Dear Colleagues,

As we all know, radiation protection in children is a very important topic. However, it is often not given enough attention especially when children are scanned in adult institutions. In many instances, children undergoing CT scans are scanned using adult protocols and are exposed to unnecessarily high radiation doses. There is a lack of knowledge on the practice of radiation protection amongst the different countries in Asia and our Asian network will try to address this issue. Hopefully with increased knowledge, changes in practice will occur.

With this aim in mind, I share with you our second issue of the Newsletter. In this issue, we are pleased to announce acceptance of a paper for publication in the American Journal of Roentegenology (AJR) entitled “IAEA survey of pediatric CT practice in 40 countries in Asia, Europe, Latin America and Africa: Part 1. Frequency and Appropriateness”. I am also pleased that Dr Marilyn Goske, Chair of the Image Gently alliance, has contributed an article for our newsletter.

I strongly encourage all our colleagues in the region to continue the education of radiation protection in children amongst the radiological community as well as the referring clinicians. The IAEA has been a tremendous help in the publication and dissemination of newsletter. I welcome comments and your contributions on topic related to radiation protection, in particular your experiences.

********************************************

Message of Chair, Image Gently
Marilyn J. Goske, MD
Professor, Cincinnati Children, Cincinnati, USA
(Marilyn.Goske@cchmc.org)

It is an honor to have an opportunity to write to you through this Radiation Protection for Children newsletter. I have learned through my work with the IAEA of all the dedication many of you have shown, sometimes under very challenges circumstances, to try to promote radiation protection for children. This is a most important goal that we are all working towards. I truly believe that radiologists and other radiology medical professionals want to “do the right thing” when taking care of children, but on occasion, lack of educational information can be a problem. That is one of the reasons that the Image Gently campaign was created. We wished to create educational materials for medical professionals and for parents. On the Image Gently website (www.imagegently.org), we have CT protocols that can be used on any piece of CT equipment regardless of the age of the machine or the number of detector rows. There are other free materials as well. I look forward to “speaking” to you about more of the work we can do together and providing updates on new research. Thank you for this opportunity.

********************************************

Network Information and News
Madan M. Rehani, PhD
International Atomic Energy Agency, Vienna
(M.Rehani@iaea.org)

Another region (Latin America) joined the IAEA networks on radiation protection of children in April 2011. The mission of all networks is “To ensure a rational and safe practice of radiation exposure in children of IAEA Member States, and to propagate the message of radiation safety of children in compliance with international standards,
national regulations and recent scientific knowledge”.

The actions and mechanism to be utilized are provided on RPOP website of IAEA.

The surveys conducted in different countries have resulted in first paper and other papers are under preparation. Those who wish to participate in further surveys and studies, please contact me at above email address.

Recognizing the importance of this subject, the IAEA has decided to hold a session on “Children and radiation in Medicine – protecting the young patients”, on 20th September 2011 during its 55th General Conference this year.

-----------------------------------------------

Use of Bismuth Shields for Pediatric CT scans
Dr Harvey Teo
Department of Diagnostic Imaging and Intervention, KK Hospital, Singapore

We have been using bismuth shields for pediatric CT scans since late 2008. The use of bismuth shields in children is controversial because some authors advocate the use of tube current reduction methods to decrease radiation dose rather than bismuth shields (1, 2). Another possible drawback of bismuth shields is that they may cause artefacts in some scans. However, these may be overcome with proper placement of the shields. At our centre, when bismuth shields were first used, radiologists were asked for their opinion regarding image quality. There was consensus that image quality did not significantly deteriorate and diagnostic quality was not affected. Since the implementation of bismuth shields, radiologists have been happy with the image quality.

We use bismuth shields for the eye in CT scans of the temporal bone, paranasal sinuses and cervical spine. Bismuth shields for the breast tissue in females and the thyroid gland are routinely used for chest CT. The bismuth shields are placed on the patient only after the scout image has been obtained. Our CT scanner determines tube current modulation using the scout and not in real time. So we do not encounter problems of artefacts using this technique. We perform a monthly audit of all our CT cases to ensure that our technologists do not forget to use the bismuth shields during CT scan examinations. This is now a key performance index for our department.

Bismuth shields form only a part of our strategy in reducing radiation dose from CT in children. Other methods include development of a workflow whereby every CT request is vetted by a radiologist or resident prior to the procedure to ensure appropriateness of the study. We have also developed pediatric specific CT protocols. These protocols may be further modified for the individual patient to ensure that only the region of interest is scanned.


-----------------------------------------------

Pediatric Radiology in Pakistan
Areesha Zaman
Deputy Chief Scientist,
Institute of Nuclear Medicine and Oncology (INMOL), Lahore, Pakistan

There are six children’s hospitals in the big cities throughout Pakistan. These hospitals are equipped with the latest imaging modalities. In the children’s hospitals careful consideration is given to the appropriateness of radiological examinations. Furthermore CT examinations are performed by properly trained radiographers and pediatric protocols are adhered to. Different immobilization devices are also used to avoid the repeat exposures. Surveys report that from 2007 to 2011 there has been an increase of more than 10% per year in children CT examinations.

Despite this, pediatric radiology in Pakistan is mostly performed in general hospitals. Similar to other countries, we face many challenges in Pakistan. In many cases, the referring physician is unaware of radiation hazards and unnecessary repeat examinations are often performed. No data is available for patient dose records. In general hospitals dose reduction methods may not always be followed. Pakistan Nuclear Regulatory Authority (PNRA) is in the process of revising the present document PAK 904 regarding medical exposures which will include guidelines for pediatric medical exposures. PNRA also organizes training courses and workshops for physicians and pediatric radiologists.