Dear colleagues around the globe

First of all, it is a pleasure and honor for us to host the 16th WHO REMPAN meeting to be held in Seoul, Republic of Korea, 12-14 May, 2020.

Starting as the Radiation Medicine Research Center in 1963, KIRAMS has remained not only one of the Korea’s leading cancer centers, but also played a pivotal role in advancing medical preparedness and response to nuclear or radiological emergencies in Korea.

The beginning of a lasting relationship between KIRAMS and WHO REMPAN can be traced back to 2004 when we first joined the network as Liaison Institute. Now as an established WHO Collaborating Centre for Radiation Emergency Preparedness and Response, we have continuously demonstrated our willingness to contribute to the WHO’s mandate by assisting capacity building activities in the field of medical preparedness and response to nuclear or radiological emergencies in Asian region and beyond. We have hosted so far three Asian WHO REMPAN workshops in 2015, 2016, and 2018.

Korea has 25 nuclear reactors in operation. Among the 449 operational nuclear reactors worldwide, 24% of them are located in Northeast Asia. In addition, the medical and industrial use of radiation is on a constant rise, as the number of entities using radioisotopes amounts to 8,000 this year in Korea. A nuclear or radiological emergency rarely occurs, but when it does it can transcend national borders and exceed one country’s capabilities. Considering that our region is densely populated with nuclear reactors, we recognized the importance of international cooperation early on. In this context, we are pleased to be involved in organizing the 16th WHO REMPAN meeting, as it will provide a global platform for sharing the latest updates, best practices and information among the professional community.

The 16th WHO REMPAN meeting will take place at COEX, which is located at the heart of Gangnam District, Seoul. From cultural landmarks to fine dining, lively nightlife, fashionable shopping and access to the great outdoors, Seoul offers what you’re seeking and much more. Please mark the date on your calendar! We look forward to welcoming as many colleagues as possible in Seoul next year.

Dr. Young Woo Jin
Director General
National Radiation Emergency Medical Center
Korea Institute of Radiological and Medical Sciences
News – From REMPAN Secretariat

In the second half of 2019, the WHO REMPAN Secretariat implemented the following activities:

◆ 12-14 June 2019 – Geneva, Switzerland

The 27th Regular Meeting of the Inter-Agency Committee on Radiological and Nuclear Emergencies took place in Geneva from 12 to 14 June 2019 hosted by the World Health Organization. Representatives of ten IACRNE participating organisations attended the meeting (CTBTO, EADRCC, EC, EUROPOL, FAO, IAEA, OECD NEA, OCHA, UNEP and WHO). In addition, a representative of IFRC and UNDSS (corresponding organizations) participated at the meeting as observers.

The UNSCEAR was represented by UNEP.

The Meeting recapitulated conclusions and outcomes from the 26th Regular Meeting, noted reports on activities in organizations present at the meeting, noted information on practical arrangements between the IAEA and the IACRNE participating organizations and discussed lessons from the ConvEx-2f exercises.

The meeting participants conducted the table-top exercise (IACRNE TTEX 2019) prepared by the IAEA (IACRNE Secretary).

The Meeting considered and endorsed a consolidated proposal for the Committee’s work plan.

Photo: Participants of the 27th Regular Meeting of IACRNE

◆ 09 September 2019 – Moscow, Russian Federation.

The subregional meeting of REMPAN centers in the Russian Federation was organized upon request of Dr. Melita Vujnovic, the Head of the WHO Country Office in Moscow and hosted by the WHO Collaborating Center - Federal Medico Biological Center (FMBC) (Head – Dr Andrey Bushmanov). In addition to the radiation emergency medicine experts from FMBC, meeting participants included representatives from four Russian WHO CCs and three REMPAN Liaison institutions, including one from Belarus. The Russian-speaking participants discussed the common areas of work, goals, challenges and ways of strengthening national and regional preparedness and response to radiological and nuclear emergencies.

Photo: Participants of the Russian-speaking REMPAN institutions meeting in Moscow – 04.09.2019


WHO Western Pacific Regional Office has conducted Joint Externa Evaluation of the national health emergency preparedness and response in the RMI. This small South Pacific country made of more than 1000 atolls has a special history related to radiation: the USA conducted here more than 60 nuclear tests from the end-1940s to 1950s, including the explosion of the largest hydrogen bomb. Until today, some of the atolls remains inaccessible for human activity due to the contamination, their residents resettled and not allowed to return. The Marshall Islands Nuclear Claims Tribunal awarded more than $2bn in personal injury and land damage claims due to the nuclear tests but stopped paying after a compensation fund was exhausted.

However, a more pertinent issue for this small nation is the climate change. With the sea level raising due to the global warming, this represents an immediate problem for the future of this small nation with the population about 60 thousand people.

Photo: Dr Robert Maddison – Chief of Staff, Majuro Hospital, RMI
News – From REMPAN Secretariat

◆ 04 October, 2019 – Semipalatinsk, Kazakhstan

The International Symposium “Low-Dose Radiation and Cancer: 70 years after the first test at Semipalatinsk nuclear test site (STS)” was jointly organized by the WHO’s International Agency for Research on Cancer (IARC) and Kazakh National Institute for Radiation Medicine and Ecology (KIRME) with participation of the international experts from Japan, France, Russian Federation, IARC and WHO. Since 1949 59 1989, more than 400 nuclear tests were conducted at the

The scope of the Symposium included issues of retrospective dosimetry, long-term health effects of low-dose exposures due to nuclear fallout, and psycho-social impact of former nuclear testing programmes. The participants agreed to develop a joint report to reflect the discussions and forward looking recommendations for future research in the area of low-dose health effects of ionizing radiation.

Photo: Participants of the Int. Symposium in Semipalatinsk – 04.10.2019◆

◆ 5-8 November, 2019 – Paris, France - 44th Meeting of the Working Party on Nuclear Emergency Matters (WPENM)

WHO is developing a new Framework for addressing mental health and psycho-social support issues in relation to preparedness and response to nuclear emergencies. The Expert Group for Non-Radiological Health Impact of Radiological and Nuclear Emergencies (EGNR) that was set up by the WPENM of the Nuclear Energy Agency (NEA/OECD) to address the issue of incorporating the aspects of management and mitigation of psycho-social and mental health impacts of radiation emergencies into EPR arrangements, met in Paris in connection with the 44th WPENEM annual meeting, discussed the feedback received to the WHO Framework draft, and reported on the progress to the meeting participants.

Photo: members of the EGNR at the working meeting on 05 Nov, 2019 – Paris.

News – From REMPAN Secretariat

◆ 19 October, 2019 – the 4th REMPAN Webinar on Hospital Preparedness to Radiological and Nuclear Emergencies

The REMPAN Webinar series were launched in March 2018 and have covered so far:
- public health impact of the nuclear detonation in March 2018;
- radiation and thyroid cancer – September 2018;
- psycho-social and mental health impact of nuclear accidents – in April 2019. The last Webinar focused in the requirements for hospital preparedness for radiological and nuclear emergencies. This topics is of a special interest in connection with the WHO's Joint External Evaluations (JEE) program, when member states often ask whether WHO has developed specific criteria for health care facilities preparedness for CBRN accidents.

He topics of the 4th REMPAN Webinar included hospital preparedness for radiological and nuclear emergencies. This topics is of a special interest in connection with the WHO's Joint External Evaluations (JEE) program, when member states often ask whether WHO has developed specific criteria for health care facilities preparedness for CBRN accidents.

Distinguished speakers have discussed main approaches for facility infrastructure, equipment, stockpiles, and workforce requirements. The outcome of the 4th Webinar will be used as a basis for developing the Hospital Preparedness Check List for Radiation Emergency response, building on the earlier check list by the WHO Regional office for Europe. ◆
Scientific Events

2nd General Assembly of the RENEB Association in Stockholm

By Dr. Ulrike Kulka - Head of Section WR2 "Biological Dosimetry"
Department Radiation Protection and Health
Bundesamt für Strahlenschutz/Federal Office for Radiation Protection

The 2nd General Assembly of the RENEB Association was hosted by Stockholm University in Stockholm, Sweden on 14 October 2019, prior to the ERPW 2019. The 17 representatives from the 14 voting member organisations (BfS/Germany, BIR/Germany, CRPR-SU/Sweden, IRSN/France, NCCRBP/Bulgaria, PHE/United Kingdom, SERMAS/Spain, UAB/Spain, UGent/Belgium, INFN/Italy, IST/Portugal, NCSR/Greece, IRBA/France, DSA/Norway) attended the meeting, including two honorary members, David Lloyd (PHE) and Philippe Voisin (former IRSN). The current state of the network and its activities, necessary adaptions and future actions have been summarized and discussed. In addition, topics such as intercomparison exercises, QA&QM needs, E&T activities, sample transportation, as well as communication and cooperation with national and international emergency preparedness units have been addressed. Special emphasis was put on the lessons learned from past exercises and on preparations for upcoming exercises. In total, the presentations and discussions among the partners showed that the RENEB network successfully continued its activities and is prepared to contribute to individual retrospective dose estimations in case of a larger radiological incident. It was also shown, that both, performing exercises which mimic real radiological scenarios, as well as close cooperation with national and international emergency preparedness organisations are essential for running a sustainable and successful network.

RENEB e.V.
2nd General Assembly
Stockholm University
14 October 2019
Sweden

RENEB working groups

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14-18 October 2019 - ERPW 2019, Stockholm, Sweden
European Radiation Protection Week (ERPW) meeting series initiated in 2016 in Oxford, UK, build on and extends the MELODI workshops and aims at integrating the European research on radiation protection demonstrated by the CONCERT European Joint Programme. The ERPW meetings are open to scientists and decision makers participating in radiation protection research globally. Following the ERPW 2016 in Oxford, meetings were held in 2017 in Paris and in 2018 in Rovinj. The ERPW 2019 was jointly organised by radiation protection researchers from the Nordic countries in collaboration with the European platforms and programs and hosted by Stockholm University. The 2020 meeting will take place in Lisbon.

13-15 November 2019 - Aix en Provence, France
The Final event of the TERRITORIES project focused at Stakeholder engagement for a better management of uncertainty in risk assessment and decision-making processes, including post-accident remediation strategies. The event aimed at

- sharing the findings from the TERRITORIES project, including technical guidance published at https://territories.eu/publications
- collecting feedback on two final deliverables from the project: 1) Guidance for management of existing exposure situations due to nuclear accident contamination; 2) Guidance for management of existing exposure situations due to NORM contamination

View the presentations here.
Education, Training, Exercise

◆ 22-24 October 2019 – Hainan, People’s Republic of China

2019 National Training for medical Preparedness and Response to Nuclear or Radiological Emergency, Hainan, China
By Cuiping LEI, Long YUAN, CCMRRE, P.R. China

Chinese Center for Medical Response to Radiation Emergency (CCMRRE) organized a national train course on medical preparedness and response to nuclear or radiological emergency on 22-24, October, 2019, Hainan Province, China. 86 staffs from 31 provinces participated in the training course.

Dr. Zhanat Carr from WHO assisted in development of the training course content and delivered three lectures on WHO’s role in supporting global radiological and nuclear emergency preparedness, WHO Guidelines on Iodine Thyroid Blocking following a nuclear emergency, and on Risk communication and management psychosocial consequences of nuclear accidents.

The main content of the training course included:
- basic knowledge on radiation protection,
- medical preparedness and response in hospital during nuclear or radiological emergency
- medical management and follow-up of overexposed victims during nuclear or radiological emergency
- clinical treatment of radiation injuries and management of internal and external contamination.

The national training has continued for fifteen years and was usually held twice a year. The training is aimed at professional personnel in radiation health protection institutions and medical doctors and nurses in hospitals from all provinces of China to improve their abilities to respond to nuclear or radiological emergency. In the future, more practical operations, desktop exercises and group discussion will be added to the training course.

◆ KIRAMS YouTube channel
By Sohyeon Kim, KIRAMS, Seoul, Korea
Is now featuring the playlist with the video recordings of the speakers at the 3rd Asian REMPAN Workshop on Radiation Emergency Medical Response. The Workshop focused on the methods of assessment, monitoring, and management of internal contamination with radionuclides as a result of an accidental exposure.

◆ CDC Launched Radiation Emergency Preparedness Videos
By Robert Whitcomb, CDC, Atlanta, USA

The CDC has launched the videos Success Stories in Radiation Emergency Preparedness as examples of how state and local partners have used CDC resources to increase their radiation emergency preparedness.

The videos provide inspiration for how those resources can help support preparedness efforts on the community level.

◆ New educational video from REAC/TS
By Dr Carol Iddins - Radiation Emergency Assistance Center/Training Site (REAC/TS, USA)

REAC/TS recently completed production of a video designed to demonstrate appropriate patient transport of a radiologically contaminated patient. Additionally, the video illustrates some simple techniques to mitigate the spread of the contamination to healthcare providers, facilities, and equipment.

The video is located on the REAC/TS website and may be accessed: https://orise.orau.gov/reacts/resources/index.html.

This video was made possible by a grant from the Oak Ridge Institute for Science and Education (ORISE) Virtual Institute. Please feel free to post the link on your website, share with your listserv, and share with your teams, and please share with your air and ground ambulance crews.
Education, Training, Exercise

**International Medical Management of Radiation Injuries (iMed) training programme**

By Dr Carol Iddins - Radiation Emergency Assistance Center/Training Site

REAC/TS staff delivered a training course on International Medical Management of Radiation Injuries (I-MED):

- **on July 8-12, 2019 in Hradec Kralove, the Czech Republic.** The course was sponsored by the U.S. Department of Energy/National Nuclear Security Administration’s Office of Counterterrorism and Counterproliferation’s Office of Nuclear Incident Policy and Cooperation and the NATO Center of Excellence for Military Medicine, and was hosted by the Czech Armed Forces Military Medical Service. The course included lectures and hands-on demonstrations/skills stations, with a culminating exercise that involved teams caring for a simulated radiologically contaminated patient from the pre-hospital setting through the emergency department. Participants in the course were comprised of physicians, nurses, paramedics, pharmacists, and cytogenetic biodosimetry technicians from the Czech Republic, Estonia, Poland, and the United Kingdom.

- **on August 26-30, 2019 in Rabat, Morocco.** The course was sponsored by the U.S. Department of Energy/National Nuclear Security Administration’s Office of Counterterrorism and Counterproliferation’s Office of Nuclear Incident Policy and Cooperation, the European Union CBRN Centres of Excellence (CoE), and the Defense Threat Reduction Agency (DTRA). The 4.5-day course included lectures and hands-on demonstrations/skills stations, with a culminating exercise that involved teams caring for a simulated radiologically contaminated patient from the pre-hospital setting through the emergency department. The EU CBRN CoE Initiative is a worldwide program of 56 partner countries which aims at mitigating risks related to CBRN materials and promoting the establishment of a culture of security. This course hosted 25 physicians and nurses from across Morocco.

Photo: participants of the I-MED training course in Rabat, Morocco. 30 Aug 2019
Coming, Going

◆ New WHO Collaborating Center for Radiation and Health in People’s Republic of China

**Head:** Dr. Quan-Fu Sun – Director, National Institute for Radiation Protection Chinese Center for Disease Control, P.R. China  
**Period of Designation:** 2019-2023  
**Terms of Reference:**  
- To assist WHO for strengthening preparedness and response to radiation emergencies  
- To assist WHO in the assessment of radiation exposure by biological dosimetry  
- To assist WHO in the implementation of the Bonn Call for Action to improve radiation safety and quality in medical use of radiation  
- To assist WHO in the implementation of the WHO radon project including risk assessment, risk management and risk communication.  
- To assist WHO on activities on assessment, management and communication of health risk related to radioactivity in food and drinking water

◆ New REMPAN Liaison Institute in Lithuania

**By Julius Ziliukas, Director of Department of Expertise and Exposure Monitoring, Radiation Protection Centre, MoH**

The Radiation Protection Centre (RSC) is an institution under the Ministry of Health of the Republic of Lithuania involved in the formation and implementation of state policy on radiation protection (except for nuclear energy applications). RSC mission is to ensure the radiation protection of public and the environment against the harmful effects of ionizing radiation through regulatory control of human and the environment exposure to ionizing radiation. This covers regulation of physical protection of sources, the radiation protection assessments, licensing, supervision of compliance with requirements of the legislation on radiation and physical protection, training in radiation protection, radiological monitoring, prevention and response to radiological accidents. RSC is responsible institution to perform investigations of nuclear or radiological emergencies, forecast the consequences, provide technical advice on managing and mitigation. RSC organizes, coordinates and conducts radiological measurements, assesses the results of radiological analysis, gives recommendations on protection against harmful effects of ionizing radiation for public, emergency workers and environment.

◆ Since February 2018, **Prof. Shinji Tokonami** became a new director of Institute of Radiation Emergency Medicine Hirosaki University, Aomori, Japan. His appointment at Hirosaki University is a professor of Department of Radiation Physics and the director of IREM/HU

◆ Dr. Andrea DiCarlo-Cohen has been selected as Director of the Radiation and Nuclear Countermeasures Program (RNCP) within the National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH).

In her new position, Andrea will bring to bear her 29 years of experience in research and development, as well as expertise in scientific program administration. Andrea has spent the past 15 years providing exemplary contributions to the RNCP as a Program Officer, both in scientific direction as well as fiscal management, and will continue the pursuit of licensure for radiation/nuclear medical countermeasures and improved understanding of the mechanisms of radiation injury.

Dr. Rita Schneider retired!

The REMPAN focal point at the WHO Collaborating Center at the University Hospital Wuerzburg, Germany, Rita Schneider has retired as of the end 2019. We thank Dr. Schneider for her dedicated service and outstanding support she provided to WHO REMPAN-related work over more than a decade. Notably, her solid expertise, her excellent scientific knowledge of the radiation emergency medicine and her meticulous organization skills were much appreciated. Thanks to Dr. Schneider, we enjoyed twenty issues of the REMPAN e-Newsletters, with the current issue being the last one she helped us to produce. We wish Rita an enjoyable new chapter in her life and we hope she will remain connected to the REMPAN community, because once a REMPAN member – REMPAN member for life.
News – From Network Members

◆ The FIRST StTARS workshop introduced Software tools for Triage of the Acute Radiation Syndrome (ARS)

By Prof. Matthias Port, Oberstarzt und Institutsleiter - Institut für Radiobiologie der Bundeswehr in Verbindung mit der Universität Ulm

A NATO Research Task Group organized the FIRST StTARS workshop in October 2019 in Paris which introduced “Software tools for Triage of the Acute Radiation Syndrome (ARS)”. These software tools were developed by a scientific group within NATO. The software allows for an integrated estimation of dose (BAT, WinFRAT) and for prediction of ARS severity grade based on changes in blood cell counts (H-module) in the first days after an exposure to ionizing radiation. The workshop was held for civilian or military personnel with a medical background or those dealing with medical decision-making in the field of radiological or nuclear threats. The workshop provided an introduction into the software tools and included a challenge based on some 200 cases to be categorized for hospitalization or deciding about severity of the ARS and for performing radiation dose estimations.

Participants of the FIRST StTARS workshop provided extremely positive feedback. This forced us to offer a SECOND workshop which will take place at REAC/TS, Oak Ridge TN, USA probably in Sept/Oct 2020. Just check the internet (StTARS) or email us (michaelabend@bundeswehr.org).

Photo: Participants of the First StTARS workshop in October 2019 in Paris ◆

News – From Network Members

◆ Training course on Radiation Protection In Radiotherapy in Moscow WHO Collaborating Centre

By Dr. A. Bushmanov, State Research Center - Burnasyan Federal Medical Biophysical Center (FMBC) of Federal Medical Biological Agency

From 11 to 15 November 2019 WHO Collaborating Centre SRC - FMBC of Russia conducted a regional training course on Radiation Protection and Safety and Accident Prevention in Radiotherapy under the support of the IAEA.

There were 16 Russian-speaking listeners from Kyrgyzstan, Armenia, the Republic of Belarus, Azerbaijan, Uzbekistan, Tajikistan, Turkmenistan, Kazakhstan, Latvia, Serbia and listeners from Russia.

The main goal of this course is to increase the level of knowledge and practical skills of medical physicists working in radiotherapy in the field of safe provision of high-quality radiotherapy services, ensuring radiation protection of patients and staff, prevention and elimination of consequences of incidents and accidents in radiotherapy departments. The course also covered all sorts of related areas of Radiation Oncology, such as the description of the linear-quadratic model, tasks for calculating the biologically effective dose and so on.

FMBC is planning to conduct such training courses annually for radiotherapists and medical physics.

Photo: Participants of the FMBC training course – Moscow, 15 Nov 2019.
News – From Network Members

By Dr Judy Bader, on behalf of the US HHS/ASPR and NIH/NLM, USA

We are pleased to announce updates to REMM web site (Radiation Emergency Medical Management). This update, the first since March 2019, again includes the option to download REMM to your desktop.

REMM now has more than 456 web pages. We have also added illustrations and videos to many REMM pages and to the REMM Multimedia Library.

The list of What’s New on REMM for December 2019 below includes just a few of the highlights we made to REMM:

- Major update to the REMM burn page, written in collaboration with physician leaders of the American Burn Association
- Many updates to the REMM Multimedia Library shown on the home page
- Link to 10 newly published official videos which are teaching companions for the US interagency monograph "Radiological Dispersal Device (RDD) Response Guidance, Planning for the first 100 Minutes"
- Updates to REMM’s list of books, handbooks and pamphlets about radiation incidents
- Updates to illustrations about radiation incident timelines
- New links to guidance documents from WHO and Public Health England on drinking water and food safety were added to the Monitoring Radionuclides in Drinking Water and Food page.
- Many updates to the REMM Software Tools page
- Updated links to the many DOE/ORISE/REAC/TS resources
  - These include a new video on “Ground and Air Medical Transport of Radiologically Contaminated Patients” which was also added to the Transportation Incidents Involving Radiation page and the REMM Multimedia Library
- Updates to the REMM Myeloid Cytokine References
- Updates to the REMM Resilience and Recovery page
- Updates to the REMM Training page with updated links to available courses
- On the REMM page about Screening People for Contamination, there is now a link to a new document about Guidance for Traveler Screening at Ports of Entry Following an International Radiological Incident (CDC/NARR)
- Link to the new Implementation Guidance for Emergency Response Dosimetry NCRP Commentary No. 28 which is a companion to NCRP Report No. 179
- Updates to REMM Radiation Detection and Survey Devices page
- Updates to the Public Information Officers page
- Updates to information about the new category of radiation incident responder: the Radiological Operations Support Specialist (ROSS)
- Updated links on the REMM page about pediatric patient management
- Updates to references on the REMM transfusion guidelines page
- Updates to the Biodosimetry References list
- Updates to references on the Summary about ARS page and ARS medical management references

Sign up for our email updates to be notified about REMM news and updates. With thanks for your support, The REMM Team.
The Chernobyl Legacy: Lost sources of irradiation
By Prof. Dimitry Bazyka and Anatoly Chumak, National Research Center for Radiation Medicine, Ukraine

During the routine radiation monitoring on October 28, 2019, an increased level of radiation was detected in the building of the physical chemistry laboratory of the Central Geophysical Observatory of the State Service of Emergency of Ukraine. The building located at the site where used to be located the Expedition of the State Committee for Hydrometeorology of the USSR back in 1986. Two sealed highly active cesium sources were located at the site where exposure rates were detected as 1500 mR/h and 1700 mR/h in the vicinity of sources. These sources were used in 1986 for calibration of the helicopter-based aero-mapping of gamma fields over the territories contaminated due to the Chornobyl accident, and remained on site. During the construction of a new building the sources were accidentally incorporated into the foundation at the bottom part of the wall. Decontamination was performed by the staff of emergency service. One of the sources is shown at the figure:

Four employees of the establishment were examined for a potential exposure: three males and one female. Duration of exposure was from 3 to 13 years. Working places were investigated before extraction of sources. The dose rate of external exposure at workplaces of the above-mentioned persons was 1.2 µSv/h. The employees were hospitalized on the same day at the REMPAN center of the National Research Center for Radiation Medicine. None of clinical symptoms of deterministic effects of radiation exposure were diagnosed. Incorporation of radioactive elements during the examination with the whole body counter was not detected either. Dose of external radiation was estimated to be within 10 mSv/year. Blood tests, biochemistry, immune function and cytogenetics tests were found to be in a normal range. Patients are subjects to follow-up at the RCRM out-patient hospital.

◆ PHE’s Liz Ainsbury received a prestigious award!

At ICRP2019 in November in Adelaide, Liz Ainsbury from PHE was awarded the Bo Lindell Medal for Promotion of Radiation Protection. Liz is a Principal Radiation Protection Scientist and Cytogenetics Group Leader at PHE’s Centre for Radiation, Chemical and Environmental Hazards in Oxford, UK. The award was given on the basis of Liz’s interdisciplinary research across a large number of different fields but each supporting development of sufficient radiation protection legislation and guidelines. The award was presented to Liz by ICRP chair Claire Cousins and was followed by a keynote address by Liz on her recent research collaborations and findings including in support of WHO supported biodosimetry networking.

New Publications

◆ by Michio Murakami, Fukushima Medical University (Japan)
Shuhei Nomura, Michio Murakami, Wataru Naito, Tetsuo Yasutaka, Toyoki Sawano and Masaharu Tsubokura published a paper: Low dose of external exposure among returnees to former evacuation areas: a cross-sectional all-municipality joint study following the 2011 Fukushima Daiichi nuclear power plant incident in the Journal of Radiological Protection, on 06 December 2019, 40, 1-18, 2019. This study was designed to provide the latest dose assessments for external exposure among returnees to former no-go zones in 10 municipalities based on an individual dose monitoring method. The mean of the annual dose in 2019 (including natural background doses [i.e., 0.54 mSv]) was 0.93 (95% uncertainty interval 0.53–1.76) mSv.

◆ by Osama Kurihara, QST (Japan)
A manuscript Reassessment of Internal Thyroid Doses to 1,080 Children Examined in a Screening Survey after the 2011 Fukushima Nuclear Disaster was published in Health Physics journal in Jan. 2020 by E.Kim, K.Yajima, S.Hashimoto, K.Tani, Y.Igarashi, T.Iimoto, N.Ishigure, H.Tatsuzaki, M.Akashi, and O. Kurihara. Paper reassessed thyroid doses to 1,080 subjects aged ≤15 y old using new age-specific conversion factors to determine 131I thyroid contents from net signals of the devices used, with consideration for the possible uncertainty related to the measurements. The results demonstrated that thyroid equivalent doses to the subjects were <30 mSv (excluding outliers), dose distributions of each age group from three municipalities and those of subjects from Minamisoma City and Fukushima City.
New Publications

- WHO REMPAN members “Yellow Pages” directory 2019 edition is now available online!
  Thanks to all of the network members for active support in updating the directory.
  To order your hard copy, please contact Z. Carr

- Pan-American Health Organization (PAHO) published Health Sector Multi-Hazard Response Framework (MRF) which is designed mainly for health sector authorities and managers responsible for emergency and disaster risk management, guiding them in the process of updating or developing response planning. This ranges from describing the operational model to implementing emergency functions involving various actors, identifying preparedness tools in the health sector, and developing standardized operating procedures, organizational analysis, and specific contingency plans. Implementation of this framework will provide countries with adequate response planning based on a multi-hazard approach. This will lead to better use of available resources and greater flexibility to deal with any type of event.

Between 1970 and 2018, the Region of the Americas experienced over 4,500 disasters that killed 569,184 people and injured more than 3 million people. Additionally, emergencies and disasters of any kind can cause multimillion-dollar economic losses and can significantly undermine the performance of health systems. Today, more than ever, it is necessary for countries to improve their preparedness and response to health emergencies and disasters.

- Chinese and Russian language translations of the WHO Guideline on Iodine Thyroid Blocking in Case of a Nuclear Emergency are now available online.

New Publications

- Proceedings of the Symposium The Future of Low Dose Radiation Research in the United States are now published.
  The Future of Low Dose Radiation Research in the United States: Proceedings of a Symposium, now available for free download from the National Academies Press, summarizes the presentations and discussions of the May 8-9, 2019 Gilbert W. Beebe Symposium, hosted by the National Academies of Sciences, Engineering, and Medicine.
  The Symposium focused on the future of low dose radiation research and the need for a long-term strategy to guide low dose radiation research in the United States.

  Download link
Upcoming Training Courses and Events

- **REAC/T S Training Courses on Radiation Emergency Medicine:**
  - February 4-7, 2020 [Register](#)
  - March 10-13, 2020 [Register](#)
  - April 21-24, 2020 [Register](#)
  - June 9-12, 2020 [Register](#)
  - August 11-14, 2020 [Register](#)

- **WHO Online Training Courses:**
  - [Risk Communication in Health Emergencies](#)
  - [Simulation Exercise Management: Introduction](#)

- **Other Training Courses:**
  - **3-6 March 2020 – Chiba, Japan**
    The QST training course on radiation emergency medicine in Asia 2020 - Center for Advanced Radiation Emergency Medicine, National Institutes for Quantum and Radiological Science and Technology (QST)
  - **July 13 - August 7, 2020, Rockville, USA**
    [Principles and Practice of Cancer Prevention and Control Course](#)

- **Other Events:**
  - **18-19 February 2020 – Tokyo, Japan**
    NEA/OECD Workshop Preparedness for post-accident recovery process: lessons from experience
  - **18-20 March 2020 – Munich, Germany**
    BfS-NEA-WHO workshop [Toward a better integration of Non-Radiological Public Health Aspects of Protection Strategies during Radiation Emergency Planning, Response and Recovery](#)
  - **11-14 May 2020 – Seoul, Republic of Korea**
    The 15th Congress of the International Radiation Protection Association
  - **12-14 May – Seoul, Republic of Korea**
    The 16th WHO REMPAN Coordination meeting – by invitation only.
  - **27-29 May 2020, Barcelona, Spain**
    The 6th NERIS Workshop and General Assembly
  - **03-07 November 2020 – Okayama, Japan**
    The EPR BioDose 2020 international conference and WHO BioDoseNet satellite meeting

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Disclosure

The REMPAN e-NEWSLETTER is produced 2 times a year and circulated by WHO Secretariat to the network members to provide information about latest news on the network’s activities, developments in radiation emergency preparedness and management.

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