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### Measurement Assurance in Dosimetry

Proceedings of an international symposium on measurement assurance in dosimetry, organized by the International Atomic Energy Agency and held in Vienna, 24-27 May 1993. International Atomic Energy Agency, Vienna, 1994, 691 pp.

ISBN: 92-0-100194-0

Radiotherapy is increasing as a modality for cancer treatment not only in advanced countries but also in developing countries where cancer is now becoming an important health problem. Because radiotherapy generally requires a high accuracy in the delivery of the absorbed dose to a specified target volume, it is necessary that quality assurance is needed of all steps determining the actual dose delivery to a patient. The first step in this procedure is the calibration of a dosimeter in a standard dosimetry laboratory. Several sessions in this symposium were devoted to the status of primary dosimetry standards in different countries and to intercomparisons between primary standards. Because primary standards are only available in a few countries, the International Atomic Energy Agency, in co-operation with the World Health Organization, has therefore established a network of Secondary Standard Laboratories (SSDLs) which can provide users with dosimeter calibrations traceable to a primary standard. The activities of a number of these SSDLs were therefore the subject of a number of presentations during this symposium. In addition to the calibration of dosimeters, the determination of the absorbed dose under reference conditions in a water phantom was an important subject during this meeting. The various approaches as well as the different types of ionization chambers applied for these measurements were discussed extensively during some other sessions.

The complete dosimetry procedure in radiotherapy requires furthermore the determination of the dose distribution in a phantom, the calculation of the desirable dose distribution in the patient and the actual dose delivery to the patient. These subjects were dealt with at a congress in Prague, organized by the European Society for Therapeutic Radiology and Oncology, ESTRO, which was held directly after the symposium in Vienna.

The different sessions during the symposium covered the primary standards for absorbed dose, exposure and kerma, the various physical parameters required for these calibrations and intercomparisons of the different procedures to determine the absorbed dose under reference conditions. It was encouraging to observe that despite apparent differences between the national and international dosimetry protocols, the final dose obtained under reference conditions showed only small deviations for high-energy photon and electron beams. An important area of new development was the dosimetry of low and medium energy x-rays. A

number of groups presented new data which will be used in future protocols for the dosimetry of photon beams in this energy range. Another subject where new data became available was in the calibration and use of plane parallel ionization chambers. Furthermore, it became evident during this symposium that in the future direct calibration in absorbed dose to water will probably be the preferred way of calibrating ionization chambers. In the session devoted to this subject the progress by several groups towards such a dosimetry procedure was reported. The final session was devoted to diagnostic x-ray dosimetry. Although somewhat out of the field of work of most clinical physicists working in radiotherapy departments, it showed a number of similarities in calibration and quality assurance procedures compared with those for radiotherapy dosimetry equipment.

These proceedings contain a lot of detailed information which is difficult to find at other places. It is therefore a useful book for those who are interested in the latest developments in the field of calibration of ionization chambers, dosimetry protocols and quality assurance procedures. It is also recommended to everybody interested in the various dosimetry procedures applied in countries all over the world.

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### Werner and Ingbar's The Thyroid, 7th Edition

L. Braverman & R. Utiger, editors

Lippincott-Raven, 1996, 1,152 pp., 417 illustrations, 165 tables

ISBN: 0-397-51406-9

USD 215.-

This classical textbook of thyroidology, appearing in its first edition 1955, is now in the seventh edition. It is five years since the former edition and the text has been thoroughly revised and updated and there are new chapters dealing with environmental effects on thyroid physiology, the role of oncogenes in thyroid carcinoma and infectious thyroiditis. The authorship is truly international and the number of contributors has increased and are now 130, whereof 22 from Europe. The book covers both the basic and clinical aspects of thyroidology. It contains 9 parts starting with the normal thyroid followed by laboratory assessment of thyroid function, introduction to thyroid diseases and then four parts dealing with different aspects of thyroid diseases:

thyrotoxicosis, hypothyroidism, nontoxic diffuse and multinodular goiter, and tumors. One part deals with the thyroid in infancy and childhood and finally there are special topics in thyroidology including subclinical hypo- and hyperthyroidism, thyroid disease during and after pregnancy, resistance to thyroid hormone, and infections of the thyroid gland.

Overall the chapters are excellent with a lot of illustrative figures and informative tables, which summarize major concepts effectively. The reference list following each chapter is generally

very comprehensive and updated to 1995. The index of 68 pages at the end of the book is very pertinent and makes it easy to find different topics. The book is highly recommended to all physicians dealing with thyroid diseases.

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