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Quality of radiotherapy services in post-soviet countries: an IAEA survey

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Background

The fall of the “iron curtain” and dissolution of the Soviet Union represented a dramatic turning point for the countries involved. In the area of radiotherapy services, it is convenient to discuss the Soviet era as opposed to the post-Soviet/ modern era. The emphasis in the Soviet Union was on providing universally available free medical care, and this appears to have been achieved to a large extent. The post-Soviet countries had inherited the Soviet Semashko system of health care but, despite its achievements, many expressed discontent with what they saw as its poor quality, inefficiency and lack of responsiveness. There have been calls for change by national authorities, but they were less clear about how to address it, especially at a time of severe fiscal constraints and lack of personnel trained in concepts of modern medicine.

Methods

This Project was organized as a systematic gathering of information on the present status of radiotherapy practice in countries in Eastern Europe/Central Asia. The countries included in this study were: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Ukraine and Uzbekistan. Uzbekistan provided only general data on infrastructure, but did not participate in the survey. No reliable data on Turkmenistan could be obtained.

Objectives of the Project were: [1]to assess the current radiotherapy infrastructure in a group of 12 post-Soviet countries, [2]to assess the quality of radiotherapy services in these countries through the use of validated quality indicators(QI), and [3]identify nonstandard radiotherapy practices. The survey collated information on the country’s radiotherapy infrastructure as well as the quality of practice in each individual RT centre. It was based on two sets of validated QIs of structure and process in radiotherapy: the Australasian Clinical Indicator Report 2004-2011, and the Italian set validated and published by Cionini et al.(R&O,2007). These sets were adapted to the practice in the region so that a few of the indicators were not used.

Results

The survey was sent to a total of 184 centres. 108 radiotherapy centres (59%) replied. The collection of data using the survey tool faced logistical obstacles in the Russian Federation. Of the total of 119 radiotherapy centres in the Russian Federation with available contact information, 80 acknowledged that they have received the survey, out of which 19 centres (16%) returned the requested data. Although the sample cannot be considered representative of this country, it gives an approximate idea of the realities and obstacles faced by Russian centres. From the quality of services viewpoint, the results showed that in many aspects of patient care and RT treatment chart management the indicators were up to international standards. However, some issues in individual countries were identified. Waiting time for RT was found acceptable. 90-100% of patients sign informed consent for treatment. Most cases are discussed among various disciplines; however, these are either consecutive consultations or organized ad-hoc (“consiliums”) for difficult cases, and not well-established multidisciplinary tumour boards. Mean 42.5% of RT courses are planned using CT and the proportion of curative/palliative cases is 2.7. Only in AZB and GEO most patients are treated using an MLC. The ratio of unplanned maintenance downtime/planned maintenance in days was 3.4 for Co-60 units and 5 for LINACs (benchmark should be ≤ 1). Except for Georgia, all other countries practice mostly 2D-radiotherapy planning and delivery, but some had a significant fraction of patients treated with 3D-CRT and a few with IMRT. The mean number of fractions for curative courses was 31, for palliative 14, and overall 23 fractions/RT course. At the time of the survey, two countries lacked brachytherapy systems. Many brachytherapy units using large

Co-60 sources are still in use. Split-course RT is routinely used in 9/10 countries studied. This is done to avoid toxicity and is required by the local treatment protocols in H&N, cervix, lung and prostate cancers. The naming and task profile of RT professions is different than in western countries. Training in radiation oncology tends to be much shorter and in the majority of countries not well-structured. The specialty of medical physicist is not recognized in 9/10, and the specialty of RTT is not recognized in all countries. Appropriate training programmes for medical physicists and RTTs are lacking.

Conclusions

Strengths and weaknesses of radiotherapy services were identified. Most countries need modernization of the RT infrastructure coupled with adequate staffing numbers and education programmes. Some radiotherapy practices are not in line with what is considered modern practice in other regions. More attention is required to the areas of quality systems and safety. Quality systems should include regular independent audits as well as the use of radiation oncology-specific quality indicators over time.

Country

IAEA

Institution

IAEA

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