Welcome to the second edition of “Quality News”! We are encouraged by the interest expressed in the inaugural publication. Together with the Inter-American College of Radiology, a Spanish version was prepared and distributed earlier this year. With your support, the content in this edition has doubled!

Our plan is to bring to you two editions each year and serve as a multipartite communication platform. The aims are to **promote awareness, share experience, encourage participation and facilitate improvement** in radiological quality and safety actions. These joint efforts improve the quality of care, radiation safety, and more appropriate use of procedures. The importance of **teamwork** is stressed in many of the articles to follow.

The International Radiology Quality Network (IRQN) has successfully integrated into the International Society of Radiology (ISR) structure. The International Commission on Radiological Quality and Safety (ICRQS) was formed as a Standing Committee of the ISR. The Commission will handle radiological safety and quality matters on behalf of the Society and will continue with the work already established by the Network, including “Quality News”.

The sustainability of “Quality News” depends on your on-going interest and support. A number of ideas are being explored. In this edition, a resources section is added to provide a link to open-access recommendations and improvement tools. Please share your list of resources with our readers!

The Commission thanks the contributors for providing articles. It looks forward to receiving more articles in future editions and working with all stakeholders in actions to improve radiological quality and safety. Please direct your queries or suggestions on “Quality News” or the Commission to: lawrence.lau@pobox.com.

Lawrence Lau
Editor, “Quality News”
Chair, International Commission on Radiological Quality and Safety
W: http://www.isradiology.org/isrquality.php
QUALITY NEWS

Highlights on Safety and Quality from ISRRT

As President of the International Society of Radiographers and Radiological Technologists (ISRRT) and on behalf of the Board, I welcome and fully support this bi-annual publication. “Quality News” provides its readers with learning and networking experiences, which will enhance their knowledge and improve patient care and safety. The ISRRT has been an active supporter of the International Radiology Quality Network (IRQN) since its inception and looks forward to continuing collaboration with the new Commission, as part of the International Society of Radiology.

Dr. Fozy Peer, President, ISRRT

During the recent World Congress of the International Society of Radiographers and Radiological Technologists (ISRRT) held in Helsinki, Dr. Michael Ward installed Dr. Fozy Peer (photo above) from Durban South Africa as the Society’s next President. One of Dr. Peer’s main goals is to strengthen collaboration with other international organizations and she will take every opportunity to participate in global health projects to ensure the voice of the technologists is represented.

The ISRRT has had a long association with the IRQN and in particular with Dr. Lawrence Lau. Dr. Peer believes the collaboration with IRQN contributes to global efforts towards improvement in patient care.

An example is the recent completion of a pilot exercise of the WHO-IRQN Referral Guidelines Project. The ISRRT provided feedback to the draft publication “Referral Guidelines for Diagnostic Imaging”. The project, pilot exercise and publication were reported to ISRRT members in the May newsletter and during the World Congress in June. Members will be updated as pilot testing results are available.

The stakeholders are working on a guidance tool to facilitate the implementation of the new International Basic Safety Standards (BSS). “Radiation Protection and Safety in Medical Uses of Ionizing Radiation” will provide recommendations as to how ionizing radiation should be used in medicine within the framework of the new BSS, covering radiotherapy, diagnostic and interventional radiology and nuclear medicine, which were previously addressed by the IAEA Safety Report Series No. 38, 39 and 40 respectively.

Donna Newman, ISRRT Director of Professional Practice, contributed to the nuclear medicine section and Cynthia Cowling, past ISRRT Director of Education, contributed to the revision of diagnostic and imaging-guided interventional procedures. Radiation protection principles; stakeholder roles and responsibilities; and education, training, qualification and competences of practitioners and health professionals are discussed. Guidance is provided on how to meet the radiation protection requirements for medical exposure, occupational exposure and public exposure; and applications in hospitals, medical centers, health clinics, specialist clinics and dental practices.

The ISRRT looks forward to contributing to the finalization of this important guidance tool.

From L to R: O. Holmberg, J. Le Heron, M. Perez, and D. Newman.

(Courtesy of Donna Newman RT (R) CNMT, Director of Professional Practice ISRRT)

FORTHCOMING CONFERENCES

- Radiological Society of North America 2014 | November 30 - December 5 | Chicago | [http://rsna.org/Annual_Meeting.aspx](http://rsna.org/Annual_Meeting.aspx)
ESR EuroSafe Imaging – Together for Patient Safety

In order to achieve these ambitious goals a EuroSafe Imaging Strategy and Call for Action will be launched shortly which supports the implementation of the ‘Bonn Call for Action’ to improve radiation protection in medicine issued by the International Atomic Energy Agency (IAEA) and the World Health Organization (WHO) in 2012.

The overall mission of the EuroSafe Imaging campaign – including radiological subspecialty societies, related medical professions, patient and industry representatives – is to deliver better quality and safety in the use of radiology for patients across Europe.

If you would like to join us in this mission and support the EuroSafe Imaging campaign, please sign up to become a Friend of EuroSafe Imaging on www.eurosafeimaging.org.

(Bonight courtesy of Professor Guy Frija, Director of EuroSafe Imaging and ESR Past-President)

Bonn Call-for-Action Update

This topic was previously reported and the actions outlined in the last edition of “Quality News”. The aims of the Bonn Call-for-Action are to a) strengthen the radiation protection of patients and health workers overall; b) attain the highest benefit with the least possible risk to all patients by the safe and appropriate use of ionizing radiation in medicine; c) aid the full integration of radiation protection into health care systems; d) improve the benefit / risk dialogue with patients and the public; and e) enhance the safety and quality of radiological procedures in medicine.

Radiation safety is a key component of Good Medical Practice and contributes to health system strengthening. The Bonn Call-for-Action includes 10 main actions and related sub-actions and provides guidance towards ongoing global efforts to improve radiological quality and safety and the strengthening of radiation protection in medicine over the next decade. The IAEA WHO Joint Position Statement is now available as a brochure from: http://www.who.int/ionizing_radiation/about/timed_exposure/en/index3.html

All stakeholders are encouraged to respond to this international call by joining efforts at global, regional, national and local levels. This invitation includes not only to radiation safety regulatory bodies and health authorities but also health care providers, health policy and decision makers, scientists, manufacturers, vendors, patients, and general public. As a leading stakeholder, you can assist by: sharing the link with your colleagues, adding the link to your websites and / or directly uploading the document, printing and disseminating the brochure or in any other ways as part of a collective effort to strengthen advocacy and raise awareness of this important topic. Implementation of the Bonn Call-for-Action contributes to the implementation of the new BSS in medical settings.

(Courtesy of Dr. Miniam N. Mikhail Diagnostic Radiologist, World Health Organization)
QUALITY NEWS

Collaboration to Strengthen Radiation Safety Regulation in Africa

The Forum of Nuclear Regulatory Bodies in Africa (FNRBA) is a network created to strengthen radiation safety in Africa. The objective is to facilitate experience sharing, mutual support, collaboration, and resource optimization; and to strengthen national regulatory infrastructure in radiation protection and radiation safety.

The FNRBA members work in thematic groups to better define their needs, issues, strengths and weaknesses, and to develop solutions in cooperation with other stakeholders, including IAEA and WHO. Networking is an effective means to assist countries to meet the requirements of the new BSS.

The thematic group on medical exposure used questionnaires to evaluate the independence of national regulatory authorities and the effectiveness of their policies. The comprehensive questionnaires examined the justification of procedures; optimization measures and dose minimization; use of QA tools such as DRLs; equipment calibration, maintenance and QA program; and qualification, training and continuing professional development of professionals, including medical physicists and radiation protection officers etc.

Based on the findings, member countries were grouped under 5 classes: excellent, satisfactory, insufficient needing improvement, seriously insufficient, completely insufficient or inexistent. Countries in Class 1 and Class 2 can provide assistance to those in Class 4 and Class 5. Centers of Excellence can be established in the Class 1 countries to train the trainers and dispatch experts to others to strengthen their safety programs and develop a safety culture.

The stakeholders from 33 member countries meet regularly to share experience and lessons learnt, facilitated by continental professional bodies. The sharing of best practice covers the different aspects of radiation protection, radiotherapy, nuclear medicine and medical physics. At this stage, there are medical physics societies in 13 African countries.

The purpose of the Arab Network of Nuclear Regulators (ANNuR) is to foster enhancement, strengthening and harmonization of the radiation protection, nuclear safety and security regulatory infrastructure and framework among the members of ANNuR; and to provide mechanisms for the ANNuR to be an effective and efficient internationally recognized forum for the exchange of regulatory experiences and practices among the radiation and nuclear regulatory bodies in Arab countries. Facilitated by the IAEA and Arab Atomic Energy Agency (AAEA), the 22 national regulatory bodies share experience and expertise through meetings, training courses and workshops aiming to strengthen infrastructure and optimize resource utilization.


(Courtesy of Professor Azza Hammou, Director, Tunisian National Radiation Protection Centre and Founding Member of FNRBA and ANNuR)

Dr. Hammou (L2) with other delegates attending a FNRBA meeting.

Examples of Radiological Quality Activities in Korea

The Korean Society of Radiology (KSR) is an active and leading participant in regional and international actions towards the improvement of quality and safety in medical imaging.

On 8th October 2014, the KSR will host an Asia-Pacific Symposium in Seoul in collaboration with WHO and IAEA entitled “Evidence and Values in Medical Imaging” as a part of the Korean Congress of Radiology 2014 (http://kcr4u.org/). The symposium focuses on practical evidence and patient values. The topics include: justification in medical imaging, patient-centered approach for imaging and future perspectives for justification of medical exposure in the Asia-Pacific region. These efforts to integrate evidence with clinical expertise and patient value contribute to the improvement of quality and safety in medical imaging.

Dr. Lim Toe-Hwan, a Professor at University of Ulsan College of Medicine and President of KSR, was appointed President and Chairman of the Korean National Evidence-based Healthcare Collaborating Agency (NECA), in October 2013. The NECA is a government agency for Health Technology Assessment (HTA), which is responsible for the evaluation of health technologies based on safety, effectiveness and economic values. Professor Lim has contributed to the adoption of the new Health Technology Assessment (n-HTA) in Korea since 2007.

More information about the NECA is available from: http://www.neca.re.kr/eng/

(Courtesy of Professor Lim Toe-Hwan, President of KSR and President and Chairman of NECA)
QUALITY NEWS

WHO – IRQN Referral Guidelines Project –

Pilot Exercise

With over 30 organizations, health authorities, regulatory bodies, professional societies, and healthcare organizations, the World Health Organization (WHO) and the International Radiology Quality Network (IRQN) started a global Referral Guidelines Project in 2010 and have completed a pilot exercise earlier this year. The project aims to improve the availability and use of guidelines worldwide.

A set of pilot clinical referral guidelines for medical imaging (guidelines) was prepared following a review of the existing published guidelines and identification of common recommendations. The reviewed guidelines included the ACR Appropriateness Criteria; the RCR iRefer; the CAR Referral Guidelines; and the WA Diagnostic Imaging Pathways.

The exercise team distributed the pilot guidelines to and collected feedback from the participants to identify the: availability, awareness, and use of referral guidelines; Internet access; preferred guideline format and media; gaps; future topics and performance indicators. The 157 participants included 82 imaging and 75 non-imaging practitioners from 41 facilities and 17 countries with diversified settings located in the six WHO regions.

The preliminary findings indicated that guidelines are available in 8 of 17 countries and 4 of the 8 countries with guidelines have issues when preparing updates. Stakeholder awareness and use of guidelines are low. The access to Internet in the pilot sites is variable. There is a slightly higher user preference for tabulated than flowchart format. A web-based publication is the most preferred media followed by print.

Use of evidence-based clinical referral guidelines supports good medicine, procedure justification, radiation protection, and the implementation of the new BSS and Bonn Call-for-Action priorities. The pilot results confirmed the findings published in a recent European survey [1] and provided additional observations. These results contribute to the knowledge base towards a more sustainable development and use of evidence-based referral guidelines in different settings.


WHO – ICRQS Referral Guidelines Project – Referrer Training

The WHO – IRQN Referral Guidelines Project is on going and is now being conducted by WHO and ICRQS following the migration of IRQN into the ISR. Forming part of this project and a logical continuation is to provide practitioner training. The aim is to develop educational material to improve practitioner awareness and use of clinical referral guidelines for medical imaging in daily practice. It is desirable to have the teaching material piloted, feedback collected and contents improved if required before wider use in different regions.

The ISR, as a NGO in official relations with the WHO and the Dubai Health Authority (DHA) in a pilot training exercise. The training is intended for referrers and future trainers. It will be conducted as a side-event during the forthcoming International Congress of Radiology in Dubai (refer to conference banner above). Close involvement by and active participation of local stakeholders are important to ensure local ownership of training and to build a sustainable infrastructure. This is consistent with a “locally-championed and globally-supported” implementation model.
Approach to Quality and Safety Improvement

Teamwork is required in facilities, organizations, and healthcare systems because the development and use of recommendations and guidance tools to improve radiological quality and safety is a team event. For example, in the case of referral guidelines, individual experts contribute to guideline development, organizations and agencies advocate for their adoption by authorities and facilities and use by practitioners. Each step requires the input from a stakeholder who plays a unique role.

Along the patient journey, justification and optimization are the pillars of radiation protection and are equally applicable to other imaging modalities. Incident minimization reduces errors, incidents and adverse events before, during and after a procedure. We support a holistic approach to tackle these issues and develop solutions. For example, if a procedure were not optimized even though justified, the patient would receive unnecessary exposure. By listing the issues, improvement opportunities are identified along the patient journey. Naturally, there are many opportunities and it is not possible to handle all these at the same time. However, it is useful to be aware of these issues for future work plans. Our approach must be comprehensive; otherwise the weakest link would jeopardize all other efforts.

A common platform across disciplines and sectors would facilitate stakeholder engagement and collaboration in improvement actions. The ISR does this by forming working groups within the ICRQS focusing in justification, optimization and incident reduction. Teamwork saves resources and minimizes duplication.

There are many excellent existing recommendations and guidance tools to improve patient care and safety. The aim is not to duplicate the efforts but to identify barriers and develop solutions to improve their use in daily practice.

Awareness and Implementation of the Basic Safety Standards

The International Radiation Basic Safety Standards (BSS), co-sponsored by 8 international organizations (European Commission, UN Food and Agricultural Organization, International Atomic Energy Agency, International Labor Organization, OECD Nuclear Energy Agency, Pan American Health Organization, UN Environment Programme, and World Health Organization), is used worldwide as the basis for radiation protection legislation and regulations. It sets out the radiation safety requirements for workers, members of the public and patients and covers medical and non-medical use of radiation. The final edition has just been released and is available from: http://www-pub.iaea.org/books/IAEABooks/8930/Radiation-Protection-and-Safety-of-Radiation-Sources-International-Basic-Safety-Standards

The provision of radiological procedures involves a multidisciplinary team and several stakeholders share the responsibilities for protection and safety in medical exposures. Procedure justification is to be shared between the referrer and the radiological medical practitioner, who is also responsible for optimization of protection, aided by the medical radiation technologist who chooses the appropriate patient techniques, and by the medical physicist, who calibrates sources, assesses image quality and patient dose, and is responsible for the physical aspects of the quality assurance program, including equipment acceptance testing and commissioning. They all participate in preventing, detecting and assessing unintended and accidental medical exposures.

The next task is to support the implementation of BSS in different settings, including healthcare. However, the use of BSS in radiology facilities is voluntary. Effective implementation requires practitioner awareness and training, infrastructure building and policy adoption. The ISR is collaborating with the IAEA and WHO to improve radiologist awareness and uptake of BSS in radiology practices. A 2 stages approach will be used firstly, by raising awareness in radiology conferences and secondly by conducting workshops with interested regional and national organizations to facilitate implementation. The practical implementation of the BSS will improve radiation safety and quality of practice in radiology.
QUALITY NEWS

Incident Reduction

Human errors occur before, during and after a procedure. An incident in isolation would not necessarily result in harm, but deficiencies in the barriers could lead to actual harm. The aim is to identify potential risks, understand the contributing factors and develop and use controls and corrective actions.

Patient safety by incident reduction is a team responsibility, because the development and use of recommendations, risk controls and guidance tools to reduce incidents is a team event. Teams of experts analyze and classify incidents, develop risk controls and guidance tools; organizations and agencies advocate for their adoption by the authorities and facilities, and their use by the practitioners.

There are many different sources to identify potential errors, incidents, and adverse events, within and outside a facility. Incident reporting is one of these means. An incident reporting and learning system is a quality improvement and safety tool used in high-risk sectors. It is an organized and system-based process used to collect incidents, analyze data and disseminate recommendations.

For practitioners to embrace reporting, the system must be well-constructed and reporting encouraged, i.e. reporting is safe for the reporter; reporting leads to a constructive response; expertise and financial resources are available to ensure meaningful incident analysis; and there is timely dissemination of system-oriented recommendations and guidance tools.

Incident reporting systems for medical imaging vary in scope, stage of development, support and participation. The Australian Patient Safety Foundation manages the RANZCR Radiology Events Register. Radiology Events and Discrepancy is restricted to RCR members and fellows. The IAEA SAFRAD is a reporting system for over-exposures in fluoroscopy. ACR GRID collects and aggregates data such as turnaround times and incident rates and uses these to establish benchmarks.

Having incidents classified and by using standardized terminology facilitate data analysis and archive; and dissemination of recommendations, controls and guidance tools. The WHO has developed a conceptual framework that is being developed into a classification system. Standardized terminology enables computer-assisted analysis. This is important when analyzing large volumes of data and detecting trends. The WHO launched a “Minimal Information Model” for Patient Safety Incidents or MIM in 2014. This inter-cluster initiative covers other medical fields including radiation safety. MIM can potentially serve as the basis of a more comprehensive reporting system.

More collaborative actions focusing on incident reduction in medical imaging are likely in the coming years. When the timing is right, the stakeholders would decide to harmonize incident reporting and learning systems to improve access and minimize duplication. The ICRQS looks forward to participating in actions to improve patient safety, incident reporting and the use of risk reduction measures.

The third biennial Australasian Conference on Error in Medical Imaging will be held in Adelaide, South Australia from November 21-22, 2014. The theme is ‘Making imaging safer’ through information technology, informatics, human factors and systems approaches, and quality improvement.

Information about ACEMI is available from: http://www.ausconfererroronmedicalimaging.com.au

RESOURCES CORNER: REFERENCES & TOOLS

The resources underpinning improvement actions are recommendations and guidance tools. A small collection is shown below. Please forward links to open access resources to us for these to be shared & used by our readers. Thank you!

- WHO Global Initiative on Radiation Safety in Health Care Settings http://www.who.int/ionizing_radiation/about/
- IAEA open access radiation protection training material http://rpop.iaea.org/RPOP/RPoP/Content/AdditionalResources/Training/1_TrainingMaterial/index.htm
QUALITY NEWS

IRPA Regional Congresses

The WHO has engaged in a series of collaborative activities with the International Radiation Protection Association (IRPA) in support of the implementation of the new BSS. For example, WHO co-sponsored three regional IRPA Congresses in 2014. This included participation in the scientific programme committees, technical input for the development of the scientific programme, contribution to the review and classification of abstracts and involvement in technical activities.

WHO was one of the eleven supporting organizations in the 4th Asian and Oceanic Congress on Radiation Protection (AOCR-P-4) held from 12 to 16 May in Kuala Lumpur. WHO’s involvement included: a joint UNSCEAR-WHO workshop on “Data Collection on Medical Exposures”, a joint IOMP-WHO session on “Radiation Protection in Medical Environment: Roles and Responsibility of Healthcare Providers”, a WHO refresher course on “Risk Communication in Pediatric Imaging”, and a WHO refresher course on “Justification of Medical Exposures”. Read more on AOCR-P-4: http://www.aocrp-4.org/

Moreover, the WHO looks forward to participating in the 4th African Regional IRPA Congress to be held from 13 to 17 September in Rabat, Morocco with the theme “Strengthening of radiation protection infrastructure”. The conference took place in Geneva on 23–27 June with the theme “Radiation Protection Culture - A global challenge” and gathered over 700 participants. Read more on AFRIRPA 2014: http://afrirpa04.com

ICRQS Session @ ICR2014

The 28th International Congress of Radiology (ICR) will be held in Dubai from 9 to 12 September. The ICRQS is coordinating a session during the Congress focusing on radiological quality and safety. Drs. J. Borgstede (International Society of Radiology) and J. S. Al Suwaidi (Dubai Health Authority) are co-chairing the session. The topics and speakers are summarized below.

<table>
<thead>
<tr>
<th>LECTURE TOPIC</th>
<th>INVITED SPEAKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Improvements in Radiological Safety and Quality – An ICRQS Perspective</td>
<td>Dr. I. Lau</td>
</tr>
<tr>
<td>Implementation of the New Basic Safety Standards at National and Local Levels</td>
<td>Dr. J. Vassileva</td>
</tr>
<tr>
<td>Improving Radiological Safety and Quality – Bonn Call-for-Action Priorities</td>
<td>Dr. M. Mikhail</td>
</tr>
<tr>
<td>How the New Safety Standards Improve Safety and Quality in Radiology Practice</td>
<td>Dr. J. Borgstede</td>
</tr>
<tr>
<td>Radiology Access in Low-resource Settings</td>
<td>Dr. A. Velazquez Berumen</td>
</tr>
<tr>
<td>Improvement by Collaborating in a Global Summit</td>
<td>Drs. E. Stern (Presenter), J. Brink, G. Frija</td>
</tr>
<tr>
<td>Improvement by Applying an EuroSafe Campaign</td>
<td>Dr. G. Frija</td>
</tr>
<tr>
<td>Improvement by Implementing Peer review</td>
<td>Dr. H. Abujudeh</td>
</tr>
</tbody>
</table>

We look forward to meeting you and exchanging experience in radiological quality and safety in Dubai!

More information about ICR2014 is available from: http://icr2014.org
2nd International Conference on Radiation Protection In Medicine

Following a successful 2010 conference, the RPM conference returned to Varna, Bulgaria this year. Two hundred and eighty professionals from 54 countries participated from May 30 to June 2. The International Society of Radiology collaborated as one of the international partners. The participants included medical physicists, radiologists, radiological technologies / radiographers, regulators, manufacturers of medical equipment, patient organizations, referring physicians, and specialists in public relations and risk communication.

The RPM2014’s motto was “Facing increasing challenges,” and the program addressed how to meet these challenges. The program consisted of four plenary and eight scientific sessions, three special focused sessions, and panel discussions, in which 46 invited talks by world-famous scientists were given. In the first plenary session, well-known researchers reported the recent evidence on increased cancer risk following CT procedures in childhood despite the low number of scans and exposures. This session provided background for a subsequent panel discussion on how to communicate this risk to patients and public. Patient advocates participated in this discussion.

Another important topic deliberated was the use of patient exposure records in justification and optimization of individual patient exposure. There was a session on the use of clinical referral guidelines and clinical decision support system. Special focus was provided to new technologies with potential for sub-mSv CT and challenges for other modalities in dose management.

Two dedicated forums presented the positions and activities of international organizations, including EC, IAEA, ICRP, and WHO, as well as the represented professional organizations: EFOMP, EFRS, ESR, IOMP, IRPA, and ISR towards the development and implementation of the new BSS and the new Euratom BSS Directive in Europe. The implementation of radiation protection standards in medical practice and their integration within healthcare systems were recognized as one of the important challenges for the international community. The role of regulation and regulators was discussed in a dedicated session supported by the Heads of the European Radiological Protection Competent Authorities (HERCA) where actions to transpose the new European directive were presented.

The conference proceedings will be published in a special issue of “Radiation Protection Dosimetry”. Abstracts and invited presentations are available at the conference website: www.rpm2014.org.

(Courtesy of Professor Jenia Vassileva, Chair of the RPM Organizing Committee)

Book review

Radiological Safety and Quality - Paradigms in Leadership and Innovation

“This edited book addresses fundamental radiological safety and quality principles in medical imaging. … Several groups should find this book educational, including students, experienced clinical leaders, and stakeholders in radiology, radiography, medical physics, health physics, patient safety, administration, regulatory authorities, professional organizations and agencies. The book is superbly edited with chapters written as a unique collaboration of experts from leading international agencies and professional organizations, appropriately qualified for the topics.”

(Lawrence T. Dauer, Doody’s Book Reviews, April, 2014)


The messages of support from the eleven international organizations and agencies convey a common theme: there is no single panacea to improve radiological safety and quality but on-going leadership, innovation, collaboration and stakeholder participation are needed. The book is available as a download if your library is a Springer subscriber. More information is available from: http://www.springer.com/medicine/radiology/book/978-94-007-7255-7