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THE QUALITY AUDIT PROGRAM FOR RADIOTHERAPY IN THE PHILIPPINES

NIEVA O. LINGATONG

Secondary Standard Dosimetry Laboratory (SSDL)

Bureau of Health Devices & Technology (BHDT)

Department of Health, Manila, Philippines

A national quality audit program for radiotherapy was established in the Philippines in 1999 thru the International Atomic Energy Agency Coordinated Research Project "Development of a Quality Assurance Program for Radiation Therapy Dosimetry in Developing Countries." It is composed of remote audits of radiotherapy centers and the SSDL thru the IAEA/WHO TLD Dose Quality Audit program and on-site audits for external beam radiotherapy by an External Audit Group (EAG).

The data gathered up to December 2005 from on-site visits to radiotherapy centers and the results of the IAEA/WHO TLD Dose Quality Audit program were studied and analyzed to determine the impact of the program. A survey was also conducted among radiotherapy physicists to evaluate the program implementation and serve as basis for future planning.

The number of centers with results within the acceptable limit of $\pm 5.0\%$ deviation increased from 84.04% between 1977 to 1999 to 93.44% between 2000 – 2005. The SSDL audit results also improved for Cobalt 60 beam, from an average deviation of 3.1% between 1977-1987 to 1.02% between 1991-2005. For megavolt x-ray beam an average deviation of 0.7% was obtained between 1991-2005.

Thirty-six percent (36%) or 9 out of 25 beams audited for the first time had deviations in the clinical output greater than $\pm 2.0\%$ from those measured by the SSDL, with a maximum deviation of 3.44%. Twenty-eight percent (28%) or 6 out of 21 beams deviated more than $\pm 2.0\%$, during the second audit, with a maximum deviation of 3.48%.

There was a thirty-three percent (33%) increase in the number of teletherapy equipment and an improvement in the overall equipment performance.

Based on the recommended manpower published in the IAEA Tecdoc 1040, the number of radiation oncologist in 8 out of 21 centers is inadequate, more than half of the centers lack radiotherapy technologists, medical physics service is adequately provided only in 60% of operational radiotherapy facilities, 4 out of 21 centers do not have computerized treatment planning systems, 2 do not have radiotherapy simulator and 1 center does not have an in-

house radiotherapy dosimeter.

All respondents of the survey consider the national quality audit activity important in improving the quality of radiotherapy healthcare. They support its continued implementation and find the activity relevant to the current Philippine situation. Almost 50% of the respondents recommended annual frequency of on-site visits.

The study recommended the continued implementation of the national quality audit program for radiotherapy. It shall be improved based on the results of the evaluation and may be expanded to include other areas to be audited, giving due consideration to the budgetary requirements for additional manpower and instrumentation. A local system for remote audit using TLDs shall be developed and established to decrease the overall cost of the program implementation.

Key words: quality audit, radiotherapy

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A pilot study to test the use of TLDs for quality audit in non-reference conditions

A.K.Mahant, Vinatha S Panyam, D.V.Sansare,

Radiation Safety Systems Division

Bhabha Atomic Research Centre, Mumbai-400085, India

As a member of IAEA/WHO's network of Secondary Standards Laboratories (SSDL) SSDL, BARC has been conducting external quality audit programme since 1979 with a view to ascertain the status of Dosimetry in reference conditions at the radiotherapy centres in the country. Studies conducted by various audit groups at international level have found that the many radiotherapy centres who had produced audit results well within the acceptable limits in reference conditions could not maintain the similar level of accuracy for non-reference conditions relevant to clinical irradiation geometries. IAEA/WHO in view of this with an intent to use TLDs for quality audits in non-reference conditions has initiated a coordinated research project to evaluate the feasibility of the same. The data generated by the participant external Audit Groups (EAGs) will form the basis of future quality audit programme in non-reference conditions. The programme was planned to be carried out in three steps viz. (1) measurements in reference conditions (2) Measurement of the effect of field size, depth dose and wedge factor (3) Off axis measurements and wedge factor. The step (1) has been