A MESSAGE FROM THE ISR PRESIDENT

As the incoming ISR President, it is my pleasure to comment on this Newsletter, because quality and safety activities are among the top priorities of my presidential term. Last November we formally established a new structure on this matter by forming an ISR Quality and Safety Alliance (ISRQSA). The ISRQSA will act as a convener of and facilitator for continental, regional, and national quality and safety campaigns in radiation protection and drive the ISR’s quality and safety agenda, including liaison with the WHO, IAEA, ICRP, ISRRRT, IOMP and other international organisations.

Guy Frija, (France) and Donald Frush (USA) were appointed as co-chairs of the ISRQSA and provided a thorough work plan to be implemented in early 2017. A meeting outlining this global initiative gathered many international experts was held during RSNA last year and is summarised later in a specific article.

Historically, the ISR had been very much involved in facilitating education in different aspects of medical imaging. Radiological quality and safety topics increasingly feature in scientific and educational programs in meetings and congresses endorsed by the ISR.

This issue of the ISRQSA Newsletter edited by Lawrence Lau (who will also continue at ISR as an advisor to the ISR President) gathers not only information about ISR endeavours on the subject but also news from other national and international societies and NGOs that are committed to and involved in activities to improve patient care and radiation safety. Of great interest are the recommendations, guidelines, and tools and the experience from other societies and organisations within the radiology and radiation safety communities focusing on ways to strengthen the safe and judicious use of procedures in different populations, regions, and settings.

I hope that the topics and news collated in this Newsletter would be of great interest to the readers as it has been to my colleagues and me. The ISR facilitates good clinical practice worldwide by promoting awareness, sharing experience, and advocating the use of evidence-based recommendations and guidance tools, not only in virtual or in-person activities but also through this Newsletter that aspires to disseminate the most noteworthy news in radiological quality and safety.

Enjoy it!

Ricardo Garcia-Monaco
President, International Society of Radiology
Message from the Editor

Readers of this newsletter would be familiar with the elements within a comprehensive framework for radiation protection. These include three quality and safety measures: justification, optimisation, and incident prevention; and seven implementation strategies: conduct research, promote awareness, provide education, strengthen infrastructure, implement policy, evaluate impact, and apply on-going improvement. The outcome is enhanced by better stakeholder engagement, communication, collaboration, teamwork, leadership, culture, and innovation within healthcare systems, between organisations, and in radiology facilities. One of the articles offers an insight how to be more effective and productive leaders.

Education is perhaps the most effective implementation strategy to improve patient care and radiation safety. Good practice tools provide recommendations and guidance to users of radiation medicine procedures. Examples of free webinars, e-learning best practice protocols, and self-assessment modules are included in this newsletter. Other examples of radiation protection resources include fact sheets, pregnancy awareness posters in different languages, etc. Open access resources strengthen education and awareness. Consumers need guidance from trustworthy sources on radiation safety and a more appropriate use of procedures; recommendations from Image Gently and Choosing Wisely are good examples.

There are articles on patient care and radiation safety activities from leading organisations e.g. IAEA, ICRP, ISRRT, QST, UICC, WONCA, etc. The International Society of Radiology is strengthening its radiological quality and safety efforts by establishing an ISR Quality and Safety Alliance (ISRQSA) in collaboration with members. The Alliance co-chairs and members provide an update on their achievements and planned activities.

“Enhance the implementation of the principle of justification” is Action 1 of the Bonn Call-for-Action. Action 1 includes the justification of asymptomatic individuals as well as symptomatic patients. There is an increasing use of CT for the individual health assessment (IHA) of asymptomatic individuals. There are articles on the WHO Consultations on IHA and the “First Korean Consensus Statement on the Adequate Use of CTExam in IHA.” Referring to the principles stated in the International Basic Safety Standards, the WONCA Council passed a resolution in 2016 on “justification and appropriateness in radiological diagnostics.” These are examples of stakeholder collaboration and application of a globally developed and locally implemented model to improve radiation safety and more appropriate use of procedures.

Without a doubt, the use of evidence-based recommendations and guidance tools in daily practice improves patient care. The effectiveness depends on the teamwork of radiologists, radiographers, and medical physicists, each playing a unique and synergistic role. Awareness and leadership are required to bridge the gap between evidence and practice.

They are some highlights of this newsletter. You would have come across other open-access resources on quality care, patient safety, and radiation protection apart from these EXAMPLES. Kindly forward the links and share these with our readers in the next edition.

Please direct distribution or contribution query to mhierath@isradiology.org or LS.LAU@bigpond.net.au.

Lawrence Lau, FACR, FAMS, FRANZCR, FRCR
Editor, ISRQSA News
Advisor to the ISR President
ISRQSA NEWS

ISR Quality and Safety Update: The First Meeting of the ISR Quality and Safety Alliance (ISRQSA) at RSNA 2016: A Global Lead for Medical Imaging Quality and Safety

The mission of the International Society of Radiology (ISR) is “...to facilitate the global endeavours of the ... member organisations to improve patient care and population health through medical imaging”. To this end, the ISR recently formally established the Quality and Safety Alliance (ISRQSA). The ISRQSA is co-chaired by Drs. Guy Frija (EuroSafe Imaging Chair of the European Society of Radiology) and Donald Frush (Image Gently Alliance Chair), both appointed at this past RSNA on November 26th. Current members of ISRQSA are: AFROSAFE (E-Afrosafe and F-Afrosafe), Canada Safe Imaging, EuroSafe Imaging, Image Gently, Image Wisely, Japan Safe Imaging, and LatinSafe. In common, these are independent professional organisations led primarily by radiologists and supported by their regional societies of radiology. Most of them are also multi-stakeholder organisations, having on board Medical Physicists and Radiographers and it is anticipated that this model would be a necessary and valuable element for new organisational involvement in the ISRQSA.

Discussions at the July 2015 ISR summer retreat, and the 2016 winter ECR and fall ICR resulted in the formation and further development of the aims, scope and governance for the ISRQSA. The ISRQSA will be responsible for the Society’s quality and safety agenda, and especially function early on as convener of and facilitator for continental, regional and national radiation protection quality and safety. The ISRQSA will work in collaboration with other relevant organisations in the domain of safety and quality, including the IAEA, WHO, IRPA and ICRP and like international societies/organisations.

The overarching objective for the ISRQSA in the realm of radiation safety will be to establish a strategic plan for global efforts related to quality and safety, which reflect the input of the Campaigns. The specific goals of the ISRQSA will embrace contributions towards justification and optimisation, education, equipment performance, regulatory guidance, effective communication, as well as research related to medical imaging radiation protection.

There are several steps planned. First, a survey of existing Campaign portfolios is near completion and will be circulated to Campaign leadership. Specifics of individual Campaigns related to mission, geographic representation, leadership, strategic plan, business model, relationships to health authorities, and communication strategies, among others will be gathered. Additional steps consist of identification of current Campaign needs, and a resource repository which can serve for exchanges between existing and developing Campaigns.

Further tasks of the ISRQSA include:

- Providing relevant material for the ISR website;
- Actively contributing to the Education Commission of the International Commission on Radiological Education (ICRE); and
- Contributing to the ISR newsletter.

The ISR Quality and Safety Alliance representatives will meet at ECR this year to discuss the information gathered in the survey and to continue to design a roadmap in meeting the quality and safety mission of the ISR. The ISRQSA is entirely harmonious with the planned actions of the ISR as Dr. Ricardo Garcia-Monaco, President of the ISR, stated in his New President’s Letter: “During my two-year presidency I aim to work on strengthening the interaction and exchange among our members . . . One of our core activities will be to . . . further develop the ISR’s quality and safety activities.”

Contribution from Donald Frush and Guy Frija Co-Chairs, ISR Quality and Safety Alliance.
An article entitled “Justification of CT for Individual Health Assessment of Asymptomatic Persons: A World Health Organisation Consultation” co-authored by J. Malone et al. was published in Journal of the American College of Radiology in 2016.

Computed Tomography (CT) is among the most successful health technology developments and one of the most valuable as a medical imaging tool. In addition to the use of CT in patients with clinical signs and/or symptoms, CT is used for screening of asymptomatic individuals to identify those who have risk factors or early stages of disease. This is often not performed as part of a population-screening program and is referred to as individual health assessment (IHA). IHA using CT is currently used in coronary artery calcium scoring, in investigation of coronary artery plaques, in detection of cancers of the lung, colon, and abdominal cavity, in whole-body CT surveys, and in many other areas. The justification of these IHA practices performed outside approved screening programs require particular considerations, some of which go beyond the assessment of the risks associated to the exposure to ionising radiation.

Building upon the conclusions of a 2014 consultation convened by WHO, this article discusses the terminology and culture of IHA practice, reviews the current status of the IHA practice in different regions of the world, identifies some social, ethical, public health and resource implications, examines the needs concerning risk-benefit dialogue, communication to the public, education and training of health professionals, guidelines and clinical audit, analyses some regulatory aspects and emphasises the need for a framework for good clinical governance of the use of CT for IHA.

Three subcategories of examination for asymptomatic individuals are identified, i.e.:

- Formal screening programs;
- Examinations for which the evidence base or risk profile is incomplete (“IHA-A”); and
- Opportunistic examinations with little or no evidence or risk profile to suggest they have any merit (“IHA-B”).

The so-called “IHA-B” challenges the principle of justification, which is one of the pillars of radiation protection in medicine. In addition, there are other associated issues such as direct and indirect costs, ethical dilemmas, false positives, equivocal and incidental findings. These and other considerations indicate that in order to view some IHA as part of good medical practice it would be necessary to establish robust clinical governance framework which includes regulatory dimensions.

The content of this article was the basis for the discussions during an international workshop held in Seoul, Korea, in September 2016 organised by WHO in cooperation with the KSR and the NECA. This workshop gathered 64 participants from 20 countries including radiologists, general practitioners, clinical researchers, medical students, experts in radiation protection, public health, health financing and health ethics, patient representatives, health authorities, radiation protection regulators, and representatives from professional societies and international organisations (IAEA, ICRP, ISR, and WHO).

The participants worked in plenary and breakout sessions. The workshop covered a spectrum of views about IHA from different perspectives and the concerns of different stakeholders, discussed a number of public health issues, identified the elements/requirements to be included in a framework of good governance of IHA practices and proposed a way forward for the development of a guidance document to support policy makers for the establishment of such a framework.

Contribution from Maria Perez, World Health Organisation.
The global burden of cardiovascular diseases—a group of disorders that can affect a person's heart and blood vessels—is growing due to unhealthy diets, sedentary lifestyles, and an increase in the prevalence of health conditions like diabetes. Doctors can use nuclear cardiology tools to 'look' inside a patient's heart and find out how it is functioning and to check its overall condition. This helps them to make a diagnosis for preparing a course of treatment.

One of the leading causes of death worldwide is cardiovascular diseases. In efforts to manage these heart-related diseases, eight techniques have been defined to help doctors more optimally use myocardial perfusion imaging (MPI)—a widely-used, low-risk and relatively inexpensive nuclear cardiology technique—in evaluating coronary artery disease.

In an IAEA-supported worldwide, cross-sectional observational study project, IAEA Nuclear Cardiology Protocols Cross-Sectional Study (INCAPS), researchers identified cost-effective best practices (Table 1) to optimise radiation exposure when using MPI without compromising patient care. The study also showed numerous opportunities to reduce radiation exposure globally.

Data from the INCAPS study revealed enormous variability in the use of nuclear cardiology techniques and best practices around the globe. It provided valuable information for the researchers to design eight, easy-to-implement recommendations to help doctors optimise and tailor, at little to no additional cost, the amount of radiation and the quality of care received by patients in nuclear cardiology.

"What the laboratories were doing in the past was not wrong, as those were also recommended doses, but now, in the light of advances in technology, we are proposing new recommendations to reduce the doses and how doctors care for patients," said Diana Paez, Head of the Nuclear Medicine and Diagnostic Imaging Section at the IAEA. The eight recommendations range from limiting the types of tests performed and avoiding the use of dual-isotope techniques, to using a patient's weight to determine appropriate doses of radiopharmaceuticals.

The study showed that the more these recommended best practices were implemented, the more laboratories were able to minimise radiation doses while maintaining high quality images and clinical information.

INCAPS researchers gathered data from 308 laboratories from 65 countries. These laboratories provided the results from 7,911 MPI studies taken over the course of one selected week in the spring of 2013.

Drawing in part on this study, the IAEA has developed and published freely available learning tools, webinars and training courses to reinforce the use of these new eight recommendations and other safe and best practices in nuclear diagnostic imaging.

"Education is one of the major components of the services we provide. It is not only for the practitioners that are doing nuclear cardiology, but to also raise awareness for the referring physicians on how to use and when to ask for these kinds of studies," Paez said. "Unless you know what's happening, you don't know how to handle it. Knowledge is key. Once you know, you can do something about it."

The study brought together experts from around the world with the IAEA taking a role as a worldwide coordinator. The project relied on the input and support of organisations and professional societies including the American Society of Nuclear Cardiology, Asian Regional Cooperative Council for Nuclear Medicine, Australasian and New Zealand Society of Nuclear Medicine, British Nuclear Medicine Society, British Nuclear Cardiology Society, Comisión Nacional de Energía Nuclear, European Association of Nuclear Medicine, European Council of Nuclear Cardiology, and Intersocietal Accreditation Commission, among others.

Contribution from Diana Paez and Thomas Pascual, Section of Nuclear Medicine and Diagnostic Imaging, Division of Human Health, Department of Nuclear Sciences and Applications, International Atomic Energy Agency

References

1. Optimising Nuclear Imaging for Healthier Hearts and Better Patient Care
2. Current worldwide nuclear cardiology practices and radiation exposure results from the 65 country IAEA Nuclear Cardiology Protocols Cross-Sectional Study (INCAPS)

Eight best nuclear cardiology practices from "Current worldwide nuclear cardiology practices and radiation exposure results from the 65 country IAEA Nuclear Cardiology Protocols Cross-Sectional Study (INCAPS)":

Table 1 Definitions of the eight best practices

1. Avoid thallium stress: No thallium stress tests were performed in patients ≤70 years old. SPECT MPI performed with thallium-201 is associated with a considerably higher radiation dose to patients than when it is performed with technetium-99m.  This excludes thallium rest-redistribution viability studies and stress-redistribution redistribution stress– viability studies.
2. Avoid dual isotope: No dual isotope (rest thallium and stress technetium) stress tests were performed in patients ≤70 years old. Dual isotope MPI is associated with the highest radiation dose of any protocol.
3. Avoid too much technetium: No study was performed with administered activity > 1332 MBq (36 mCi) for an injection of technetium, and mean total effective dose was < 15 mSv for all studies using just technetium injections. 1332 MBq is the highest recommended activity in guidelines, and 15 mSv is a high radiation dose for a study using technetium-99m.
4. Avoid too much thallium: For each nuclear stress test involving thallium, no more than 129.5 MBq (3.5 mCi) was administered at stress. The expert committee maintained that no more than this activity is needed for patients who are good candidates to receive thallium MPI.
5. Perform stress-only imaging: The laboratory performed at least one stress-only study, in which rest imaging was omitted, or the laboratory only does PET-based stress tests. If stress images are completely normal, subsequent rest imaging can be avoided to reduce radiation dose by up 85%. PET MPI studies have low radiation dose, the dosimetric advantage of stress-only is less, and there is less evidence regarding stress-only PET MPI.
6. Use camera-based dose-reduction strategies: The laboratory performed at least one study using at least one of the following: (i) attenuation correction (CT or line source); (ii) imaging patients in multiple positions, e.g. both supine and prone; (iii) high-technology software (e.g. incorporating iterative reconstruction, rescaling recovery, and noise reduction); and (iv) high-technology hardware (e.g. PET, a high-efficiency solid-state SPECT camera, or a cardiac-focused collimator). Each of these approaches reduces the radiation dose needed or facilitates performance of stress-only imaging.
7. Weight-based dosing for technetium: The laboratory had a statistically significant positive correlation between patient weight and administered activity (MBq), for injections of technetium. Tailoring the administered activity to the patient size offers an opportunity to reduce radiation dose.
8. Avoid inappropriate dosing that can lead to ‘shine through’ artifact: The laboratory performed no SPECT MPI studies with technetium-rest and stress injections on the same day, in which activity of the second injection was > 3 × that of the first injection. Shining through occurs in two injection, single-day technetium studies when residual radioactivity from the first injection interferes with interpretation of images for the second injection. To avoid shining through, it is recommended in guidelines that the activity (mCi) for MBq) is a third to two fourths of that of the first injection in some cases, this can be achieved with a second injection that has less than four times the activity by waiting for some of the technetium-99m to decay. Reflecting guidelines, we considered a second injection of less than three times the activity of the first injection to constitute dosing that can lead to shining through.
During the year 2016, the work of the Committee 3 on Protection in Medicine of the International Commission on Radiological Protection (ICRP) is presented below.

It was decided that protection in veterinary medicine will be added to the mandate of Committee 3 as of July 1, 2017.

The draft report on Diagnostic Reference Levels for Diagnostic and Interventional Imaging was approved and is likely to be published in 2017.

The draft report on Occupational Radiological Protection Issues in Interventional Procedures (fluoroscopy guided) is ready for public consultation and will be available at the ICRP website under consultation page in early 2017.

A proposal to create a Task Group on Radiological Protection in Medicine related to Individual Radio-susceptibility awaits deliberation with Committee 1.

Development of the draft report on Justification of the Use of Ionising Radiation in Medical Imaging will continue into the next term.

Task Group 36 on Doses to Patients from Radiopharmaceuticals has developed dose coefficients for new radiopharmaceuticals.

Task Group 101 on Radiological Protection in Therapy with Radiopharmaceuticals is likely to have a draft ready for approval by Committee 3 by the end of June 2017.

Committee 3 provided input into the work of Task Group 79 on The Use of Effective Dose as a Risk-related Radiological Protection Quantity.

Draft text on Radiation and Your Patient- a Guide for Health Care Practitioners will be made available for public consultation.

Educational Slides for Publication 128 and on “How to protect your hands in nuclear medicine work” were approved and will be uploaded on ICRP website soon.

The Committee identified several topics for potential future work: framework for optimisation in medical imaging in particular for individual patients; radiological protection aspects in imaging in radiotherapy (IGRT); protection of the lens of the eye, cardiovascular system and brain as implications for medicine of Publication 118.

Next meeting of Committee 3 will be held in Paris on October 7-12, 2017.

The 2016 meeting of C3 was held at the Cleveland Clinic, Abu Dhabi (CCAD), in conjunction with a CCAD-ICRP Symposium on Radiation Protection in Medicine on 6-9 Nov 2016.

Contribution from Madan Rehani, Secretary and Eliseo Vano Chairman, Committee 3, International Commission on Radiological Protection
The International Society of Radiographers and Radiological Technologists (ISRRT) held its 19th World Congress in Seoul, Korea from 20 to 22 October, 2106.

ISRRT has made “Bonn Call-for-Action” a part of their key strategic priority including contributing and promoting radiation protection safety culture.

As part of this initiative the ISRRT sponsored a pre-Congress workshop on “Challenges of radiation protection in the 21st Century”.

Donna Newman Director of Professional Practice, spoke on the “Global Aspect of Justification and Optimisation” using a team approach and the radiographer’s role. The presentation included information on the Basic Safety Standards and where to find information on justification and optimisation and understanding what it all means and how to apply this in everyday practice.

Dimitris Katsifarakis covered “Patient Safety Culture” and how this is essential in ensuring radiation protection and safety. Phase two of the justification pilot project for schools in Europe along with the module development to be used by the educators to teach the student radiographer on how to approach the principle of justification in the clinical field for the patient’s welfare was presented.

Radiographers contribute everyday to justification by checking for duplicate studies, ensuring that the indication or symptom for the procedure matches the protocol that has been established in the radiology department and bringing this information to the attention of the radiologist, and sometime the referring physician.

During the panel discussion countries were asked to share how justification was included as part of their practice, challenges countries are facing to ensure safety culture exist, and if DRL’s are important locally, regionally and nationally and how established.

Donna Newman and Stewart Whitley did a joint presentation on the WHO’s new book “Communicating Radiation Risk in Paediatric Imaging”. Previews of each chapter were discussed on Justification, optimisation strategies when imaging children, how to develop a safety culture, how to communicate with both the patient and the family as well as how to describe benefit and risk.

In the afternoon, the workshop took a global look at radiation protection, safety culture and radiation safety in clinical practice from three different areas of the world.

Mohamed Mahmoud Abuzaid talked on “Radiation Protection, Local Perspective from UAE” which included how safety culture, radiation protection and radiation safety are driving this area of the world. Workforce from different areas of the world provides a multi nation, multi global workforce adding layers to complexity of safety culture and systems.

Kim Gyehwan from Korea spoke on “Radiation Protection in Korea: Nuclear Medicine Technologist Clinical Experience.” Best practices in terms of justification, optimisation and quality control in a daily practice were covered. Challenge discussed was how to provide education specifically in radiation protection with a diverse culture.

Chris Steelman, ISRRT Regional Coordinator of Professional Practice from the America’s spoke on the “Radiologic Technologist Perspective - The Radiation Safety Advocate in the Cath Lab, USA Practice.”

Examples of many best practices, description of the radiographer being the advocate for the patient and the use of our voices when we see poor radiation safety practices were the highlights.

A second panel discussion presented discussion on “The Biggest Challenge in Radiation Protection and Safety in Your Country.” Interest in position statements for radiation therapy regarding radiation safety, support for using ALARA during simulation planning and development of radiation safety and radiation protection education guidance for different modalities highlighted this panel discussion.

It was a common theme throughout the day that all radiographers want to provide best practice but have challenges on how to ensure radiation safety is being adhered.

Contribution from Donna Newman, Director of Professional Practice, International Society of Radiographers and Radiological Technologists...
Canada Safe Imaging (CSI) is a new organization formed in 2015 with a vision to provide Canadian contextualized guidelines and tools for patient radiation safety to answer to the need for a Canadian national strategy. One impetus for this new Canadian initiative was to align with the International Atomic Energy Agency (IAEA) and the World Health Organisation (WHO) initiative, supported by 77 countries and 16 organisations, titled the “Bonn Call-for-Action,” which outlines 10 major strategies for stakeholders regarding radiation protection in medicine for the next decade.

With the exponential increase in medical imaging and commensurate patient radiation exposures, understanding and harmonising patient radiation safety practices across Canadian health care jurisdictions should be a priority. The delivery of health care is a provincial responsibility in Canada but a focused national strategy and a unified effort is needed to ensure radiation safety in medical imaging for all Canadians. As such, CSI was formed to develop awareness and adoption of current and emerging radiation patient protection strategies for Canadians.

The Coalition represents a collaborative undertaking between government agencies, professional associations, universities, colleges, national research institutions and hospitals. Members include, but are not limited to:

- Canadian Association of Radiologist (CAR);
- Canadian Association of Medical Radiation Technologists (CAMRT);
- The Canadian Organisation of Medical Physicists (COMP);
- The Canadian Association of Nuclear Medicine (CANM);
- Ontario Association of Medical Radiation Science (OAMRS);
- Ordre des technologues en imagerie médicale, en radio-oncologie et en électrophysiologie médicale du Québec (OTIMROEPMQ); and
- MEDEC (a national organisation representing Canada’s innovative medical technology industry).

In the past year, CSI has had a number of accomplishments raising awareness in Canada and internationally when it comes to patient radiation safety. CSI has joined forces with a number of similar international initiatives such as Image Wisely, Image Gently, and EuroSafe Imaging, to form an international network under the auspice of the International Society of Radiology in an effort to make patient radiation safety a global cause. CSI has also formed collaborations with key organisations, legislators, and individuals within Canada itself.

In the coming year, it is expected that CSI will complete and publish an environmental scan, which will survey all the organisations involved with medical imaging and hospitals in Canada. This scan will be used to determine how each of these organisations has aligned their practices and goals with the “Bonn Call-for-Action.” In addition, pilot projects within individual provinces will continue to be formed to develop collaborations with the regulators so that CSI becomes a key advisor to provincial concerns and guidelines regarding patient radiation protection.

CSI has earned recognition and is now an established player on the Canadian medical radiation scene. CSI will make available educational material for health professionals and patients, communicate timely information and reports, such as the Canadian Computed Tomography Survey released by Health Canada in 2016.

Contribution from David A. Koff, Chair Canada Safe Imaging
ISRQSA NEWS

A Decade of Making a Difference

Image Gently begins its 10th year in 2017. As this year begins, it is worth a look back at select accomplishments, and there is also an opportunity to look ahead at current projects and developments.

Image Gently in 2016
1. Formal name change from the Alliance for Radiation Safety in Paediatric Imaging to the Image Gently Alliance, a simpler and more familiar moniker [1];
2. Continued clarification and promotion of the goals of the Image Gently Alliance [1, 2]; for example, broadening from a focus on using less radiation to using the right amount. Less is not always appropriate when it comes to using ionising radiation in children in medical imaging. In keeping with this, the perspective the Alliance advocates for informed use of radiation rather than focusing only on dose reduction;
3. Partnership with Image Wisely for a continuing series of alternating monthly columns in the Journal of the American College of Radiology under the banner of “Radiation Sensibilities” edited by Richard Monn, PhD and Donald Frush, MD. This series began with the January issue of JACR [3];
4. Release of phase 1 of the Think A-Head Campaign for the use of imaging exams, especially CT, in the setting of minor closed head injury especially in children [1];
5. Annual Image Gently Butterfly Award to Alan G. Lurie, DDS PhD for his leadership on the dental campaign released in 2015, which reflects a career dedicated to informing use of radiation in dental imaging;
6. Continued close collaboration with the growing global network of sister organisations (e.g., AFROSAFE, Canada Safe Imaging, Eurosafe Imaging, Image Wisely, Japan Safe Imaging, LatinSafe, LatinSafe Pediatra etc.) with aligned missions for radiation protection children;
7. Build and release of release of a microsite for parents emphasising the Think A-Head Campaign;
8. Continued input into U.S. authorities (e.g., accreditation, regulatory, guidance) such as The Joint Commission where there was guidance in the need for national patient safety goals relevant to the use of ionising radiation children;
9. Recognition of the Alliance in continuing efforts by the North American paediatric nuclear medicine community for harmonisation of use of radionuclides in children and
10. Continued presence in scientific venues and publications both nationally and internationally (e.g., a current series of webinars sponsored by the IAEA and a WHO publication on risk communication for use of ionising radiation in children [4]).

Image Gently in 2017 and Beyond
1. Ongoing efforts by newly established committees for advancements in both the home website social marketing;
2. Development of a microsite for healthcare providers/referrers;
3. Exploration of opportunities for greater presence in parent/public advocacy efforts and organisations;
4. Phase 2 of the Think A-Head Campaign directed towards (a) decision rules and (b) proper performance of head CT and children following minor closed head trauma (in the Spring of 2017);
5. Release of the Have-A-Heart Campaign in conjunction with paediatric cardiology community aimed at education and advocacy at optimisation of imaging that depends on ionising radiation in children with congenital and acquired cardiovascular disease, emphasising fluoroscopy/angiography, CT and nuclear imaging (Spring of 2017); and
6. Initial dialogue about presence of relevant Image Gently connections/content as part of ACR Select decision support.

There is still need for all Campaign efforts, such as through the Image Gently Alliance [5-7], and a high value of the products and plans for the global network of organisations much of which is highlighted in this newsletter. The value of such efforts was recently exemplified in the communication of a parent concerned about radiation exposure after his son needed imaging following minor head injury:

“Thank you for taking the time out of your week to reply back to me on this issue. Our family’s fears are allayed. Moreover, this experience and Image Gently have raised our awareness and clarified radiation in general amidst much online confusion.”

Contribution from Donald P. Frush, Chair, Image Gently Alliance

References

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Contribution from Donald P. Frush, Chair, Image Gently Alliance

References
The Image Wisely® campaign is a collaborative effort of the American College of Radiology (ACR), the Radiological Society of North America (RSNA), the American Association of Physicists in Medicine (AAPM), and the American Society of Radiologic Technologists (ASRT). Image Wisely’s primary goal is raising awareness and providing information and educational material about the use of ionising radiation in medical imaging. The chief mechanism for distributing this information is a dedicated website (www.imagewisely.org), which provides resources and information for imaging professionals.

18,000 Pledge to Image Wisely® in First 4 Weeks of 2017

On January 1, 2017, Image Wisely® converted its pledge from a once-in-a-lifetime event to an annual renewal. All pledges made before December 31, 2016 expired at midnight; all individual, facility, and association/educational program pledges were removed from the books, the counter was reset, and the honour roll for facilities and associations/educational programs was erased. The two primary reasons for this conversion were to stimulate interest in visiting the Image Wisely® website and to provide those who pledge with a dated certificate which can be used as evidence of their awareness of and commitment to Image Wisely®.

In early January, the campaign sent an e-mail reminder to everyone who had pledged before the end of 2016 explaining what was happening and providing links to the website and the pledges. The response was immense, with over 18,000 individual, 80 association or educational program, and 700 facility pledges in the first four weeks.

Image Wisely® at 2016 RSNA Scientific Assembly and Annual Meeting

Image Wisely® organised several events during the 2016 RSNA meeting in Chicago, IL. The first was the Special Interest Session: “Global Medical Radiation Campaigns: Image Gently, Image Wisely, and EuroSafe: Is All This Still Necessary?”, co-developed with Image Gently®. William Mayo-Smith, MD discussed the evolution of Image Wisely®, Donald Frush, MD covered the continuing need for Image Gently, Guy Frija, MD, discussed the impact of EuroSafe and Kalpana Kanal, PhD discussed the ACR Dose Index Registry and its role in developing diagnostic reference levels in the USA.

Two Image Wisely® leaders, Richard Morin, PhD and Eric Gingold, PhD discussed “Image Wisely: A History and Current Events” and “Image Wisely: Radiation Safety Cases” respectively, in the new RSNA Discovery Theatre.

RSNA Radiation Dose Exhibits

Each year, RSNA gathers the finest educational content from its members (radiologists, medical physicists, and technologists) to present as digital posters at the RSNA Scientific Assembly and Annual Meeting. RSNA Education has partnered with Image Wisely® to provide open links to a new RSNA Radiation Dose Exhibits feature each month. Open access to these electronic presentations on the Image Wisely® website requires neither registration nor RSNA membership. The most recent exhibit, “Dual Energy Computed Tomography in Post-(T)EVAR Patients: Advantages of the Virtual Non-contrast CT and the Iodine Overlay Measurements” by L. Maaskant, J. Florie, M. L. Dijkshoorn, R. Boosj, G. P. Krestin, and M. Ouhlous was posted on December 12.

New exhibits from the 2016 RSNA meeting have been selected for posting in 2017.

Image Wisely® Radiation Safety Case

Image Wisely® presented another new Radiation Safety Case, Case 9: “Balancing Image Quality and Radiation Dose in Cardiac CT Angiography” by N. Meyersohn, B. Ghoshhajra, and U. Hoffmann, in the free series of online and mobile-compatible educational. Radiation safety case content includes embedded questions that allow professionals to assess their understanding of important radiation safety concepts. Each question provides expert feedback as well as references and resources for further study. Continuing education credit for radiologists, imaging technologists and medical physicists is available after successfully completing a brief post-instruction quiz and evaluation survey.

Contribution from Priscilla Butler, Wil Creech, William Mayo-Smith, and Richard Morin, Image Wisely®
First Korean Consensus Statement on the Adequate Use of CT Exam in Individual Health Assessment (IHA)

The National Evidence-based Healthcare Collaborating Agency (NECA) of Korea has developed and announced the nation’s first consensus statement on the adequate use of CT exam in individual health assessment (IHA). NECA had hosted a round table conference (NECA resonance) on November 3rd 2016 in conjunction with the Korean Society of Radiology (KSR) and various other medical societies of Korea to discuss the issue.

This is the first nationwide agreement on individual health assessment developed by medical experts, and the consensus statement emphasises providing accurate information (on potential risks and benefits) to the presenters by the healthcare providers. Therefore it is imperative that healthcare providers be equipped with adequate knowledge of the risks and benefits of CT use in individual health assessment. The role of the radiologists, who are experts on imaging, is especially important, as much of individual health assessment involve the use of imaging; the radiologists should be familiar with this and able to educate other healthcare providers.

The distribution of CT scanners in Korea is among the upper half when compared with other countries reported to the Organisation for Economic Co-operation and Development (OECD), and the number of CT exams have risen significantly in Korea in the last decade.

In 2013, there were 37.6 CT units per 1 million people (Australia 53.7, United States 43.3, Iceland 40.1, Germany 33.7 etc.) in Korea and the number of exams were 5.25 million in 2010, 5.9 million in 2011, 64.7 million in 2012, and 697 million in 2013. Although CT is being increasingly used in individual health assessment, no nationwide guideline on the adequate use of CT exam in individual health assessment had existed.

From September 6 to 8, 2016 NECA and KSR jointly organised a WHO International Stakeholders Workshop on Justification of the Use of CT in IHA of Asymptomatic People in Seoul, Korea. About 60 various global experts on radiation protection, radiologists, healthcare policy makers, and patient group representatives attended the meeting to compare the current status of the practice in different regions of the world and identify and discuss key issues related to the justification process, clinical governance and regulatory approaches, in order to develop WHO as well as national guidelines. At the workshop, the experts agreed on a basic principle that there should be thorough explanation to the presenters at the individual health assessment about the potential risks and benefits of CT exams and there also must be some effort on accumulating reliable scientific evidence on use of CT exams in individual health assessment.
First Korean Consensus Statement on the Adequate Use of CT Exam in Individual Health Assessment (IHA)

NECA’s National Consensus Statement on the Adequate Use of CT in IHA

- **When CT exam is used in individual health assessment, what information should we provide to the presenters, and are we providing accurate information before the exam?**

  When CT exam is used in individual health assessment, there are **potential benefits** (such as early detection and treatment of disease) as well as **potential risks**:
  - **potential benefits**: early detection and treatment of disease, improvements in survival
  - **potential risks**: over diagnosis, false positives, false negatives, radiation exposure, discomfort caused by exam itself, adverse reactions to contrast media, additional tests at additional costs to confirm a diagnosis, which may cause complications

  Balanced information about the potential benefits and risks of CT exams is not provided to the presenters of individual health assessment, and this might violate the autonomy of the presenters in decision-making.

  Therefore, presenters of individual health assessment must be provided with adequate information about the potential benefits and risks of CT exams before making any decisions.

- **Is there enough scientific evidence on the adequate use of CT exams in individual health assessment?**

  Currently, there is only sparse scientific evidence on the potential risks and benefits of CT exams in individual health assessment, and therefore, accumulation of reliable scientific evidence is necessary.

- **What are the improvements to be made for the adequate use of CT exams in individual health assessment in Korea?**

  When CT exams are done as a part of individual health assessment, the presenters must be provided with balanced and adequate information about the potential benefits and risks of CT exams through thorough explanation by healthcare providers, after which the presenter must give informed consent. Steps must be taken to improve the current process so that the presenters can listen to the explanations by healthcare providers, only after which the presenters may then decide whether or not to undergo CT exams. The presenters must also provide accurate information to the healthcare providers so that they can get more personalised explanations and recommendations.

  We recommend developing materials and system for educating the healthcare providers including doctors about the potential benefits and risks of CT exams in individual health assessment.

  Support is needed for data collection and research in order to accumulate reliable scientific evidence.

  To this end, preexisting individual health assessment data should be openly available for review for public interest purposes, and further steps should be taken for linking the data with other healthcare data sources.

As part of follow-up action on the WHO workshop, NECA then held the Korean stakeholders’ roundtable conference in November to discuss the results of the WHO workshop and current status of individual health assessment in Korea with the Korean stakeholders (policy makers, clinicians, health exam experts, journalists, NECA researchers) in order to develop the nationwide consensus statement more appropriate for the status in Korea. The agreement is based on the stakeholders’ consensus on providing accurate information, and scientific evidence, and improvements to be made regarding use of CT exams in individual health assessment.

Contribution from Seung Eun Jung and Kyongmin Sarah Beck, Korean Society of Radiology
Update from RANZCR: InsideRadiology and Choosing Wisely Australia

InsideRadiology

InsideRadiology is a multidisciplinary, evidence-based resource developed and managed by the Royal Australian and New Zealand College of Radiologists (RANZCR). Initially launched in 2009, InsideRadiology provides consumers and health professionals with up-to-date information on diagnostic imaging and interventional radiology relevant to the Australian and New Zealand healthcare environments.

Over the last twelve months, the InsideRadiology team has:

✦ Amended the three information items on contrast agents to bring them up to date with the College’s recently revised contrast media guidelines;
✦ Reviewed and condensed the Cardiac MRI information items into a single comprehensive item; and
✦ Developed a new information item covering the emerging breast imaging technique of breast tomosynthesis.

InsideRadiology has transitioned from funding by the Australian Department of Health to a fully integrated trans-Tasman College-owned resource. As part of this process, the website has been redesigned to align it with other College resources, and was relaunched at the Appropriate Use of Medical Imaging Forum at the RANZCR Annual Scientific Meeting in October 2016. Although tailored for Australia and New Zealand, Inside Radiology has millions of international visitors to the site annually who value its independent and impartial advice.

With a fresh layout and look, the new website contains all the information about medical imaging tests and procedures from the previous site, but will also host additional College resources for health consumers and referring health professionals. Take a look at www.insideradiology.com.au or www.insideradiology.co.nz. For more information about InsideRadiology, please contact the Quality and Standards Team at RANZCR on quality@ranzcr.edu.au.

Choosing Wisely Australia

Choosing Wisely commenced as an initiative of the American Board of Internal Medicine (ABIM) Foundation and was adopted by Australia in 2015 following the success in a range of countries. The Faculty of Clinical Radiology, RANZCR was an inaugural member of Choosing Wisely Australia and is therefore one of the founding medical specialist colleges. The goal of Choosing Wisely Australia is to start conversations between consumers and clinicians about unnecessary, tests, treatments and procedures, enhancing the quality of care and where appropriate, reducing unnecessary care.

RANZCR is committed to reducing inappropriate imaging and ensuring all imaging is appropriate and clinically accountable. The Faculty of Clinical Radiology’s six recommendations of medical tests, treatment and procedures clinicians and consumers should question, were launched by Choosing Wisely Australia in April 2015 as listed above. You can download our full recommendations list here: Choosing Wisely Recommendations.

Further information and educational resources to assist clinicians when considering these recommendations are available here. If you have any questions, please contact quality@ranzcr.edu.au.

Get involved with InsideRadiology by:

✦ Promoting InsideRadiology in your professional networks;
✦ Supplementing your hospital or practice resources using links to InsideRadiology;
✦ Recommending any topics that could be considered for inclusion; and
✦ Volunteering to assist with content.