Meeting New Needs

The Chairman's Page

André Wambersie

Université Catholique de Louvain, Cliniques Universitaires St-Luc, 1200 Brussels, Belgium

Throughout its history, the International Commission on Radiation Units and Measurements (ICRU) has attempted to identify and meet emerging needs for recommendations on quantities, units and measurements of ionizing radiation.

In some areas, this comes about almost automatically because of the Commission's long and deep history of involvement in the field. The matter of fundamental quantities and units might be cited as an example here: the series of reports providing definitions for fundamental quantities and units, offers evidence of this, the most recent examplar being ICRU Report 60 published in 1998. The ICRU keeps a standing Committee on "Quantities and Units".

In radiation therapy, work on dosimetry, and dose and volume specification for reporting the treatments is another good example of this type of almost automatic identification of emerging needs. A long series of ICRU Reports has indeed been published, covering the different radiation therapy modalities. This implies, for the ICRU, continuous and close contacts and collaboration with the radiation oncology community in general as well as with the different national and international organizations.

In other fields, however, it has not always been obvious what the developing needs are and the Commission has to make continuous efforts to be sure that it remains cognizant of the potential for important contributions that might result from new ICRU activities. Sometimes a considerable period of study and watchful waiting is necessary before the emerging needs become evident. ICRU work on medical imaging provides a good example of this. Initially, the Commission saw the need for a report on the fundamentals of assessment of image quality and work was initiated on what ultimately became Report 54 (1996): "Medical imaging-The assessment of image quality".

Subsequently, it became clear that a series of efforts building on the base provided by Report 54 would be appropriate. These efforts are now underway involving report committees concerned with mammography, chest radiography, ROC (Receiver Operating Characteristics) analysis and nuclear medicine. Two aspects or trends need to be identified and combined when preparing these reports: on the one hand, image quality (and the efficiency of the examination to answer the medical question for which it has been prescribed), on the other hand the radiation protection aspects (and thus also the dosimetric aspects).
Dosimetric and protection aspects are of course addressed also by other international bodies. The activities supported and co-ordinated by the European Commission and the resultant reports deserve special mention.

The matter of non-ionizing radiation provides an example of a different kind. For many years, the Commission received suggestions that an ICRU involvement in the field would assist in establishing a scientifically rigorous and operationally useful approach to quantities units and measurements. Indeed, it seemed likely that, at the very least, an internationally accepted set of definitions of fundamental quantities and units, developed with the mechanisms for assuring rigor that the ICRU is used to employ, could represent a vital contribution to progress in the field. On the other hand, the ICRU has to recognize the achievements by other authorities in the field.

Therefore, actually, the Commission took a cautious approach, and determined that, for now at least, only limited and carefully targeted new activities, meeting specific needs, would be considered. Efforts aiming at identifying any such needs are now underway. Meantime the first ICRU Report on non-ionizing radiation was published in 1998: "Tissues substitutes, phantoms and computational modelling in medical ultrasound" (Report 61).

The Commission uses diverse means to identify potential new activities. Obviously, each of the Commission members is vigilant in the field of research or practice in which he is engaged and can be expected to bring emerging needs to the Commission's attention. Members of the ICRU Report Committees (a total of more than 90 recognized scientists) also represent a source of ideas on needed new activities. On occasion, the Commission will constitute a special study group to examine the potential for an important contribution in a specific area.

What might not be as well known, however, is the Commission's openness to suggestions proffered by individuals or organisations who believe that an important need could be met by a new ICRU activity. An example of this is the recent (1998) letter from the GEC-ESTRO (European Group of Curithetry of the European Society for Therapeutic Radiology and Oncology). The GEC-ESTRO recommended that the ICRU consider a revision of ICRU Report 38 on intracavitary brachytherapy published in 1985. A simple letter directed to a Commission member or the Chairman can initiate an evaluation of the proposed new ICRU activity.

Identification and evaluation of potential new activities represent an important and exciting part of the ICRU program. One might believe that in a field as well developed as quantities, units and measurements of radiation there can be little
more that needs to be done, but the dynamic character of the field of radiation science belies this view.

With continual development of new approaches and applications, and conceptual forment, the horizon expands and this emphasizes the importance of the ICRU's efforts to identify and meet new needs.