS (Software Tools for Triage of the Acute Radiation Syndrome) Workshop in Oak Ridge, TN, USA – Nov 2023

By ORISE – source: LinkedIn

This workshop hosted by REMPAN members – the WHO Collaborating Center REAC/TS and the Institute for Radiobiology (Munich, Germany) – on 7 to 10 November 2023. The WS focused on the use of Software Tools for Triage of the Acute Radiation Syndrome (StTARS) enabled to make dose estimations and to calculate the potential ARS severity based on blood cell counts. The WS was open to both civilians and military personnel with medical qualification. During this workshop, speakers described the purpose and function of software tools developed by scientific groups within NATO. These tools either allow an integrated estimation of dose (BAT, WinFRAT), or the prediction of ARS severity based on changes in blood cell counts (H-module) in the first days after an exposure to ionizing radiation. Participants were introduced to these tools by those who developed them, so that they received first-hand knowledge about their strengths and limitations. ◆

◆ HDAIC - REAC/TS Webinar on Radiation Biodosimetry:

Where We Are and Where We Need to Go

On 19 Oct 2023, Dr. Adayabalam Balajee, the head of the cytogenetic biodosimetry lab at REAC/TS presented a webinar organized by the US Homeland Defense and Security Information Analysis Center (HDIAC) concerning the use of biodosimetry during and after mass-casualty events. A closer look was taken at the challenges of providing accurate dosimetry for many patients in as short as possible time, and the pros and cons of existing tools, and up to the future needs.

A more detailed summary as well as the presentation to download are available here. ◆

◆ US NAS Study on Potential Environmental Effects of Nuclear War – 4th meeting Sept 2023

US NAS is conducting a project on potential impacts of a nuclear war. The project's ad-hoc committee holds meetings as the projects moves along. The meeting's webcast can still be watched online on the National Academies of Sciences project's website.

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News from the Network Members

◆ Nagasaki University translated the World Health Organization's publication "National stockpiles for radiological and nuclear emergencies: policy advice" into Japanese and Ukrainian

By Professor Dr Noboru Takamura (Nagasaki University, Japan)

In January 2023, WHO published a report, "National stockpiles for radiological and nuclear emergencies: policy advice," which describes protocols and practices for ensuring the essential elements of a national stockpile of medical countermeasures against radiation emergencies and addresses the governance and management of such stockpiles. As a WHO-collaborating center and a REMPAN member, Nagasaki University translated this publication into Japanese and shared it with other medical facilities, including the Advanced Radiation Emergency Medical Support Center, and local authorities near nuclear power plants in Japan.

Simultaneously, Ukraine is facing the menace of a nuclear attack by Russia. Nagasaki University, with the financial support of the Nagasaki Association for Hibakushas' Medical Care, has also translated the document into Ukrainian and shared with REMPAN members in Ukraine. Nagasaki University will contribute to the preparedness of stockpiles for radiological and nuclear emergencies and continue to support our colleagues in Ukraine as a member of REMPAN.

These translated documents may be downloaded from the following URL: https://www.who.int/publications/i/item/9789240067875

◆ URCRM conducts a radiation emergency exercise – Oct 31, 2023

By A. Akleyev, URCRM-FMBA – Chelyabinsk, Russian Federation

The WHO Collaborating Center Urals Research Center for Radiation Medicine (URCRM) of the Federal Medical Biological Agency (FMBA) of Russia held a radiation emergency exercise to strengthen the hospital response and the skills of medical personnel receiving over-exposed patients. The scenario was based on a release of iodine-131, cesium-137, strontium-90 radionuclides into the environment as a result of a radiation accident. It included a mild and severe overexposure of 15 persons, some of whom were hospitalized with acute radiation syndrome (ARS). Particular attention was paid to the protocol and timely decontamination, dosimetric control, as well as the interactions between the involved personnel receiving and sorting the patients. The after-exercise hot-wash discussion focused on the identified issues and challenges related to the clinical management of ARS and on the ways to solve them.

News from the Network Members

◆ Spanish biodosimetry laboratories develop a national protocol -

By Dr Montoro, Hospital La Fe in Valencia, Spain

On 12 Dec 2022, the I+D+I project's research team received the Spanish Nuclear Safety Council (CSN) award for development of a national protocol on biological dosimetry. This protocol will be drawn up by six Spanish laboratories that perform biodosimetry. The protocol will be agreed by all the laboratories and institutions including the University of Murcia, Hospital Clínico Universitario Virgen de la Arrixaca, Hospital Gregorio Marañón in Madrid, University of Seville, University of Málaga, Hospital Virgen del Rocío, Universitat Autònoma de Barcelona, Hospital de la Santa Creu i Sant Pau and the Centro Oncológico de Galicia. The project is coordinated by the IISLAFE of the Hospital Universitario y Politécnico La Fe in Valencia. The protocol will cover the entire cycle including planning, storage, supplies and equipment, role of response teams and the rest of the process in which biodosimetry should be applied in a radiological accident. The drafting of a National Protocol on Biological Dosimetry aims to bring together those Spanish laboratories with experience in biodosimetry and/or cytogenetic techniques and to provide coordinated support to the country's response to a large-scale radiological or nuclear emergency.

The first meeting of the working group took place at the Hospital Universitario y Politécnico la Fe in Valencia on 24 May 2023 (see the photo below). In the first year of the project, the research team compiled the information from each paticipating lab, including techniques the use, culture conditions, irradiation and calibration curves, etc. Exercises of dose estimation from dicentrics scoring on metaphases images and virtual simulation for the triage of victims using different techniques have been carried out.

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Participants of the Working Group meeting – 24 May 2023 (Valencia, Spain)

◆ Ionizing Radiation, Antioxidant Response and Oxidative Damage: Radiomodulators

By Dr Montoro, Hospital La Fe in Valencia

Drs. A. Montoro and E. Obrador co-edited the special issue of the journal Antioxidants. This Special Issue includes selected contributions focusing on the mechanisms of oxidative damage, and the importance of the antioxidant and inflammatory responses in cell and tissue damages and/or recovery after exposure to ionizing radiaiton. This book includes an editorial and 15 scientific articles, of which 11 are original research papers and 4 are reviews, unraveling the latest advancements in the bioefficacy and/or mechanisms of action of several promising radiomodulators, the capacity of hyperthermia to improve cancer treatment efficacy, clinical models to evaluate the radio-induced damages, and novel IR biomarker technologies.

News from the Network Members

◆ National Training Courses on Medical Preparedness and Response to CBRN Events at NAPH in the Republic of Moldova

By Ion Apostol, Director for National Agency for Regulation of Nuclear and Radiological Activities (NARNRA) – Chisinau, Moldova

A national training course on medical preparedness and response to CBRN events at first response level took place conducted at the National Agency for Public Health NAPH) in the Republic of Moldova on 06-10 November.

25 young specialists from the NAPH and the National Centre of Emergency Medical Care were involved in practical exercises on individual protection of personnel, radiological monitoring of casualties and decontamination after theoretical lectures.

As a continuity, a training course on "Capacity building for preparedness and medical response to nuclear and radiological emergencies" was conducted at Moldovan Institute of Oncology (IO) on 07-08 December 2023. Medical doctors from reference hospitals: IO, Institute of Emergency Medicine and Institute of Mother and Child were trained on medical care of overexposed people during radiological and nuclear accidents.

Radiological triage of casualties, decontamination and medical care as well as de-corporation of internal contaminated people was practically exercised.

A joint training course organized by the WHO Country Office in Moldova and the Ministry of Health is planned for 5-7 March 2024, It will focus on pre-hospital and hospital response to radiological and nuclear emergencies. ◆

◆ RITN Radiation training – Feb 2023

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

The Radiation Injury Treatment Network (RITN) collaborated with the U.S. Department of Health and Human Services (HHS) and the Association of State and Territorial Health Officials (ASTHO), to provide training during the Pacific Islands Preparedness and Emergency Response (PIPER) summit. The training aimed to enhance the preparedness of the United States Affiliated Pacific Islands (USAPI) region in managing radiological incidents. During the event, RITN and ASTHO conducted a joint session utilizing ASTHO's new radiation planning workbook designed to assist jurisdictions in developing their own radiation response plans. It is a valuable resource, offering guidance and best practices to ensure effective preparedness.

In addition, RITN is teaming up with HHS and the Commonwealth of the Northern Mariana Islands (CNMI) to offer Advanced Hazmat Life Support (AHLS) radiation training in Saipan in early 2024. This training will equip healthcare providers and emergency responders in the USAPI region with the necessary skills to respond to radiological incidents. By offering this specialized training, RITN, HHS, and CNMI aim to strengthen emergency preparedness and response capabilities throughout the region.

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News from the Network Members

◆ 2023 ARADOS Group Annual Meeting

By Masayuki Naito and Yoshio Takashima – QST/NIST, Chiba, Japan

The Asian Radiation Dosimetry Group (ARADOS) established in 2015 was inspired by the idea of Dr. Wi-Ho Ha (currently with Korea Atomic Energy Research Institute (KAERI), as a radiation dosimetry-related network in Asia. Its name is a homage to EURADOS in Europe. ARADOS aims to facilitate information sharing on research activities in each country, strengthen human networks, and promote collaborative projects. Since its establishment, Japan, South Korea, and China have taken turns hosting local meetings annually.

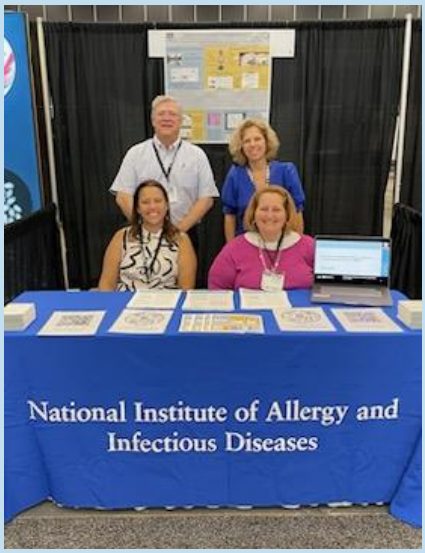
Due to the COVID-19 pandemic, face-to-face meetings were not possible in 2020 and 2021. However, in 2022, a meeting was held in Seoul, South Korea, and in 2023, alongside the ICRP Symposium, a hybrid meeting took place in Akihabara, Tokyo, on 10 Nov. The meeting had a total of 41 participants (including online attendees) and included 11 presentations. Discussions on future action plans took place within each working group (internal dosimetry, external dosimetry, biodosimetry, and computational dosimetry).

The National Institutes for Quantum Science and Technology (QST), which hosted the 2023 meeting, provided insights into the current status of nuclear disaster response in Japan (in particular, thyroid dose monitoring for the general public) and introduced a newly developed thyroid monitor applicable to a wide age range, including infants and young children. This monitor is scheduled for product release soon, generating significant interest from participants. As a WHO REMPAN member, QST remains committed to international cooperation, including active participation in ARADOS activities, in the future.

◆ RNCP-Sponsored Symposium at the International Congress on Radiation Research in Montreal, Canada

By Andrea DiCarlo-Cohen, Director, NIAID, NIH Radiation and Nuclear Countermeasures Program (RNCP)

On 28 August 2023, NIAID (National Institute of Allergy and Infectious Diseases) sponsored The Symposium on *Countermeasures, Emergency Preparedness, and Responses*, which included a presentation by the RNCP team (on the photo below). ◆



News from the Network Members

◆ Building capacity of Ukraine's health sector for radiation emergency response

By Prof. A. Chumak, NRCRM/NAMS

In the second half of 2023, the WHO Collaborating Centre - National Research Center for Radiation Medicine (NRCRM) of the National Academy of Medical Sciences of Ukraine (NAMS) continued supporting the efforts of the WHO Country Office in Ukraine towards strengthening the nation's preparedness for radiological and nuclear emergencies by further implementation of the health workers training on "Managing exposure assessment and medical response to a radiation emergency in Ukraine".

Considering the increased risk of a potential radiation emergency, especially in the vicinity the nuclear power plants (NPP) in Rivne and Volyn oblasts (Rivne NPP), Khmelnitsky oblast (Khmelnitsky NPP) and Zaporizhzhia oblast (Russian-occupied Zaporizhzhia NPP) were selected for receiving NRCRM trainings.

Health specialists, including experts from the regional Centers of Disease Control (rCDCs), emergency health care physicians, nurses, paramedics, educators and experts from oblast medical professional organizations were the target audience. The educational module included basic knowledge on radiation health effects, pre-hospital response and triage, dosimetry, decontamination, monitoring and management of exposed to radiation. Participants received educational information packages reinforced with practical sessions to enable them to work with radiation detection and measuring devices, which are now in the procurement state by the WHO.

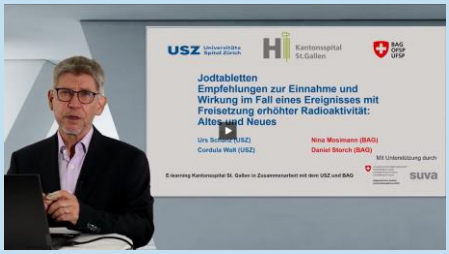
During the year of 2023, the NRCRM conducted 18 workshops with the total 280 participants, including 194 physicians and 86 nurses. This work was positively evaluated by the audience and appreciated by the authorities. The NCRM continues providing information and technical assistance to the WHO Country Office in Ukraine on the procurement of equipment for radiation monitoring for emergency health care facilities, hospital emergency departments, and radiological monitoring laboratories of the rCDCs. ◆

Photo: Participants of the training course – NRCRM, Kyiv, Ukraine

◆ Two new e-learning sessions on the Swiss Website Strahlenunfall

By Nina Mosimann and Urs Schanz

To promote knowledge on the subject of radiation accidents, Urs Schanz from the USZ, together with the FOPH, has been visiting various clinics and centres that could act as essential partners within the Swiss network. One important outcome of these visits was the recording of two e-learning sessions on the topics of "Radiation accidents and the medical treatment of irradiated patients" and "Iodine tablets and antidotes".



Both e-learning sessions were created in collaboration with the Cantonal Hospital of St. Gallen (On the photo: Prof. Urs Schanz giving a video-recorded lecture) and can be accessed via the Swiss Website Strahlenunfall. ◆

News from the Network Members

◆ BIODORA - European Training Course on Biological Dosimetry

By Dr. Martin Bucher and Dr. Ursula Oestreicher, Federal Office for Radiation Protection, Germany

From 26 June to 14 July, the European training course "BIODORA" ("Application of Biological Dosimetry in Radiation Protection & Radiation Research") was hosted by the Federal Office for Radiation Protection (BfS) as a WHO Collaborating Center with the aim of maintaining and sharing knowledge in the field of biological dosimetry. This course was funded by PIANOFORTE research partnership.

The course gave the participants an insight into the different methods of biological dosimetry that can be used in individual dose reconstruction, emergency response or radiation protection. In the frame of methodological lectures and laboratory sessions the advantages, limitations and special features of the individual methods were explained and demonstrated. Thus, the participants were not only taught how to apply the methods but were also encouraged to critically review the research results.

A total of 12 doctoral students, post-docs and scientists from eight European countries participated in both the lecture and laboratory sessions (photo) and 12 additional participants attended the lectures online from Spain, Egypt and Indonesia.

RENEB network and WHO BioDoseNet partners for the course: Bundeswehr Institute for Radiobiology (Germany), Ghent University (Belgium), Health Canada (Canada), IRSN (France), National Center for Scientific Research „Demokritos“(Greece), Stockholm University (Sweden), Universitat Autònoma de Barcelona (Spain) und UK Health Security Agency (United Kingdom).

The training course and its objective are closely related to the WHO BioDoseNet activities as a global network of biodosimetry laboratories that promotes cooperation, harmonisation of laboratory techniques and dose assessment methods, information exchange and capacity building for responding to radio-nuclear events.

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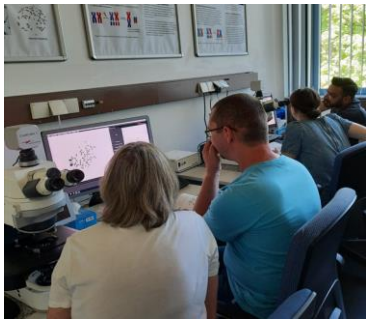


◆ 4th International Conference on Dosimetry and its Applications (ICDA-4) in Valencia, Spain – 16 to 20 Oct 2023

By Dr Montoro, Hospital La Fe in Valencia, Spain

The 4th International Conference on Dosimetry and its Applications (ICDA-4) brough together scientists from around the world who share an interest in the measurement and application of ionizing radiation.

One of the plenary sessions was focused on biodosimetry, radiobiology and retrospective dosimetry. The presenters coming from various WHO BioDoseNet participating institutions includied: Dr M. Port, Bundeswehr Institute of Radiobiology, Germany; Dr F. Trompier, IRSN, France; Dr. A. Montoro, Hospital Universitari La Fe de València, Spain; Dr C. Badie, UK HAS, England; Dr J.F. Barquinero, Vice-President RENEB; Dr Endesfelder, BfS, Germany. ◆

News from the Network Members

◆ Activities of the Competence Centre of the Austrian Federal Ministry of the Interior (CBRN)

Since 1960, the CBRN Competence Centre of the Austrian Federal Ministry of the Interior has been providing comprehensive courses tailored to the needs of emergency services, police forces and relevant organisations on topics such as radiation protection and emergency response, as well as various CBRN training courses. It is recognised as one of the eight IAEA Capacity Building Centres (CBC) worldwide and serves as a WHO-REMPAN Liaison Institution.

From 30th October to 3rd November, the CBRN Competence Centre jointly with IAEA, organised the **"Pilot Workshop on Considerations for Preparedness and Response to Nuclear and Radiological Emergencies triggered by Nuclear Security Events"**.

Experts from the IAEA, our CBC, the UK, Lebanon, the USA, the Kingdom of Bahrein and
the Republic of Croatia trained 27 participants from 22 different countries.
The objective of the event was to raise awareness and train participants in emergency preparedness for nuclear or radiological incidents, triggered by a nuclear security event. It also provided a platform to share experiences and discuss challenges in coordinating and managing responses, along with strategies to overcome these challenges.

From 4th to 8th December, the IAEA organised **an expert mission to establish a Capacity Building Centre on Emergency Preparedness and Response (CBC-EPR) in the city of Centurion, South Africa**. Our CBRN Competence Center expert was on the ground, collaborating with other experts and 18 national participants to identify opportunities, gaps, and improvements.

The successful mission resulted in key recommendations to assist our South African colleagues in the effective organisation of the CBC-EPR.

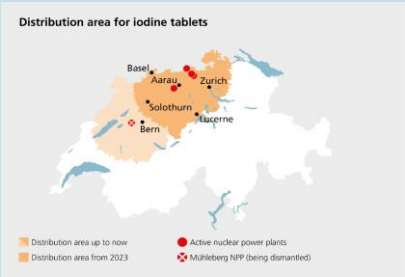
For questions about this information, please contact the author kateryna.degtiarova@bmi.gv.at or Ilian.Scheutz@bmi.gv.at.

Austrian Federal Ministry of Interior
Directorate Special Units/Special Intervention Unit Cobra/CBRN Competence Center
Akademiestr. 3, 2514 Traiskirchen, AUSTRIA

◆ Distribution of KI Tablets Within a Radius of 50 km around Swiss NPP

By Nina Mosimann and Urs Schanz

In autumn 2023, iodine tablets were distributed to all households and businesses within a radius of 50 km around Swiss nuclear power plants. This affects close to 800 municipalities and around 5 million people. The population was informed by the federal government in October 2023 by means of information flyers and the media. Comprehensive information on the tablets is also available at www.jodtabletten.ch.
Iodine tablets protect the thyroid gland from absorbing radioactive iodine and thus help to prevent thyroid cancer, especially in case of children and adolescents but also in case of pregnant women to protect the unborn child. However, they do not protect against other radioactive substances. Thus, iodine tablets are never ordered as the primary and sole measure. The population will at the same time always be asked to seek protection inside the house.
According to a recommendation issued by the Federal Commission for Radiological Protection KSR in autumn 2022, iodine prophylaxis is effective for children, adolescents and pregnant women, but the use of iodine tablets is no longer recommended for people over 45 years of age.



News from the Network Members

◆ QST's Bioassay Lab Excels, Securing Three TOP LABO Ratings in PROCORAD Campaign

By G. Yang, QST/NIRS – Chiba, Japan

The National Institutes for Quantum Science and Technology (QST) in Japan participated in the 2023 international comparisons organized by PROCORAD (Association for the PROmotion of Quality Control in RADiotoxicological Analysis). Engaging in six test items, our participation underscored the capabilities of our new bioassay laboratory, which commenced operations in 2021 (please refer to the REMPAN eNewsletter Issue N24, January 2022). Since the establishment of our bioassay laboratory, the efforts focused on refining radiometric and mass spectrometric methods, alongside enhancements to lab manuals and specifications. These initiatives aimed at elevating the QC standards for the bioassay of actinides. Evaluating our performance against key criteria such as Z-score, bias, and En value, our bioassay lab achieved a remarkable breakthrough, securing three TOP LABO ratings in the 2023 comparison (Actinides in urine, Uranium in faecal ashes, and Actinides in urine with DTPA).

Moreover, recognizing the importance of knowledge dissemination, we are currently conducting a comprehensive three-day bioassay training course that focuses on the measurement of actinides using the alpha spectrometric method. Simultaneously, preparations are underway for a new bioassay training course, emphasizing the measurement of actinides through the mass spectrometric method.

This accomplishment underscores QST's commitment to advancing excellence in bioassay practices and contributing to the broader scientific community. We eagerly anticipate continuing our efforts in the pursuit of scientific innovation and collaboration as part of REMPAN's activities.

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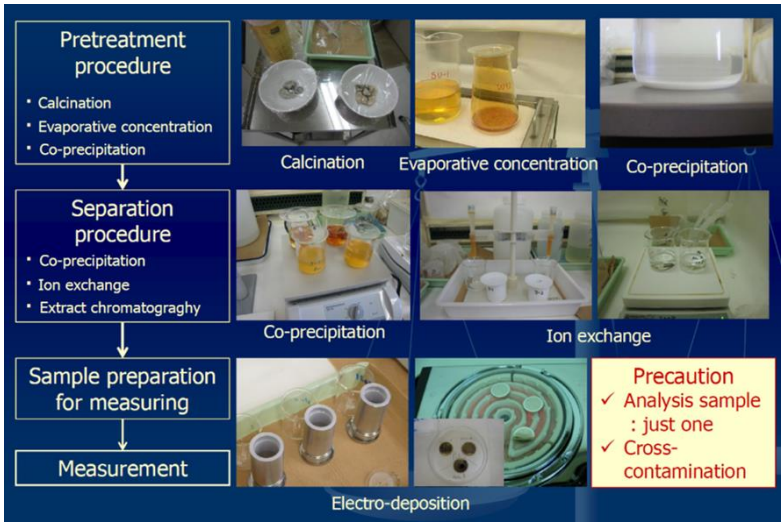
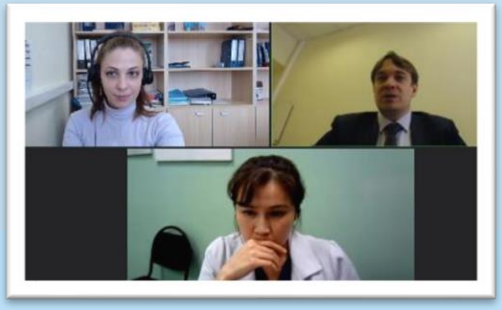


◆ Regional Training Course on Radiation Protection and Safety and Accident Prevention in Radiotherapy

By A. Bushmanov –SRC-FMBC, WHO CC, Moscow, Russian Federation

WHO Collaborating Center – the State Research Center (SRC) - Burnasyan Federal Medical Biophysical Center (FMBC) of Federal Medical Biological Agency (FMBA) head online the Regional Training Course on Radiation Protection and Safety and Accident Prevention in Radiotherapy, in the framework of the IAEA's Technical Cooperation Program (TC Project RER6036) and Program for Cancer Treatment (PACT). 50 experts from Russia, Armenia, Kazakhstan and Uzbekistan attended the training. Medical physicists, radiation safety engineers and radiation protection officers had an opportunity to strengthen the theoretical knowledge, as well as test the skills and hand-on practice. It improved the competencies and technical skills of young medical professionals from different countries in the field of radiation protection and safety of staff and patients undergoing radiotherapy. Upon completion of a training, all participants receive certificates and course materials for further use in their work at home institutions. ◆



News from the Network Members

◆ Inter-University Agreement between Würzburg University in Germany and Fukushima Medical University in Japan

By Dr Yurie Kobashi, FMU

Since the aftermath of the Great East Japan Earthquake followed by the Fukushima Daiichi Nuclear Power Plant accident, Fukushima Medical University (FMU) has actively engaged in expert exchanges with Würzburg University under the umbrella of WHO-REMPAN. In March 2023, The FMU's Advanced Clinical Research Center conducted exchanged collaborations in the field of nuclear medicine and extending the WHO-REMPAN activities to jointly promote advanced nuclear medicine research. Our university has entered into a new inter-university agreement with the Würzburg University on October 19, 2023.

With the establishment of the Fukushima Institute for Research, Education and Innovation (F-REI) in April, 2023, FMU aims to contribute to the fields of "Radiation Science and Drug Discovery Medicine" and "Accumulation, Dissemination, and Application of Data and Knowledge Regarding Nuclear Disaster Medicine" in the framework of REMPAN activities.

◆ Curtsey visit of Dr Carr to FMU, Fukushima, Japan

In addition, the collaboration between our university and WHO-REMPAN has deepened, particularly since our university was designated as the WHO-REMPAN Collaborating Center in 2018. Dr Zhanat Carr, Coordinator of the WHO-REMPAN, visited FMU in November 2023. During the visit, detailed reports on operational activities were provided by professors, including Dr. Seiji Yasumura, Director of the Radiation Medical Science Center, leading to a meaningful exchange of opinions.

◆

Coming and Going

◆ Retirement:

Dr Adela Salame-Alfie a senior health physicist in the Radiation Studies Section at the U.S. Centers for Disease Control and Prevention (CDC) **retired on January 31, 2024**, after 9 years of federal service. In retirement, she plans to consult and continue volunteering in scientific organizations as well as with her local community volunteer organizations, reconnecting with some art projects, traveling and spending time with friends and family. We wish Adela an exciting new chapter of her life and hope she will not abandon us completely! With gratitude, REMPAN family.

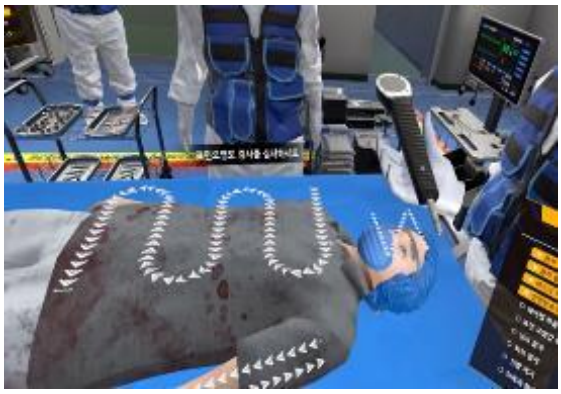
◆ New Face: Dr. André Luiz Lopes Quadros

is appointed as a new Director of IRD – Rio de Janeiro, Brazil. André holds a Doctorate degree in Information Science, MSc in Information Sciences and BSc in Computer Science and Data Processing. He served as a Senior Technologist at the National Nuclear Energy Commission (1997-2016), Directorate of Radioprotection and Nuclear Safety. He held various senior and leadership positions at the Cabinet of the Presidency, Nuclear Information Center, Information Technology Governance and Infrastructure Division (2005 -2006), and others.

News from the Network Members

◆ KIRAMS developed XR (VR/AR/MR) Education Tools for Radiation Incidents - *by H. Kong, KIRAMS, Seoul, Republic of Korea*

NREMC (National Radiation Emergency Medical Center) in the KIRAMS (Korea Institute of Radiological and Medical Sciences) oversees medical response to radiation incidents and conducts training to develop specialized response personnel. The training primarily consists of lectures on topics such as the effects of radiation on the human body, case studies of incidents, legal regulations, as well as practical exercises in contamination measurement and decontamination.



Recently, we have been enhancing our training curriculum and increasing the effectiveness of radiation emergency education by developing Extended Reality (XR) (Virtual Reality VR / Augmented Reality AR / Mixed Reality MR) education content specially designed for radiation incidents. We have implemented specialized processes, such as severity triage considering radiological symptoms, measurements using surface contamination monitors, and dry and wound decontamination, into VR and AR/MR content. The scenarios are constructed based on real-life cases and scientific evidence. This utilizes HMDs or mobile devices, allowing learners to enhance their proficiency in responding to radiation incidents through interaction and repetitive learning.

The 8 types of XR development educational content are as follows:

1. VR Treatment for Radiation exposure patients
2. VR Radiation exposure combined Triage
3. AR/MR Radiation measurement equipment application
4. VR Radiation measurement equipment application
5. VR Decision making for Radiation incident
6. VR Situation room
7. Multi-angle VR Video
8. VR Learning archive

The XR-based training program has been operational since last year and is designed for radiation emergency personnel and first responder. So far, the education program has received positive feedback from the trainees.

This year, we have plans to expand XR-based education by introducing specialized courses, extending education to different regions, and enhancing content for learning at various difficulty levels. The XR education developed to adapt to new technologies and paradigms is a next-generation educational method that addresses the limitations of current education models. *

* Augmented Reality (AR) and Mixed Reality (MR), where an overlay of physical and digital elements is used; Virtual reality (VR): a fully digital immersive environment; and Extended reality (XR) is an umbrella term that includes different technologies, including AR, MR, and VR. ◆

Coming and Going

◆ New faces

Dr. Jinkyung Lee was appointed as the new President of the Korea Institute of Radiological and Medical Sciences (KIRAMS) on April 19th, 2023. She joined KIRAMS in 2005 and held various positions, including Director of the Department of Radiation Emergency Medicine, Director of the Department of Dose Assessment, and Director of Strategic Planning. She served as the Vice Chair of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) from 2019 to 2021.

Dr. Wonil Jang, a specialist in radiation oncology, was appointed as the Director General of the National Radiation Emergency Medical Center (NREMC) on April 19th,

News from the Network Members

◆ National IHR Focal Points participated in a functional simulation exercise to handle a radiation accident effectively

By N. Isla, JADE Exercise Director, WHE, WHO/Europe

The Joint Assessment and Detection of Events (JADE), a functional simulation exercise, is an annual initiative conducted by the Regional Office for Europe of the World Health Organization. Its primary objective is to assist National Focal Points (NFPs) in managing public health events and emergencies that have the potential to cross borders, which may include not only disease outbreaks but also chemical and radiological hazards.

The 2023 JADE exercise was based on a radiation emergency scenario*.
The NFPs were required to coordinate with their radio-nuclear (RN) competent authority to evaluate the risk, notify the relevant authorities under the International Health Regulations (IHR) (2005), and formulate a list of response actions. In addition to notifying WHO, NFPs needed to consider international reporting mechanisms such as the Unified System for Information Exchange in Incidents and Emergencies (USIE) or the European Community Urgent Radiological Information Exchange (ECURIE).
During radiological or nuclear emergencies, IHR NFPs must respond to four IHR Annex 2 criteria questions with all available information.

- is the public health impact serious?
- is the event unusual or unexpected?
- is there a significant risk of international spread?
- is there a significant risk of travel or trade restrictions?

JADE exercise is a valuable tool for NFPs to assess their readiness for radiological and nuclear emergencies under the International Health Regulations. Countries can identify gaps in their plans and test communication channels with relevant authorities, gaining insights in handling radiation emergencies.

https://www.who.int/europe/news/item/07-12-2023-countries-practice-communicating-potential-hazards-and-emergencies-to-who

*The JADE 2023 scenario was developed in consultation with Dr. Zhanat Carr of the Radiation and Health Unit, WHO/HQ and Blake Orr of the AD Radiological Assessment, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA).

◆

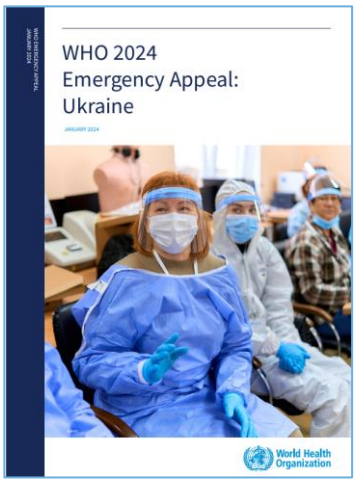
◆ 2nd International Symposium on Radiation Protection - VIII Peruvian Congress on Radiation Protection in Cusco, Peru

By A. Montoro and E. M. Gironzini

The II International Symposium on Radiation Protection - VIII Peruvian Congress on Radiation Protection was held in Cusco, Peru, from November 27 to 30, 2023.
The 30th anniversary of the Federation of Radiation Protection of Latin America and the Caribbean (FRALC) was also celebrated on 26 Nov 2023. The Symposium gathered 145 participants from 16 countries: Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Spain, Guatemala, Honduras, Mexico, Panama, Peru, Portugal, Uruguay and Venezuela. The Symposium was hosted by the Peruvian Society of Radioprotection (SPR) and the Federation of Radioprotection of Latin America and the Caribbean (FRALC) and supported by the National University of San Antonio Abad del Cusco and the Spanish Society of Radiological Protection (SEPR), the Ibero-American Forum of Radiological and Nuclear Regulatory Agencies (FORO) and the Latin American Network of Radiological Protection in Medicine (LAPRAM Network).
Dr. A. Montoro's presented at the meeting "Advances in biodosimetry and response in radiological emergencies" in the framework of the activities of the Spanish Society of Radiological Protection (SEPR) and reported on the latest advances in biodosimetry, automated techniques with a focus on emergency response. ◆

WHO Publications

◆ Ukraine: WHO Health Emergency Appeal 2024



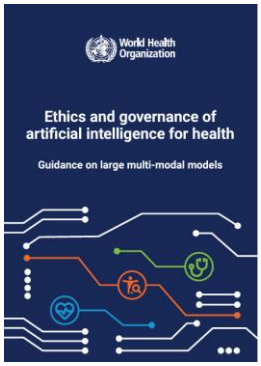
This comprehensive version of WHO's Ukraine response appeal provides a detailed overview of WHO's work on delivering critical, life-saving healthcare for vulnerable, conflict-affected people and those at risk of service disruptions in Ukraine. Since February 2022, WHO, the Ukrainian health authorities and international and national partners have reached and assisted millions of people and prevented Ukraine's health system from disintegrating and ceasing to function. This detailed appeal WHO's resource needs for the health response aiming to assist 3.8 million people in Ukraine, estimated at US$ 75 million from January to December 2024. Link to download

◆ WHO benchmarks for strengthening health emergency capacities (25 Jan 2024)

The first edition of the benchmarks was published in 2019 to support countries in developing, implementing and documenting progress of national IHR or health security plans (e.g. national action plan for health security (NAPHS), national action plan for emerging infectious diseases, public health emergencies and health security and other country level plans for health emergencies). The tool has been updated to incorporate lessons from COVID-19 and other health emergencies, to align with the updated IHR monitoring & evaluation framework (IHR MEF) tools and to support strengthening health emergency prevention, preparedness, response and resilience (HEPR) capacities and the Preparedness and Resilience for Emerging Threats (PRET) initiative.

Link to download

◆ Ethics and governance of artificial intelligence for health: Guidance on large multi-modal models (18 Jan 2024)



Artificial Intelligence (AI) refers to the capability of algorithms integrated into systems and tools to learn from data so that they can perform automated tasks without explicit programming of every step by a human. Generative AI is a category of AI techniques in which algorithms are trained on data sets that can be used to generate new content, such as text, images or video. The new WHO guidance addresses one type of generative AI, large multi-modal models (LMMs), which can generate diverse outputs. It has been predicted that LMMs will have wide use and application in health care, scientific research, public health and drug development, although it is not yet proven whether LMMs can accomplish a wide range of tasks and purposes. Link to download

◆ Fukushima Water Discharge Explained

By Prof. M. Akashi

The article "Fukushima Water Discharge: The Science Behind the Decision" by Dr Makoto Akashi, the president of the Japanese Association for Radiation Accident/Disaster Medicine, was published in September 2023. That has been shortly after the start of the longlasting process of realeasing more than one million tonnes of treated radioactive water into the sea. Dr Akashi aims at preventing or adjusting disproportionate anxiety of the people generated by misunderstanding or lack of knowledge with his structured explaining. The contaminated water has been cleared from cesium and strontium by an Advanced Liquid Processing System (ALPS) below their regulatory limits. As the tanks with the treated water had reached their capacity, the remaining tritium, which cannot be cleared by ALPS, has been diluted by seawater far below the regulatory limits. So even children can drink this water safely and stay far lower than the WHO-guidance level for drinking water concerning tritium.

Please see the original article for further details and illustrations. ◆

Publications

◆ Medical Preparedness and Response for a Nuclear or Radiological Emergency: An Assessment Study in Selected Hospitals in Saudi Arabia

By A M. Assiri, M. Almalki, N. Shubayr, A. Alqahtani, et al.

The scientific paper aimed to evaluate and improve the readiness of selected hospitals in the Kingdom of Saudi Arabia for nuclear and radiological emergencies. A team of experts developed and issued guidelines for responding to radiation emergencies. 21 reference hospitals were selected throughout the Kingdom, and an evaluation process was conducted with four basic criteria and 50 sub-standards. The initial evaluation showed that the average preparedness was 67.5%, and with the provision of technical and logistical support, assessing readiness, and making recommendations for improvement, the re-evaluation showed that these interventions were very effective in enhancing the preparedness of all hospitals, with an average of 99.1% and 14 hospitals scoring 100%, and recommended monitoring and evaluation continuously to maintain a high level of readiness.

DOI: https://doi.org/10.1051/radiopro/2023028

◆ US Radiation Injury Treatment Network's Guidance Documents

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

Due to the challenges and uncertainty that will exist during a radiological/nuclear disaster response, a second triage must be conducted at the specialist level to determine which patients may need advanced management on a hematology/oncology floor or bone marrow transplant unit for care of their acute radiation syndrome as well as providing consultation for selected patients on who should be cared for as an inpatient, outpatient or possibly even discharged. The Radiation Injury Treatment Network has developed guidance documents to help all medical providers as they triage and treat ARS casualties (RITN Acute Radiation Syndrome Treatment Guidelines, Medical Order Sets for Adult and Pediatric Radiation Injury Treatment, RITN Radiation Injury Referral Guidelines, RITN Cytokine Administration Triage Guidelines for Acute Radiation Syndrome). This secondary triage was identified as having a gap with those who typically are not involved with triage following a disaster (hematologists/oncologists). To provide a concise process to review all casualties with the best use of critical resources in mind the RITN developed a one-page guide to assist with the triage of ARS casualties.

RITN
RADIATION INJURY TREATMENT NETWORK

◆ International Textbook – *by Dr Montoro, Hospital La Fe in Valencia*

In October 2023, Springer has published the "Radiobiology Textbook".

The objective of this book is to provide a solid foundation for those interested in the fundamentals and practice of radiobiological science. It is intended to be a teaching resource that meets the needs of students, researchers or any citizen. The book contains 687 pages, distributed in 12 chapters. 126 experts from all over the world have worked on the book, some of them belonging to REMPAN.

The new item has been published in Spanish in our scientific society.

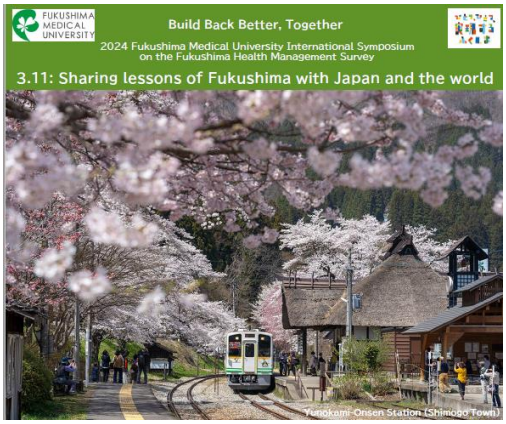
◆ ◆ Coming Soon from CDC - *by Germaine Vazquez (CDC)*

The Centers for Disease Control and Prevention (CDC) is updating the Psychological First Aid in Radiation Disasters training program, designed to increase awareness of mental health consequences of radiological and nuclear incidents. The updated training will feature new case studies and videos incorporating lessons learned and firsthand experiences from past disasters including the Fukushima Daiichi incident in 2011. In the videos, Prof. Arifumi Hasegawa – a medical responder from Fukushima Medical University, provides his perspective on how the disaster unfolded over the first few weeks of the event, and its impact on responders and the Japanese public. The videos also highlight the importance of psychological first aid during disasters. Stay tuned for the updated Psychological First Aid in Radiation Disasters, which will be available on CDC's Radiation Emergencies website.

Mark your calendars! Upcoming events

◆ The 6th International Symposium on the Fukushima Health Management Survey on Sat. 02 March, 2024

By Prof. A. Hasegawa



Symposium web site : https://fhms.jp/en/symposium/2024
Online participation is available with pre-registration (please fill out the registration form). For any inquiry, please contact FMU Office of Public Communications and International Cooperation

◆ Ionizing Radiation Exposure in Vulnerable Populations: Needs, Challenges and Mitigation Strategies – Workshop in Rockville, USA, 10 to 11 April 2024

The goals of the workshop are to identify specific challenges and needs of vulnerable populations (neonatal, pediatric, pregnant, lactating, geriatric, and fetal) after exposure to radiation; examine the state of science for radiation medical countermeasures & biodosimetry in these populations; and discuss regulatory policies that influence their inclusion in research and development. The planning committee includes staff from National Institute of Allergy and Infectious Diseases (NIAID), National Institute of Child Health and Human Development (NICHD), National Institute on Aging (NIA), and National Cancer Institute (NCI), all part of the National Institutes of Health (NIH). Further info: Dr A. DiCarlo-Cohen.

◆ IRPA 16th International Congress in Orlando, USA 07-12 July 2024

This year's main theme will be "Radiation Harmonization: Standing United for Protection". The deadline for submitting abstracts has passed but you can still register to attend the congress. The planned topics range from the basic sciences over radiation protection, communication, training up to dosimetry and industrial aspects as well as emergency management and radioactive waste management. Here you can take a deeper look into the IRPA-16 programme.

◆ **The 48th European Radiation Research Society Meeting (ERRS 2024)** will be held in Aveiro (Portugal) from on 10-13 Sept 2024. The website has been launched at ERRS2024.pt and abstract submission is now open!

◆ **ConvEX-3(2025) Exercise** will be held in Romania in May 2025.

Disclosure

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