Letter to the Editor

Dear Sir,

It was with pleasure and satisfaction that we learnt in the ICRU News of December 1998 about the adoption of the globalisation concept by the ICRU in its chairman's page. The intention expressed by the chairman to integrate more eminent scientists from all over the world into ICRU activities will certainly reinforce the well known sound scientific work of ICRU in the field of radiation units and measurements. The second objective of the globalisation concept was described as gaining better knowledge of the existing scientific and technological expertise in the world.

Reassured by these new perspectives we were then astonished to read the article on 'Chest Radiography - Assessment of Image Quality' by Carl Vyborny.

This subject area of really worldwide interest would be dealt with by a nearly exclusively American report committee, only one non-American member is named.

The absence of experts from other countries might, to a certain degree, be filled in by all-round knowledge about the field, but the list of 36 references does mention only 3 from European authors.

To our big surprise the last 20 years of European research in the subject area and the multitude of recent publications by European scientists and institutions are not even referred to at all. They testify, however, to an enormous amount of research work and progress, with results that have been referred to in numerous national and European guidance and legislation and in particular, since 1986, guidelines on quality criteria for diagnostic radiographic images, including chest radiographs, have been elaborated for adult and paediatric radiology (e.g., 1-3). They were backed up by European wide trials on the practical impact of these quality criteria, the data of which have been analysed by Maccia et al. (4).

Furthermore, numerous research programmes are under way in Europe on the development of the quality criteria concept for chest radiography (see in proceedings of a series of workshops organised by the European Commission (5-7). The European Commission is also running a research project on optimisation of image quality in modern radiology, concentrating on chest and lumbar spine, and taking radiation protection aspects into account.

One main part of this project is concerned with the assessment of image quality in an objective way and employs a systematic appraisal of the visualisation of structures in a clinical radiograph. The applied methodology includes a quality criteria scoring of each individual radiograph, a visual grading analysis, whereby each radiograph is compared to a reference image, and a receiver operating characteristic approach. The aim is to place the clinical image at the centre of image quality assessment. Each and every image,
demonstrating both normal and abnormal anatomy, would then be amenable to quality assessment.

On both sides of the Atlantic much work is underway on development and application of computer aided diagnostic techniques, for example neural network methods. In the future, even fully automated diagnostic techniques may be developed. The USA is playing a leading role in these developments. Hopefully the approaches and efforts for strengthening the analysis of radiographic image quality of both the US and European research initiatives should complement one another and the ICRU can play an important role in ensuring that this takes place.

References


(5) Test Phantoms and Optimisation in Diagnostic Radiology and Nuclear Medicine, Proceedings of a Discussion Workshop, Würzburg (D), 15-17 June 1992, Radiation Protection Dosimetry, Vol. 49, Nos 1-3, 1993


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Editor's Note:

As the letter of Drs. Schibilla and Moores makes evident, the ICRU’s new concern with globalization that was emphasized in the Chairman’s page in the December 1998 issue of ICRU NEWS has come none too soon. Of course, in the case of the ICRU work on the assessment of image quality in chest radiography, the extensive European research cited by Drs. Schibilla and Moores is, indeed, as they point out, known to all of those working in the field. The expectation is that the new ICRU work will, as called for by Drs. Schibilla and Moores, utilize the knowledge and understanding developed in all parts of the world in a way that will strengthen the analysis of image quality in chest radiography. Their point, however, emphasizes the fact that the ICRU has not paid enough attention to globalization questions in the past and will have to increase its vigilance on these matters in the future.